



University of
Nottingham

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Crafting Content: The Discovery of Minecraft's Invisible Digital Economy

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This dissertation is submitted to the University of
Nottingham for the degree of *Doctor of Philosophy*

May 18

“Tis a lesson you should heed:

Try, try, try again.

If at first you don’t succeed,

Try, try, try again.”

By Thomas H. Palmer, 1840

This proverb was first introduced to me by my primary supervisor, Andy Crabtree, when a paper I submitted was rejected. It then followed me till the submission of this thesis, helping me in looking forward and not getting disheartened by the many mishaps PhD students face across their studies.

ACKNOWLEDGEMENTS

First and foremost, I would like to thank my wife, Ioanna Danai Styliari. I would not be able to make it this far if it was not for her unduly patience during this long journey. Thanks also to my supervisors, Andy Crabtree and Sarah Martindale, for their support and invaluable guidance. Their persistence in doing hard work and not cutting corners will always be cherished.

Particular thanks are reserved by all my good friends who stood by me during these long years. George Filip, Martin Porcheron, and Andreas Reiter, the stimulating academic discussions (and even more so the fiery arguments) we had kept things interesting. Lefteris Floros, Tatiana Charikleia Styliari, and Lucas Styliaris, you were there during the best (and sometimes worst) moments of this PhD, cheering me up, lifting my spirits, and putting up with my unbearable complaining.

I also want to thank my family for giving me the opportunity to pursue an academic degree in the first place. If it were not for those early steps in academia, I would not be where I am today.

Of course, this work would not be possible without the help of the Minecraft professionals that participated in it. I want to express my deepest gratitude to them for all the time and effort they invested in this project. I can only hope that I managed to produce an account that reflects their work and their community.

Additionally, I would like to thank and acknowledge Emma Juggins and Felicia Black for doing the ‘invisible work’ of managing the Horizon Centre for Doctoral Training.

Finally, many thanks to all those that provided last-minute proof-reading: Erinna Bowman, Matt Turpin, Martin Porcheron, Andreas Reiter, and Sarah Martindale.

Panagiotis Koutsouras is supported by Horizon Centre for Doctoral Training at the University of Nottingham (RCUK Grant No. EP/G037574/1).

ABSTRACT

This thesis presents an ethnographic study that aims at explicating the work of creating content in Minecraft. The existing literature paves the way in understanding Minecraft's community by providing fragments of what players do. However, the game is studied mainly from a ludic perspective or is treated as a resource to explore distinct research agendas, instead of a field of study in itself. As such, particular phenomena that are situated inside Minecraft's community are lost.

The conducted fieldwork discovered the invisible digital economy that is part of this community. More specifically, the chapters to follow elaborate on the actors involved in this economy, covering their roles, responsibilities and goals. Furthermore, the lived work of content production is unpacked by presenting the various work practices members attend to in commissioning, creating, and delivering Minecraft content.

It also becomes evident that there is a complex division of labour at play, which is based on a fragmented infrastructure as Minecraft itself does not support the wide range of activities that are necessary for carrying out the work. Essentially, actors bootstrap the market's infrastructure by appropriating or even creating bespoke systems for conducting the various work practices that are entailed in this business. On top of that, these systems are utilised for articulation work, which is necessary for tracking progress between the geographically dispersed actors, accounting for conducted work and addressing contingent scenarios.

The main contribution of this PhD project is the discovery of this digital economy, which evidently plays a significant role in Minecraft's current form and development. Additionally, prevailing understandings of Minecraft's ecosystem are re-visited, re-examined, and re-specified, based on the empirical evidence presented in this thesis. Finally, a number of design implications are raised with regard to addressing the game's lack of CSCW support.

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NOMENCLATURE

AMT	Amazon Mechanical Turk
MCD	Membership Categorisation Device
MMOG	Massively Multiplayer Online Game
PMC	Planet Minecraft
RMT	Real Money Trading
SMC	SpigotMC
UGC	User Generated Content

Chapter 1

1 INTRODUCTION

This chapter introduces a number of key topics to familiarise the reader with the goals and structure of this PhD thesis. The first section of this chapter briefly unpacks the **research problem** by providing the research statement this thesis addresses. Following that, there is an elaboration of the **aims** of this work, as well as the **objectives** through which the aims were realised. A **chapter breakdown** is listed, accompanied by an explanation of what the reader should expect to find in each of the following chapters. Lastly, this thesis' original **contributions** are mentioned.

This PhD project is influenced by multiple disciplines, namely: game studies, ethnography, ethnomethodology, CSCW, and interactionism. How each of these disciplines has fed into the conducted research will be in the methodology as well as the discussion chapters.

1.1 RESEARCH PROBLEM

The gaming industry is arguably one of the leading players in the entertainment business. Having started as a niche market, it surpassed the film industry in revenue¹ and has acquired a prominent role in everyday entertainment. Over the last decade, new modes of play and content consumption have been incorporated gradually into games, providing not only more diverse and rich gaming experiences but also the capacity for players to acquire agency in games as active creators of and contributors to their own entertainment.

An example of such developments are the digital economies and business practices that have appeared in the context of videogames. Massive Multiplayer Online Games (MMOGs) in particular and the inclusion of virtual economies

¹ <http://www.bloomberg.com/news/videos/2015-08-05/bigger-than-hollywood-the-numbers-behind-video-gaming>

as part of the games' design led to the emergence of markets that revolve around the monetisation of in-game content. These markets have been explored from many different perspectives, with some of the most notable studies shedding light on the commodities at stake (Castronova 2008) and the ways in which they affect the game's structure (Dibbell 2007).

Another distinctive example of new approaches to game design and play can be found in the form of User Generated Content (UGC). Initially restricted to in-game map editors and subsequently expanding into "modding" (the creative practice of altering in-game assets (Postigo 2007; Sotamaa 2010b)), UGC changed the role of the player from passive consumer to active participant in the creation of content for their favourite games. This is further exemplified by the emergence of modern videogames, such as Minecraft², which have UGC at the core of the gaming experience they provide.

Existing bodies of work have paved the way in understanding a wide spectrum of matters relevant to Minecraft and similar games (occasionally coined as "sandbox" games), such as: the constituents of the gaming experience in said games (Ross et al. 2012; Abend & Beil 2015; Duncan 2011; Koutsouras & Cairns 2013), equity and inclusiveness (Ringland et al. 2017; Ringland, Wolf, Boyd, et al. 2016; Ringland, Wolf, Faucett, et al. 2016), and education (Ames & Burrell 2017; Short 2012; Bos et al. 2014; Schifter & Cipollone 2013). Whilst these studies, which derive mainly from the game studies' literature, do manage to provide fragments of the processes involved in creating UGC, they do not explicate how these processes come about and how they are meshed together in *doing* content production. As a result, the underlying phenomena that *make Minecraft work* are missed and Minecraft itself is treated as a means to an end; as a way of addressing distinct research agendas instead of a field that warrants to be investigated, understood and unpacked.

This PhD project addresses this problem by *explicating* the work of creating in-game content, instead of providing *interpretations* of the setting. Therefore, the research problem this thesis addresses is framed thus:

² <https://minecraft.net/en/>

Minecraft needs to be understood as an organised setting. When treated as a means to an end in informing distinct research agendas, the phenomena involved in creating content are missed. This can result in interpretations of the setting, which do not represent the *work to make Minecraft work*.

1.2 AIMS & OBJECTIVES

The main aspiration behind this research project is to address the missing *what* of producing Minecraft content. In doing so, this thesis uncovers how the work practices of creating in-game content are brought about. This understanding does not only address the existing problem in game studies' literature (that of interpreting how content production comes about); it also stands as a proposition to follow a more pragmatic approach in studying videogame settings by paying closer attention to what members of the setting do and how they construe their practices.

This was achieved by empirically investigating these practices through ethnographic fieldwork. By becoming immersed in the setting, the research captures the *members' perspective* of building UGC.

1.3 CHAPTER BREAKDOWN

The structure of this thesis is as follows:

- Chapter 2 elaborates the **methodology** adopted for addressing the research gap. Specifically, it discusses a number of distinct topics related to conducting ethnography, such as: (1) what ethnography is and why it was chosen as the optimal approach to address the research goals; (2) the reasons that led to the exercise of ethnomethodological indifference; (3) the main analytical orientation adopted for analysing the accumulated fieldwork material; and (4) the generalisability of the findings.
- Chapter 3 **introduces the field site** and covers a number of practical matters with regard to the study itself. As such, it briefly elaborates on (1) what Minecraft is, (2) how participants were recruited, and (3) how data were collected. Furthermore, a (4) summary of the findings is

provided in order to familiarise the reader with the setting, the actors involved in it, and the outcome of members' work: Minecraft maps.

- Chapter 4, 5, and 6 constitute the main **findings** chapters, which are broken down into three discrete parts for clarity and readability. The work practices entailed in creating Minecraft content are quite diverse and extensive, and involve a number of contingent scenarios, a multitude of individuated activities and tasks. For this reason, they are grouped into three main categories: the work practices that take place **before building**, the activities that take place while **crafting content**, and lastly the work practices that take place **after building**.
- Chapter 7 **discusses** the “so what?” of the conducted ethnographic fieldwork by presenting what was discovered and how that contributes to the existing academic literature. In doing so, it unpacks the predominant understandings surrounding Minecraft. This discussion revolves around three specific matters: (1) the discovery of the digital economy that resides inside Minecraft's creative community; (2) this economy's relevance to other digital economies; and (3) how this discovery contrasts with game studies' viewpoints on Minecraft.
- Chapter 8 describes **design implications** for supporting Minecraft's fragmented ecosystem.
- Chapter 9 **concludes** the thesis by providing a recapitulation of its research aims and objectives, the main findings of the fieldwork, and its critical contributions to the existing knowledge base on Minecraft. Furthermore, the identified “known unknowns” are enumerated, and the future plans with regard to exploring some of them are laid out.

1.4 CONTRIBUTION

This PhD thesis makes three original contributions to the existing bodies of work that have investigated Minecraft and similar videogames revolving around UGC:

- **Discovering Minecraft's hidden digital economy.** Previously unrecognised, this economy plays a significant role in Minecraft's current form and development. This thesis both reveals the “work to

make the Minecraft economy work” and compares it with existing digital economies in videogames, such as ones that are found in Massively Multiplayer Online Games.

- **Re-specifying theoretical assertions about Minecraft.** A significant body of work can be found in game studies literature, which theorises about the production of UGC. Whilst this approach provides hints of the work entailed in the production of such content, it is argued that a number of phenomena found inside the community are lost because of this theoretical approach. A re-specification of the predominant game studies theorisation analysing the relationship between work and play is proposed, grounded in this thesis’ findings.
- **Informing design.** This thesis’ findings point to Minecraft’s fragmented infrastructure and to the lack of CSCW support for completing the work of commissioning and creating content. In support of this lacking infrastructure, a number of design implications are raised.

Due to the above, it becomes evident that this thesis is addressed to three distinct types of audience:

- **Game studies scholars** that look into digital economies in videogames (e.g. real-money transactions in online games) and content co-creation practices (e.g. modding communities, Minecraft, etc.);
- **Workplace studies scholars** that are interested in empirical investigations of digital workplaces;
- **Game designers**, particularly those interested in designing and developing online games that revolve around content generation, collaboration, and content monetisation.

Chapter 2

2 METHODOLOGY

This thesis' research aims are addressed via an ethnographic approach to studying the setting: Minecraft's commissioning market. Ethnography is a well-grounded approach of academic enquiry in multiple disciplines, ranging from anthropology (where it originates from) to sociology, cultural studies, and computer science. Even so, ethnography is conceptualised and applied differently across these fields. Due to that, it is imperative to elaborate on a number of matters, such as: (1) **why ethnography** was chosen as the appropriate "method" in exploring this market; (2) the influence **ethnomethodological indifference** had in this thesis; and (3) what was done in developing an **understanding of the site**. In addition to that, there is a discussion with regard to (4) the **generalisability** of this thesis' claims.

2.1 WHY ETHNOGRAPHY?

This thesis preoccupies itself with addressing "the missing what" of Minecraft studies. This term stands as a criticism addressed by ethnomethodologists to sociological investigations that fail to grasp the actions and interactions that are involved in the day-to-day conduct of a setting's work. Garfinkel, in an unpublished manuscript, specifically raises this issue by drawing upon Becker's work on playing jazz music (Becker 1963):

"Harvey Sacks speaks of a curiosity in the work and history of the social sciences: the 'missing interactional what' in lay and professional studies... David Sudnow epitomises the issue as follows... he speaks of the 'Howard Becker phenomenon' in sociologists' studies of jazz... A curiosity of the reportage, Sudnow points out, is that Becker's articles speak of musicians' work and do so by omitting entirely and

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exactly the practices that for those engaged in them makes of what they are doing, make up the recognisably just so, just what, just this going on: making music.”

In this thesis' context, the “missing what” is identified as being the lack of understanding of the lived work of producing Minecraft content. Existing bodies of work have looked into Minecraft from multiple perspectives (e.g. education, equity and inclusivity or ludic pursuits) and managed to present fragments of the collaborative nature of the work that takes place in the game. However, significant aspects that are involved in Minecraft's organisation are still missing, such as players' methods in creating UGC.

In bridging the gap between the existing literature and developing an understanding grounded in members' own methods of carrying out their work (that of creating UGC), an ethnographic approach was adopted. The aim of following this approach was to put members' expertise at the centre of academic enquiry and provide an account of how members' actions and interactions shape their social world.

Through ethnographic fieldwork, it becomes possible to understand what takes place in a setting and how members organise the social context they work in. In accomplishing this, the ethnographer needs to engage with the “natives” of the setting and not with those that are loosely affiliated with it. As Malinowski describes it, information provided by the non-natives of a setting that happen to be passing by or live in close proximity to it is not representative of what natives do (Malinowski 1978). More precisely, in his practical guidelines on how to do fieldwork, he proposes:

“... cutting oneself off from the company of other white men, and remaining in as close contact with the natives as possible, which really can only be achieved by camping right in their villages.”

Malinowski's practice constituted a paradigm shift in doing fieldwork, as anthropologists before him were basing their investigations not on self-involvement in the field of study, but rather on accounts they received from

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those that had some connection with it. These accounts were further enriched by exhibits of natives' lives, such as photographs and artefacts of daily activities. He was the one to propose that anthropologists and social scientists should "come down off the verandah" and "grasp the native's point of view;" to first engage with the "natives" and develop an understanding of how they live their lives prior to producing the ethnographic analysis.

Of course, Malinowski's subject matter was not the adaptation of a specific videogame (Minecraft) in a work setting. His studies revolved around the exploration of culture in remote societies, which had their rituals, economies, traditions, language, customs, etc. These differences between the ethnographers' and the natives' experiences resulted in the necessity to invest huge amounts of time in the field. Lack of a common language between the ethnographer and the natives, for instance, occasioned the adoption of other means to understand abstract notions that partake in the organisation of society, such as justice and punishment of those that committed crimes. Malinowski's methodological proposition was direct observations of how natives deal with these matters in real-life to build an initial understanding that will then inform subsequent enquiry (ibid.).

Ethnography, as is applied in academic fields such as CSCW, Computer Science, and HCI, does not demand the same type of disassociation from everyday life and the complete immersion in a setting. On the contrary, these design-oriented fields "constrain" ethnography, as the latter needs to be adapted to the ever-changing agile processes involved in the development lifecycle of computer systems (Crabtree et al. 2013).

In relation to that, it needs to be stressed that ethnographic investigations of the workplace are part of a broader shift from what traditional anthropological ethnography was interested in. This shift was initiated by the Chicago School of Sociology, which took as its subject matter not "non-western societies and cultures" but rather the everyday life that is "closer to home" (Button et al. 2015). One of the sociological strands that came out of the Chicago School was that of Symbolic Interactionism, a term introduced by Herbert Blumer (Blumer 1986). Symbolic Interactionism's main viewpoint was that social order is

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brought about through human interactions, which became the main focus of ethnographic research for those that exercised it. Shaffir and Pawluch (2003) summarised the various matters interactionists investigated as follows:

“Hughes sent his students into the city to study the janitor, the cab driver, the doctor, the union official, the factory worker, the musician, and others.”

By studying their own societies, ethnographers will already be familiar, if not experts, with a number of subjects that constituted significant pain points in traditional anthropological studies, such as language (Crabtree et al. 2013).

Nevertheless, doing fieldwork involves a number of matters that the ethnographer needs to attend to, even in a design context, such as: getting access to the setting, receiving consent from the participants with regard to recording and keeping notes of any of the observed activities, and developing a certain level of competence in the work under investigation (Crabtree et al. 2012). Most importantly though they need to engage with the field itself, “get their hands dirty” in sociological research and attend to the things members of the setting deal with on a day-to-day basis.

“Go and sit in the lounges of the luxury hotels and on the doorsteps of the flophouses; sit on the Gold Coast settees and the slum shakedown; sit in the orchestra hall and in the Star and Garter burlesque. In short, gentlemen, go get the seat of your pants dirty in real research.” (Cited in (Prus 1996))

It needs to be mentioned that ethnography is not reduced to the task of going to the field and assembling a corpus of exhibits that account for what members do (Bittner 1973). By being immersed in the field, the ethnographer is capable of understanding what is seen. However, it is necessary for the data to be analysed in order to produce such an understanding and explicate the setting’s work.

Fieldwork and analysis of said material though do not constitute individuated activities that are performed in a sequential order; on the contrary, analysis permeates the entire ethnographic endeavour (Crabtree et al. 2012; Heath et al. 2010). It starts from the very first day the researchers step inside the social

setting they want to investigate and lasts till the day data collection is over, the relevant field reports are produced, and the researchers have moved on to their next enterprise.

This occasions the question of how the analysis was performed in the context of this thesis, which is discussed in the following two sections.

2.2 ETHNOMETHODOLOGICAL INDIFFERENCE

This thesis is influenced by ethnomethodological policies and in particular ethnomethodological indifference. This notion, originally introduced by Garfinkel and Sacks (as discussed in (Garfinkel 1967)), stands for ethnomethodology's stance against a priori models of conducting sociological research. Through the lens of ethnomethodology, what drives ethnographic investigations is not the methods researchers apply in conducting their research, but rather the methods members employ while attending to their everyday activities (Garfinkel 1967; Livingston 1987; Cuff et al. 2015). Ethnomethodology dictates that researchers' aims should be to reveal and unpack members' methods, as they are the ones that are used by the "natives" in order to account for their work, coordinate with each other and make sense of their own setting. To quote Garfinkel (found in (Hill & Crittenden 1968)):

“Back in 1954... Fred... Strodtbeck... had ‘bugged’ the jury room in Wichita. He asked me to... listen to the tapes of the jurors... the notion occurred to me of analysing the deliberations of the jurors... these magnificent methodological things... like ‘fact’ and ‘fancy’ and ‘opinion’ and ‘my opinion’ and ‘your opinion’ and ‘what we’re entitled to say’ and ‘what the evidence shows’ and ‘what can be demonstrated’ and ‘what actually he said’ as compared with ‘what only you think he said’ or ‘what he seemed to have said’... Here I am faced with jurors who are doing methodology... It’s not a methodology my colleagues would honour if they were attempting to staff the sociology department... Nevertheless, the jurors’ concerns for such issues seemed to be undeniable... That is what

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ethnomethodology is concerned with. It is an organisational study of a member's knowledge of his ordinary affairs, of his own organised enterprises, where that knowledge is treated by us as part of the same setting that it also makes orderable."

This proposition in ethnographic research is not universally accepted. Williams and Irani (2010), for instance, suggest that academic rigour comes from the ethnographers who are capable of providing accounts that describe social life and culture in a setting based on their own interpretations of members' methods. The epistemological understandings ethnographers bring to the table only reinforce the study's validity (Marcus & Fischer 1999). Along these lines, Dourish (2014) argues that the introduction of epistemological notions in ethnographic investigations is not problematic, as the researchers participate in the setting, interact with other members and engage in their day-to-day activities. As such, the outcome of those interactions and the researchers' interpretations of the social context they study is as valid as any other member's account.

However, according to Button et al. (2015), such an ethnographic approach does not have the setting and its members as its focal point, but rather what ethnographers make of the setting and how they interpret members' interpretations. Regardless of whether an ethnographer studies the field from an ethnomethodological perspective or not, what matters is the adherence not to particular epistemological disciplines but to members' methods with the goal of "mak[ing] visible what is done in the doing of situated action" (Crabtree et al. 2012).

Due to the novelty of this study and to the "missing what" of creating content in Minecraft, applying a priori frameworks in researching the field and analysing the gathered data was considered inappropriate, as it would propagate one of the problems this thesis aims at addressing; the lack of accounts in-and-of the work of UGC production in Minecraft. As was touched upon in the introduction and will be covered later, cursory investigations of Minecraft's setting have not produced a vivid account of what players do and how they carry out their work.

This is the reason why this PhD project was initiated without having a particular viewpoint in mind. It was left to the setting's inner workings to dictate what warrants attention and investigation. Such an unstructured approach in conducting ethnographic fieldwork is not unknown, especially in ethnomethodological studies (Crabtree & Tolmie 2016). In fact, practical guidelines in doing fieldwork informed by ethnomethodology suggest “dispensing” the application of any research methods, as ethnographers need to develop their own competence in understanding members' methods (Crabtree et al. 2012)³.

2.3 UNDERSTANDING THE SETTING

The overall corpus of ethnographic material constituted of video and audio data, field notes, screenshots of in-game actions, forum posts, Skype logs, etc. (see section 3.2.3.2). Analysing and presenting this material in a manner that represents members' methods occasioned a number of activities, which are covered in this section.

2.3.1 Interpretation vs developing vulgar competence

To be able to reliably present how the work is organised in a setting and how members make their actions and interactions accountable to one another, researchers need to develop “vulgar competence” in the members' work (Garfinkel & Wieder 1992). Developing such competence should not be treated as a banal matter, as it is the ticket to understanding not only *what* members achieve through their daily routine, but also *how* they carry out their work.

This routine might seem as if it just happens. However, there is always reasoning and sense-making behind members' actions; “even if it appears to an outsider that nothing is going on, there will be something that is being done” (Button & Sharrock 2009). The researchers' job is to reach a position where they are capable of not only understanding the routine but also how “members *make* their work routine” (Crabtree et al. 2012), and being “in a concerted competence of methods” (Garfinkel & Wieder 1992) with the members.

³ The conducted fieldwork was informed by ethnomethodology in the sense that it was attentive to ethnomethodological phenomena: *how* work is conducted and explicated, as well as *how* ordinary practices are explained.

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Essentially, fieldwork should start not from documenting the overarching work practices that partake in a work setting, but rather from the mundane actions and interactions members perform as part of these work practices. Enquiring about how members do their individuated actions, how they track their (or others') progress, what is the reasoning behind their actions, what resources and systems they use, etc. will grant researchers the necessary competence in seeing the situational character of the work. This competence will be further reinforced by doing the work themselves

On top of that, developing vulgar competence should be guided by what Garfinkel and Wieder (1992) refer to as "unique adequacy requirement." This notion asserts that it is not necessary to attend to all the contingent scenarios that relate to a particular matter (be it tasks, activities, processes, etc.) in the field of study; any instance of any task that belongs to a particular work practice will do with regard to developing the relevant competence in understanding how the overall work practice is enacted. Moreover, unique adequacy dictates that the researchers should avoid using any formal sociological methodologies in understanding the work practices that members employ in doing their work. On the contrary, they should aim at understanding *members' methods*, by becoming competent in the setting's work.

Developing vulgar competence is not related only to the ethnographer's need to be personally involved in the workplace in order to understand the setting; it is also intrinsically connected to the type of accounts produced through ethnographic fieldwork. By not attending to members' everyday work practices, ethnographers' accounts face the possibility of not accurately capturing and explicating the lived-work that takes place in the setting. On the contrary, there is a risk of providing interpretations over the observed phenomena. Slack (2000) refers to such accounts as 'stipulative reflexivities;' explanations that rely on the researcher's own understandings and interpretations of the setting's work, instead of the members' own *reflexive* accounts of their daily affairs. Furthermore, Slack criticises 'stipulative reflexivity' by claiming that:

'[...] it is almost as if society members cannot be trusted to provide accounts of their own actions and that accounts must

in some sense be 'repaired' by sociological intervention'
(ibid.)

This thesis takes an 'endogenous' stance in the matter of reflexivity, by drawing upon members' own accounts in explicating the work of content production in Minecraft. 'Endogenous reflexivity' refers to the production of sociological descriptions that draw upon the 'whats' and 'hows' of members' actions in the setting, as well as their own reflections on their work. By developing vulgar competence, it was possible to become adequately capable of understanding the inner-workings of the setting and to reach the point where 'analytic and member concerns merge and the very distinction between the [...] analyst and member is obliterated' (Pollner 2012).

The exact tasks that were followed towards developing vulgar competence are discussed in the following chapter (see chapter 3).

2.3.2 Analysing fieldwork material

Having these directions in mind, the analysis of the data was conducted in two, interrelated, steps: mapping the work practices and their underlying tasks and describing the work, as discussed in the following subsections.

2.3.2.1 Mapping the data

In order to resemble the various work practices involved in creating content, as well as their underlying tasks, diagrammatical maps were created (see Table 1 on page 38). Drawing upon Crabtree et al.'s (2012) "horizontal and vertical slicing" of the data, these maps are representations of the sequential order of the practices that are done in a setting towards accomplishing the work that is at play.

These two-dimensional maps have two distinct characteristics:

- *What* is done in the setting: the work practices, which are placed in its x-axis; and
- The underlying activities involved in the doing of each of the work practices, which are placed in the map's y-axis.

Besides articulating “what is done,” these maps help the researchers in understanding what they know and what they do not know with regard to the setting’s work. In teasing out the sequential ordering of each of the activities involved in the overarching practices, the researchers should take into account a multitude of matters, such as: what is done; how it is done; who does what; what resources are used, etc. Answering these questions might occasion revisiting the setting with the aim of finding the right answers that will enrich and modify the maps.

Regardless of their benefits, horizontal and vertical slices are only an abstraction of the actual work (Crabtree et al. 2012). Whilst they do manage to describe the basic arrangement of the work, *how* the work is done cannot be illustrated in a two-dimensional (or rather in any) diagram. On top of that, they depict the sequentiality of work practices but not the contingent scenarios that emerge in any work setting and detract from this sequence. These matters were addressed through the adoption of “thick descriptions.”

2.3.2.2 Unpacking the ethnographic material through thick descriptions

Originally coined by Ryle (1968), thick descriptions aim at providing a detailed account of not only what is done through an action, but also how this action becomes accountable to those that it is addressed to and what is achieved through it. Ryle presented the notion of thick descriptions not as a tool to analyse fieldwork material, but rather as a philosophical standpoint with regard to how researchers can explicate what members of a particular setting achieve through their everyday actions. He provides numerous examples of the different understandings someone can elicit by simply looking at others performing any type of action and wonders whether the elicited understandings are accurate representations of what actors actually achieve through their actions. One such example is the following:

“Two boys fairly swiftly contract the eyelids of their right eyes. In the first boy this is only an involuntary twitch; but the other is winking conspiratorially to an accomplice. At the lowest or the thinnest level of description the two contractions of the eyelids may be exactly alike. From a cinematograph-

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film of the two faces there might be no telling which contraction, if either, was a wink, or which, if either, were a mere twitch. Yet there remains the immense but unphotographable difference between a twitch and a wink.”
(ibid.)

What this example illustrates is that two seemingly identical actions (winking and twitching) can differ significantly, depending on the practical reasoning behind their enactment, as well as members’ knowledge and expertise in recognising and deciphering them. Those that are aware of the winker’s actions can understand what the winker does via winking. For those outside of the context where the action takes place though, there is no discernible difference between winking and twitching. To them, a wink is seen merely as a reflex, something that has no reasoning and no practical accomplishments. From an analytical perspective, sociological descriptions need to be capable of conveying the accountable character of action of those that participate in the setting. What matters is not the description of the mechanical actions themselves, but rather what is accomplished through these actions and how members make them accountable to others.

This type of descriptions stands in contrast to thin, “scenic descriptions” (Button 2000), which are criticised for constraining the outcome of an ethnographic fieldwork only to what members do in a setting. Such an approach does not closely examine members’ knowledge and members’ expertise, but rather elicits generalised depictions of the setting via codification of members’ actions and interactions. To draw upon an example presented by Button et al. (2015), scenic descriptions of an engineering work environment might argue about the gender inequality in this particular industry. Whilst such arguments are informative of some of the setting’s characteristics, they do not manage to provide an account of what the work of engineering is and how this work is carried out by the members. Effectively, such descriptions produce abstractions of what is entailed in the work practices of a setting and as such do not manage to convey “what is done in the doing of practical action and practical reasoning” (Crabtree et al. 2012).

It needs to be recognised that the adoption of thick descriptions bears the risk of indefinitely extending what is described, a phenomenon that Ryle himself refers to as “no stop step” (Ryle 1968) in accomplishing, learning, doing, etc. something; there will always be something more to describe. If that is the case, when do the descriptions reach an adequate level with regard to describing the setting’s work? In addressing this problem, the descriptions produced as part of analysing the accumulated fieldwork material focused on “what is done in the doing” of content production in Minecraft, on how members account for their actions and on how they coordinate with each other. By concentrating on these matters, as they happen in the fields of work where they are enacted, sociological descriptions remain in context and present the accountable nature of members’ methods (Button & Sharrock 2009). This is further pronounced by Garfinkel (1967), who argued that any type of account provided by a member of a setting points back to the setting and the work that takes place in it:

“... members’ accounts, of every sort, in all their logical modes, with all of their uses, and for every method for their assembly are constituent features of the settings they make observable.”

2.3.3 Strauss’ division of labour

As a result of ethnomethodological indifference and developing vulgar competence, it was made visible that a division of labour is a feature of the work of creating Minecraft content. This division of labour turns upon the appropriation of multiple IT systems and resources, as well as cooperative work between members with different roles, responsibilities and expertise. In order to get to grips with this division of labour and the underlying work practices in creating Minecraft content, Strauss’ analytic framework for researching the workplace was used as a way of mapping the work (Strauss 1985). As such, it constitutes a representational device to depict the research findings instead of a tool that facilitated or drove the analysis. This is further reinforced by the terminology used while unpacking the data; instead of fabricating categories that were believed to be representative of the setting’s work, the mapping was based entirely on the words and terms members used while talking about their practices.

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Strauss re-conceptualised the notion of the division of labour by proposing that the focal point of the study of work should not be how manpower is distributed across the different ranks of an organisation, but rather what the work is and how it is conducted. This reasoning is based on the viewpoint that work, as it happens in the workplace, revolves around the doing of a project. Consequently, all the tasks that are carried out as part of the setting's work aim at the accomplishment of a project and the creation of a product. As a result to that, the division of labour is not something that is determined and imposed by the organisation where the work is situated in but rather is produced through members' actions and involvement in the project itself.

To further unpack this proposition, Strauss coined the term "arc of work:" the sequential or concurrent arrangement of all the tasks, "clusters of tasks" and discrete "segments" (ibid.) in the doing of a project. Strauss argued that the arc, to some extent, can be planned by its actors. More precisely, there are those that decide whether "a project is necessary or desirable," those who plan the "totality or segments of the arc," as well as the ones that will be allocated the various tasks for doing the project (ibid.).

This discussion raises a few points that warrant further clarification. First of all, the arc itself does not constitute only a small number of sequentially arranged tasks. On the contrary, it can be broken down into a number of discrete segments that constitute the project's overarching work practices. Each of these segments are split up into groups of or individuated tasks.

Secondly, whilst the arc can be laid out prior to the initiation of working on the project, contingent scenarios can emerge, which deviate the work from its predefined arrangement. Such occurrences necessitate the alteration of the way segments, clusters of tasks and tasks are assigned to actors, carried out, accounted for, and coordinated.

Thirdly, these activities are usually assigned and performed by different actors who are not necessarily collocated. These actors might belong to different hierarchical groups, hence being unaware of what individuals in other departments or hierarchical levels of the organisation are responsible for.

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Because of these matters, it is essential for those that participate in the project to articulate their work to each other. This becomes even more crucial when actors are dispersed across different sites of work, organisational levels, departments, etc. Strauss refers to this set of activities as “‘articulation work’ – a supra-type of work” that “amounts to... the meshing of... tasks, clusters of tasks, and segments of the total arc” (ibid.). By doing articulation work, actors account for their actions to and coordinate with those they work with, namely: subordinates, managers, and those that are on the same rank as them. Accountability itself revolves around a number of matters that are pertinent to the actors’ work, such as: what they do, how they do it, when they finish their tasks, in what capacity they function, etc.

In *doing* accounting, actors employ the use of “accountability systems,” which can vary from “formal systems of reporting” (ibid.) that are part of the accountability procedure exercised by the organisation itself, to bespoke solutions actors come up with to facilitate their needs. In explaining this notion, Strauss draws upon his own work on hospital wards and gives the examples of “elaborate and detailed written as well as verbal reports” (ibid.) being used for accountability purposes in this setting.

Based on this discussion, to understand and subsequently unpack the arc of work and the underlying division of labour that permeates it, Strauss advises that researchers should enquire into:

- The actors that participate in the workplace, as well as their roles, responsibilities, and goals;
- The product that is at the heart of the arc of work;
- The discrete segments of the arc, as well as their underlying tasks;
- The articulation work that takes place in coordinating between the various tasks of the arc; and
- The contingent scenarios that emerge in doing the work and how they are addressed.

These are matters that organically appeared and reported in the course of doing fieldwork. Whilst they did not inform *how* the study itself was conducted, they

facilitated in framing the latter contribution of this thesis; design implications (see chapter 8).

2.4 GENERALISABILITY

Another topic that is usually brought up in ethnographic studies revolves around the generalisability of the findings, especially in cases where the ethnographic findings come from only a small number of participants who do not cover diverse demographic categories (e.g. adequate number of participants from different genders, race or national background). This thesis' findings are based on 25 members, who belonged to different organisations and teams. As a result of that, someone might ask on what grounds this thesis makes large-scale claims about the entire community these 25 individuals are members of. Are the provided descriptions capable of reliably explicating members' methods in creating Minecraft content?

Ethnomethodologists have provided a series of counter-arguments to these claims, which point to the generalizable character of members' methods in the particular context that is being studied. Crabtree et al. (2013) argue that even cases of one member accounting for the collaborative work in a setting could potentially be enough in order to develop a rigorous understanding of how members attend to their business and carry out their everyday actions. This is the case due to the inherent social nature of collaborative work in an organisation. The activities that are entailed in collaborative work and how they are tied together, ordered, coordinated and carried out by members is what accounts for the generalisability of the outcome of an ethnographic study, not the amount and diversity of participants.

This was firstly introduced by Sacks, who coined the term "machinery of interaction" (Sacks 1984) in order to refer to the sequential order of interactions humans follow in order to do turn-taking during talk. Sacks suggests that the machinery of interaction involved in talking is "context and cohort independent" (Sacks et al. 1974), which means that it is carried out in the same manner wherever and whenever talk occurs, regardless of who is involved in it. This resonates with Sacks' Membership Categorisation Devices (MCDs), which are, as Crabtree et al. (2013) put it:

“[...] collections of natural language categories such as ‘father’, ‘mother’, ‘baby’, ‘uncle’, ‘grandmother’, etc., which members employ to characterise relationships between people – and tying rules, which provide for our hearing that the categories ‘baby’ and ‘mommy’ are first and second parts of a pair [...]”

These arguments stem from an example Sacks used to demonstrate what people understand when they hear phrases such as “The baby cried. The mommy picked it up” (Sacks 1992a). This phrase has no direct information regarding the relation of the mommy and the baby. Even so when people hear it, they immediately make the connection that the mommy who picked the baby up is the mother of the baby. According to Sacks, this is because members of any setting are capable of pairing distinct categories (e.g. mommy and baby) together through the use of rules that dictate how these categories are related to each other (Sacks 1992b).

Whilst Sacks’ discussion concerned talk, it is not constrained to it; on the contrary, talk was just a means to an end in his studies, as that was the tool he had available at that point in time (Sacks 1984). The use of MCDs and tying rules are constantly at play in everyday life and it is through them that members manage to bring order to their social affairs (Crabtree et al. 2013)⁴.

This discussion is relevant to the dispute between academic reflexivity and endogenous or members’ reflexivity. As discussed above, many scholars assert that academic rigour comes from the ethnographers’ expertise and how they interpret the naturally occurring phenomena in the setting they study (Williams & Irani 2010; Marcus & Fischer 1999; Dourish 2014). Ethnomethodology, on the other hand, respecifies reflexivity as being inherently tied to “the practical organisation of everyday life; a constitutive feature of account-able [sic] action” (Button et al. 2015). Members’ actions and interactions naturally account for what the actors want to achieve and do in a setting. Competent members of the setting are capable of understanding what the observed actions refer to and what

⁴ The application of MCDs in sociological analysis is mostly applied in Conversation Analysis (Sacks et al. 1974). Schegloff provides a tutorial in the use of MCDs (Schegloff 2007), which summarises key aspects of Sacks’ initial conceptualisation of the term.

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is achieved through them. As such, generalisability of findings does not come from the amount of ethnographic data, but rather from accurate descriptions of members' accounts that manage to convey the reflexive character of members' actions and interactions.

It needs to be mentioned that this thesis' findings were presented to and verified by those that participated in it (for more information, see section 3.4).

Chapter 3

3 INTRODUCTION TO THE FIELD SITE

This chapter emphasises a number of key topics that revolve around the study conducted to address this project's research problem. Firstly, a **description of Minecraft** is fleshed out, which covers not only its gameplay affordances but also the details that are intertwined with the market under investigation. Following that, an elaboration of the various practical matters that are pertinent to **the study** is provided, covering: how participants were recruited; the ethical implications of the study; and how the data gathering took place. Lastly, the **key findings** this thesis points to are summarised, as well as the **validation of these findings** by those that participated in the work.

3.1 WHAT IS MINECRAFT?

Minecraft is one of the most successful videogames of all times, with its main gameplay orientation being the creation of in-game content. Thus far, in excess of 120 million copies have been sold across all the platforms on which it is available (including PC, PlayStation, Xbox, iOS, and Android), with 55 million people playing the game at least once a month⁵. The game's developer, Mojang, was acquired for \$2.5 billion by Microsoft in 2014⁶ as a result of its commercial success. While these numbers point to Minecraft's popularity and to its growing player-base, this section's aim is not to provide a historical overview of the game's development, but rather a scenic description of the characteristics that are of relevance to this project's goals and objectives: Minecraft's gameplay modalities and the conditions that occasioned the emergence of the business under investigation.

⁵ <http://www.polygon.com/2017/2/27/14755644/minecraft-sales-122m-copies>

⁶ <http://www.polygon.com/2014/11/6/7167349/microsoft-owns-minecraft-mojang-acquisition-closes>

3.1.1 Minecraft as a game

Belonging to the category of sandbox games, Minecraft provides a level of freedom that was unparalleled when it first came out (May 2009) and still remains a popular sensation amongst both young and adult players, as exhibited through its sales. The original version of the game (the one that is sold by Microsoft and which is referred to as “vanilla Minecraft” by the members) offers two distinct modes of play: the survival and the creative mode. Whilst both of them introduce players to an empty, and practically limitless world, the rules of the game differ between these two. In survival mode, many gameplay restraints are imposed on the players, such as the inability to fly, the limited resources in terms of building in-game content and the existence of enemies that emerge during the night and hunt the players. Without having any direct goals, players are invited to explore the world, come up with their own tasks, create a shelter to protect themselves during the night and gradually expand their habitat. This usually involves mining the game world to acquire materials, which can then be used for crafting in-game content (e.g. tools, weapons, furniture, food, etc.). The creative mode, on the other hand, revolves around the notion of offering limitless capabilities to the players in terms of building content. As such, builders have access to an infinite pool of materials, which reduces the act of mining to that of valuelessness. Along the same lines, there are no night-dwelling monsters so that the builders can solely focus on doing their work in-game and come up with the creations they strive for.

These two modalities of play set the stage for all the possible experiences the game can support. However, one of the most significant aspects of this thesis is the way in which the game also provides the means to be adapted and appropriated in order to offer new play experiences, as discussed in the following section (Minecraft as a platform).

3.1.2 Minecraft as a platform

Probably the most popular characteristic of the game is its openness to be modified and offer new and unique gaming experiences. This can be accomplished through the modification of the original version of the game, a predominant practice in the Minecraft community ultimately received unofficial

support from Mojang itself⁷. Whilst this has been a well-established activity in the overall gaming industry (which is colloquially known as “modding” – (Postigo 2003)), what is so interesting about its emergence in the context of Minecraft is that it became one of the core matters of Minecraft’s community (Christiansen 2014).

These new gameplay experiences come in the form of discrete tools and games that are run inside the game. Essentially, these modifications constitute new games (which members refer to as “mini-games”) that have rules and mechanics that differ from those provided by vanilla Minecraft. These mini-games can be employed either “locally” (on the computer of those that create them) or on servers that specialise in running modified versions of the game. Currently, there are numerous Minecraft servers online that are visited by a huge number of players on a daily basis in order to play the unique mini-games offered by them. The owners of these servers are one of the main actors in Minecraft’s commissioning market, the role and the significance of which is gradually uncovered in the following chapters of this thesis (see chapters 4, 5, and 6).

*Max*⁸: “I’d almost say servers are the backbone of Minecraft. If you didn’t have Minecraft servers, you wouldn’t have Minecraft.” [Interview material: participant was elaborating on the structure of the commissioning market and the significance of Minecraft servers.]⁹

3.2 THE STUDY

This research project consisted of longitudinal fieldwork, spanning 24 months (August 2014 – August 2016). Overall, 18 in-game sessions (approximately 18 hours) were attended, during which 12 members of the creative community were observed creating content in real-time and playing the game. Additionally, 17 of those that participated in the study were informally interviewed (approximately 15 hours) on topics related to their work and how it is organised across the various building teams they were involved in. Moreover, a number

⁷ <https://help.mojang.com/customer/en/portal/articles/979212-minecraft-mods>

⁸ As discussed under “Ethics,” these are pseudonyms given to participants.

⁹ Clarification on the context will only be provided when it is not available in the preceding or succeeding text.

of activities were performed in order to develop vulgar competence in the setting and become familiar with the work of building in-game content. Some of these activities involved playing the game, visiting online fora where builders advertise their work, following various members of the community on Twitter, as well as attending a training session with one of the participants.

The following sections expand on these matters by shedding light on the participant recruitment strategy, ethics dilemmas of the study, and data collection.

3.2.1 Recruitment strategy

This process involved visiting the most popular Minecraft fora: Planet Minecraft (PMC)¹⁰, SpigotMC (SMC)¹¹, Minecraft's official forum¹², and various other web-sites that are either directly related to Minecraft or simply cover videogames news and occasionally advertise Minecraft creations¹³. Minecraft players were approached either by sending private messages to over 20 members whose creations were of high-quality and received a lot of endorsements and positive comments by other forum members or by creating dedicated threads in said fora (especially PMC), where the purpose of this study and its expected outcomes were explained (see section 3.2.2). The immediate aim of this approach was the formation of a network of informants (either professionals or leisure builders), who would be willing to participate in this research and share their insight regarding the creation and the commission of in-game content.

In total, 25 members were recruited for this project, who had diverse roles in the commissioning market and belonged to 12 different groups (building teams, unions or servers, see section 3.3.2).

3.2.2 Ethics

To avoid any ethical implications with regard to the study and the use of the gathered material, an ethics application was approved by the University of Nottingham, School of Computer Science Ethics Committee. Part of the ethics

¹⁰ <https://www.planetminecraft.com/>

¹¹ <https://www.spigotmc.org/>

¹² <http://www.minecraftforum.net/>

¹³ <http://www.kotaku.co.uk/>

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application procedure entailed the submission of the information sheet (see Appendix A: Information sheet) and the consent form (see Appendix B: Consent form) that would be circulated to the participants.

The information sheet, which included all the relevant study details such as the goals of the research and what was expected of the participants, was attached to all the forum threads and all the messages that were sent to participants. Before data collection, participants were briefed regarding: (1) the purpose of the research; (2) the way the accumulated data would be used and analysed; (3) their rights to withdraw consent at any given time (which would result in the deletion of their data); and (4) they were encouraged to ask questions regarding the study. Before initiating any interviews or observational sessions, participants were asked to give their consent on recording the session, and it was made clear that all sensitive data (their names, the teams they were associated with, the names of their clients or anything else they deemed confidential) would be anonymised. Consent was acquired by any of the following means: by text (through Skype messages), verbally (during the actual interview) or by filling the relevant consent form. All participants were above 16 years old, which is in accordance with the University of Nottingham's Code of Research Conduct and Research Ethics (article 15.4)¹⁴. All data was securely stored on the University computer that was used for the purposes of this project and was shared solely amongst the researchers involved in it. In case of publications, the anonymisation tactics described above were followed, by assigning identifiers to the informants quoted in the papers. In a similar manner, all names in this thesis are pseudonyms and bear no resemblance to their real-world counterparts.

Quoting participants is done in two ways: in-line quotations and individualised quotations. In-line quotations are *“italicised, followed by the participant's pseudo-name, emboldened out and in brackets”* (**Participant**). All in-line quotations come from interviews, Skype logs, or conversations with the participants during observations. Similarly, all vignettes come from observations.

¹⁴ <https://www.nottingham.ac.uk/economics/documents/research/ethics-research-conduct.pdf>

Participant: “*Individual quotations are put in a block of text such as this, preceded by the participant’s pseudo-name in bold.*” [Interview or observation material: text in brackets explains the context of the quotation.]

Whilst participants gladly shared information about their work, many of them were reluctant to convey details regarding specific matters, especially about: their clients; the money that was involved in the business; and the financial transactions that took place between them and their co-workers. On top of that, confidentiality agreements were occasionally signed between the involved parties, which constrained the information participants could practically disclose. In these cases, only references or descriptions of these transactions are provided, without attaching any of the confidential material in the analysis.

3.2.3 Data gathering

This section elaborates on the activities that were carried out with respect to gathering the fieldwork material, as well as the types and the quantities of said material. On top of that, the section expands upon the ways in which the researcher’s competence in understanding the setting was developed.

3.2.3.1 Data gathering activities

As mentioned above, 25 members of Minecraft’s creative community were recruited during the course of the fieldwork. It is crucial to point out that these members were from across the spectrum of the different roles in the commissioning market (see section 3.3.2). 12 members were observed in-game: 4 of them merely playing the game, and 8 of them doing the work of constructing in-game content as part of working on commissioned projects.

17 of the members were interviewed in matters related to:

- How the game is played;
- How they do their work;
- The resources they use;
- How they coordinate tasks in terms of collaboration;
- The people they work for;
- Their role in the commissioning market.

Communicating with participants was achieved via the use of Skype. Also, a screen capturing software¹⁵ was employed for recording audio-visual data. In the one instance where an on-site visit took place (in the form of visiting one participant's home), a video camera was used for recording the participant working on their project.

3.2.3.2 *Data types*

The overall corpus of the gathered data constitutes of a combination of:

- **Audio recordings (interviews)** (approximately 15 hours);
- **Video recordings (observations)** (approximately 18 hours);
- **Field notes** of what was discussed and done by the members;
- **Skype logs** of the transactions between clients and contractors (see section 3.3.2);
- **Referential materials** (members' term), which are resources (pictures, sketches, photographs, etc.) that members use for inspirational purposes;
- **Online material** that members use for disseminating their work, promoting themselves, and networking with each other.

The latter two types of resources constitute valuable material for this fieldwork as they are cornerstones for the activities undertaken by members in multiple segments within the *arc of work* (as will be revealed in the following chapters). Access to this material was granted not only when participants were asked to do so, but also voluntarily while they themselves were explicating the details of their work.

It needs to be mentioned that throughout the 3 findings chapters (4, 5, and 6) there are multiple references to this thesis' 'hard data.' In general, in-line or individualised quotations come from interviews or informal enquiries during observations. The same applies for the various vignettes that can be found in these chapters, which are presented by using a different format (for an example, see Vignette 1 on page 55). The reason behind this stylistic decision was the

¹⁵ ShadowPlay, developed and owned by NVIDIA: <http://www.geforce.com/geforce-experience/shadowplay>

importance of presenting the sequential ordering of the interactions between the various interlocutors involved in each vignette.

3.2.3.3 Fieldwork activities to understand the setting

Whilst the above constitutes only the ‘hard’ data for this thesis, it does not directly correspond to the actual time spent in the field in order to develop vulgar competence. This competence was the culmination of a number of activities, namely: playing the game; visiting online sources; and learning how to build structures in the game. The combination of all of these activities was a tremendous asset and provided the analytic lens necessary to make use of the fieldwork material gathered, and avoiding assumptions during the analysis, or re-interpretations of members’ work.

Playing the game: A week was spent playing the game in its survival mode (see section 3.1) and becoming familiar with its rules and its goals. This was essential for comprehending key aspects involved in doing in-game creative work, especially the necessary mechanical actions for moving around the game world, placing and destroying blocks, and interacting with other builders.

Visiting online sources: In addition to that, a daily routine of following Minecraft professionals on various websites was established, such as:

- **Twitter**, which was one of the most prominent means members used for giving updates on their work. These updates came in different forms, such as: pictures of finished projects; exhibits of work-in-progress builds; referential material that inspired their creativity; and even news regarding the game’s official updates;
- **Minecraft fora** for checking on the promotional material posted by various professionals;
- **An online Minecraft convention** was also attended (CubedCon¹⁶), which was a venue where professional builders and teams could advertise their work and promote themselves in their dedicated digital booths, housed inside a Minecraft world.

¹⁶ <http://cubedcon.com/>

These activities facilitated being constantly up-to-date with regard to the most recent developments in the commissioning market.

Learning how to build: A one-to-one building tutorial was undertaken (lasted approximately 2 hours), which was given by one of the builders that participated in this research project. This was occasioned as a result of a suggestion made by the builder himself through researcher-instigated enquiries of the mechanical actions he was performing towards building in-game content. The proposition to participate in a building allowed for the revelation of the precise ways in which tools and resources are practically and methodically selected and used in construction.

Attending this tutorial resulted not only in understanding aspects *of* the work as it is carried out by others but mainly in comprehending the actual *lived-in* characteristics that are entailed in *doing* building, shedding light to the reasoning behind the subtle in-game actions that were performed by the members. The tutorial was an *in situ* simulation of how a commission is done, encompassing various aspects such as: conceptualising the build; capturing and using referential materials; planning the in-game reconstruction of these materials; and finally building content. An active role was adopted during this tutorial, by engaging as if a member in the process of doing the task, and providing an in-depth insight into the methods members employ in and through building.

3.3 OVERVIEW OF FIELDWORK FINDINGS

This section presents the segments of the arc of work that was revealed through the fieldwork. First, a description of the product is provided, followed by an elaboration on the discrete roles the involved individuals have while commissioning and creating Minecraft content. Finally, a brief elaboration of the arc is provided, with the aim of sensitising the reader to the main practices that partake in commissioning.

3.3.1 The product

There are two distinct product categories: the *Minecraft map* and the *schematics*. Although this thesis mainly focuses on how the production of the

former is commissioned, carried out, and delivered to the corresponding individuals (clients), the schematics serve a significant role in the Minecraft commissioning market, and so will be discussed.

3.3.1.1 *Minecraft Map*

To use members' terminology, everything that builders create for in-game purposes is referred to as "a build" or "a Minecraft map." As is the case with all digital games, Minecraft needs to have an in-game digital world that is going to be inhabited by the players and provide the space for in-game interactions. As such, a Minecraft map is the digital world where players meet, interact, and play. Minecraft itself provides built-in methods that automatically generate game worlds. However, the result is usually rather flat (Figure 1) and needs to be manipulated to a great extent in order to meet the demands of the mini-games that are run on private servers. This occasions the commission of these maps to the individuals that specialise in making in-game content.



Figure 1 A generic map created by the built-in map generator

The map presented in the image above could perfectly well serve the goals of playing the survival mode of vanilla Minecraft. However, as privately-owned Minecraft servers offer a variety of mini-games that change how the game is played, specialised maps that are capable of accommodating new gameplay styles need to be used. The demand for such specialised maps (Figure 2) led to the emergence of the commissioning market.



Figure 2 An example of a commissioned map, which constitutes of 8 distinct builds

This particular map is a “hub” of an entire server, which means that when players log in this server, their avatars will “spawn” (videogames jargon, referring to the act of appearing in a particular spot on the map) at the conjunction point of the 8 roads that are depicted in the image above. These roads lead to portals that, upon walking through them, take the players to dedicated mini-games.

Even though the work of building is analysed in the chapters that follow (see chapter 5), it needs to be pointed out that the product under commission can be anything that is part of an overall structure. The hub presented above is comprised of at least 8 sub-products (the areas around the portals), without taking into consideration the eight distinct mini-games, which demand 8 distinctly made Minecraft maps.

Two important details that are related to this matter are the legal implications involved in having maps as the main product that is exchanged inside the commissioning market, as well as the availability of these maps. Minecraft’s End-User-License-Agreement (EULA)¹⁷ specifically states that players are not allowed to “*distribute anything we [Mojang] have made,*” which encapsulates not only distribution of game copies but also commercialising assets that belong to the company (such as game code). This makes the commodification of the maps themselves impossible as it would directly violate the EULA. The nature

¹⁷ https://account.mojang.com/documents/minecraft_eula

of the commodity and its implications in the community are further discussed in the discussion chapter of this thesis (see chapter 7).

Regarding the availability of these maps, by nature, they are not singular items since there can easily be limitless copies of them. However, due to trust being a very important aspect in the community, creators of said maps are not distributing or commercialising builds that they have already been paid for; upon delivering them to the intended client, they work on new builds, even if they are of the same type (such as hubs).

Josh: “It’s a lot about trust in the community. The customers are going to trust me to not send it to anyone else.” [Interview material: the participant was explaining how trust is an integral part in this community and why the same build is not re-used or re-sold by the builders.]

These examples function only as a way of conveying to the reader what the product being commissioned could be, as there are many more types of in-game content. When referring to the product, the types mentioned here (Minecraft map, spawns, hubs, builds, etc.) will be used interchangeably, as they all point to the same thing: something that is made by professional builders for in-game use by the client(s).

3.3.1.2 Schematics

This is an unofficial file type that was developed by members of the community and is used as a means of sharing or even selling Minecraft maps. Essentially, any Minecraft map can be exported from the game into a distinct schematics file, which contains the position of all the blocks that comprise the map. Due to the fact that schematics are a community designed and managed product that holds no information of Mojang’s intellectual property (the game’s code), having a monetary gain by selling them does not violate the game’s EULA.

Schematics might be used for delivering a product to the client. However, there are instances of schematics being sold on various online websites. In this case, however, their prices are significantly lower, as they do not constitute singular

items that are the outcome of the collaboration between clients, contractors and builders.

3.3.2 The actors

This section introduces the four main actor types that participate in Minecraft's commissioning market: the clients, the contractors, the builders and the intermediaries that facilitate the monetary transactions between the former two. The purpose of this introduction is simply to familiarise readers with the presence and the roles of these actors; their exact characteristics, responsibilities, goals, and interdependencies between each other will become clear as the fieldwork material is gradually unpacked in later chapters.

3.3.2.1 Clients

Although anyone that is interested in paying for the acquisition of a Minecraft map could be considered a client, the ones that own and run the servers that accommodate mini-games (as discussed above) are the most prominent ones in the context of Minecraft's commissioning market. This is the case due to the interdependence between their business (running Minecraft servers that offer unique gameplay experience to the players) and the professional builders' need to have access to paid building jobs.

Server owners profit via a number of different routes, with subscriptions to their servers and selling in-game cosmetic items (which do not affect gameplay) being the predominant ones. This is a competitive market with more and more servers emerging with the passing of time, their success depends on: (1) offering a variety of fun mini-games; (2) having aesthetically-pleasing maps to accommodate these mini-games. This is where they come into play in Minecraft's commissioning market, as they are the ones who provide paid work for the creation of the maps. The fieldwork conducted revealed that a number of companies are also interested in this business, by commissioning the creation of maps mainly for advertising purposes.

To accredit members' knowledge, server owners might simply be referred to as "servers," as this was the commonest term used by the participants of this research project.

3.3.2.2 Contractors

This is used as an umbrella term to refer to those that receive commissioned work from clients and subsequently delegate it to those (the builders) that carry out the work of constructing the map. During the unpacking of the fieldwork material, it will become evident that there are a number of different types of contractors (namely: freelancers, team leaders, and union members), who have discrete responsibilities and roles in the market. Whilst their characteristics will become available as the data analysis progresses, it needs to be pointed out that these sub-roles are highly correlated with each other. It is highly likely, for instance, for a team leader to be working freelance too (which means that contractors can work on the jobs they receive from the clients – effectively becoming builders too), but also being a member of a union. Having said that, many members had discrete positions in the market, without crossing the self-defined barriers that demarcated each role.

3.3.2.3 Builders

This is the most general category of actor in the community, as anyone who can work on any type of project is a builder. The only characteristic that distinguishes a builder from other actors in the commissioning business is that they get the practical work of building done. As such, the contractors themselves can take up the role of the builder and instead of assigning the job to someone else, they do it themselves.

As will become evident in the analysis of the job of *crafting*, builders might have different skillsets and expertise. For instance, there are builders who are experts in creating terrain and landscapes by utilising third-party software tools (a skill that is commonly known as “terraforming”). These skillsets come into play in various stages of the overall arc of work of commissioning and creating, such as when building tasks need to be assigned to team members (see section 4.3) or during the crafting process itself (see chapter 5).

3.3.2.4 Intermediaries

The last type of actors are the ones that facilitate the payment procedure that takes place between contractors and clients (see section 6.1). Essentially, intermediaries are companies, which assure that the money for a commission

will be transferred securely from the client's bank account to the contractor's. As will become evident in the subsequent chapters, their role in the community becomes necessary due to the emergence of a number of malicious practices that result in the involved parties not receiving the money they worked for or the products they paid for.

3.3.3 The arc of work

Commissioning and creating a Minecraft map turns upon six distinct practices, each of which stands for one of the segments of the arc of work. Table 1 is a representation of the sequential ordering of these practices (horizontal axis), accompanied by the activities that comprise each one of them (vertical axis). Essentially, *what* members do in the doing of producing a map is placed on the horizontal axis, while the "*hows*" of each practice lie on the corresponding vertical axis. The practices themselves are grouped into three categories: those that take place *before building*; the actual job of *crafting* in-game content; and finally, those that happen *after building*.

The following sections briefly elaborate on each of the segments. This is meant to be an introduction to the findings, with more extensive unpacking being provided in the chapters to come¹⁸.

¹⁸ This comes from the appropriation of already published material. For more information, see: (Koutsouras et al. 2017)

Table 1 The arc of work of creating a Minecraft map

Before building				After building	
Conceptualising the product	Contracting	Delegating building tasks	Crafting content	Delivering the product	Distributing money
Reasons for commissioning a new build	Finding a contractor	Scheduling	Envisioning	Processing final payment	Covering fixed costs
Determining what to commission	Determining commission details	Assigning task(s) to builder(s)	Terraforming	Finalising delivery	Paying involved builders
	Sealing the contract	Sharing the commission	Preparing for in-game building	Evaluating transaction	
		Subcontracting	Building	Updating promotional material(s)	
			Reviewing		

3.3.3.1 Conceptualising the product

This is the first practice that is attended to for the commission of a Minecraft map. The ones that carry it out are the clients (mainly, server owners), who determine what the commissioned product needs to be. Whilst this concept constitutes a resource that informs contracting (the subsequent practice in the arc of work), it is not a conclusive piece that contractors have to follow. The exact details of the commission are only solidified through the collaborative effort of both contractors and clients (as discussed in the next section).

3.3.3.2 Contracting

Once an initial product concept is established, clients approach contractors in order to discuss the details of commissioning the creation of the conceptualised build. The outcomes of this collaborative effort are: (1) the identification of the exact details of the build, and (2) the allocation of the commission to the contractor.

Performing these two activities leads to the establishment of trust between the two parties involved and the contract is sealed. This occasions the assignment of the commission to the prospective builder(s).

3.3.3.3 Delegating tasks

When the contractors have managed to successfully gather all the relevant details for the commission and seal the contract with the clients, they need to find the appropriate builder(s) to assign the building tasks to. Therefore, assigning tasks is a practice that takes place between contractors and builders. Unpacking this practice reveals the existence of different types of contractors, whose roles will become clearer in the relevant chapter (see next chapter).

3.3.3.4 Crafting content

This is the cornerstone practice in the arc of work, the outcome of which is the Minecraft map that was commissioned by the clients. The actors that are mostly involved in it are the builders, who have already acquired all the relevant details of the commission. The activities that are entailed in accomplishing crafting are: planning; terraforming; preparing for in-game building; building; and finally reviewing. Occasionally, contractors and clients participate in the latter activity,

as they have to provide their feedback as to whether the commission's requirements are indeed met.

Depending on the size of the build, there can be many reviewing cycles. When the last of those cycles is concluded and the client is satisfied with the end result, the activity of delivering the product is initiated.

3.3.3.5 Delivering the product

The builder's last responsibility is to hand the map to the contractor by exporting it from the game and saving it as a digital file. This file is then relayed to the client, only when a couple of safety measures are taken: sorting out the payment; and evaluating the transaction. Lastly, contractors update their social profiles with the new builds they delivered to their clients in an attempt to further their visibility in the community.

3.3.3.6 Distributing money

At this point in the arc of work, any exchange with the client has been completed and what remains is for all the parties who had a role to play in content creation to acquire their share of the payment. Furthermore, contractors might update their social network profiles with representative material of the commissioned project(s). Distributing the money depends on the type of contractor and how the assigning of tasks took place.

3.4 VALIDATION OF THE FINDINGS

Affirmation of the presented findings came from the members themselves in a number of ways. First and foremost, a video recording of a public talk¹⁹ that was given as part of this research project was shared with them via Skype. The topic of this talk was to present the main characteristics of the commissioning market (namely: the stakeholders involved in it, the structure of the market, as well as details with regard to how building is done). Participants' feedback was very positive, validating the representation of the community they are members of. Besides the public engagement, other types of materials were occasionally shared with them, such as papers that were submitted to conferences or diagrams

¹⁹ https://www.youtube.com/watch?v=3-piC0yCI_k&index=1&list=PLGwKV5HeIABDVII-5ULN59a0nTC0meons

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of the arc of work. Finally, casually chatting with them about matters regarding their work was a constant reminder of how they do things, which, as previously mentioned, helped in avoiding making assumptions regarding their work.

Chapter 4

4 BEFORE BUILDING

This chapter presents the first three activities that are entailed in producing a Minecraft map. First, a description of *conceptualising the product* is provided, the accomplishment of which is the establishment of an initial set of specifications for the product (the Minecraft map). This occasions *contracting*; the practice of finding contractors that are capable of undertaking the commission and delivering the final build back to the client. This tripartite ends with *delegating tasks* which results in the delegation of the building tasks to those that specialise in *building*.

The analysis is sequentially organised by presenting each of the practices (and their underlying activities) in a sequential manner (as depicted in the diagram of the arc of work – Table 1). However, it will become evident that contingent scenarios occasion alternative courses of action that might break the sequence.

The material presented in this chapter comes mainly from informal interviews conducted with clients, contractors and builders, observations made while visiting Minecraft for, as well as resources participants shared via Skype. Members were also asked to elaborate on specific matters related to their work while the analysis of the accumulated data was carried out.

4.1 CONCEPTUALISING THE PRODUCT

Conceptualising the product constitutes the very first practice in the arc of work and is solely conducted by the clients. What is accomplished through this practice is the development of a concept idea that reflects what the clients want their commissioned product to be. The details pinpointed during this phase range from the build's functional characteristics (elements that relate to the gameplay affordances the build has to accommodate) to its aesthetic and stylistic aspects (how the build should look).

This section elaborates *what occasions a new build*, followed by a description of *determining what to commission*.

4.1.1 Reasons for commissioning a new build

As previously discussed (see section 3.3.2) server owners are the main type of clients in this market, and their business revolves around the model of providing unique mini-games to Minecraft players through their servers. For them, financial revenue comes either from subscriptions to their servers, which grant players access to mini-games or through micro-transactions for the acquisition of in-game items. In any of these cases, they have to have beautifully-crafted builds for populating the worlds the mini-games run in.

The reasons that occasion the commission of a new build depend on the business the clients run and can roughly be categorised as such:

- The emergence of a new server;
- Content updates;
- Advertising.

4.1.1.1 A new server or a new mini-game

With the creation of a new Minecraft server (or new mini-games within an existing server), clients need to make sure that a number of maps will be incorporated into it. Some of these maps (such as lobbies, spawns and hubs) are necessary for the proper functioning of the server, as they constitute the main areas where players find themselves in when logging on to the server. On the other hand, maps such as “functions” or “hunger games” are dependent on the particular mini-games they accommodate, which means that they are only commissioned when the relevant game is supported by the server.

4.1.1.2 Content updates

It is possible for clients to update the content of their servers on a regular basis. This might include either the introduction of new mini-games or changing the aesthetics of existing ones. The reason for doing so is to constantly provide the players with new gameplay experiences, either in the form of new aesthetics for existing mini-games or with completely new mini-games. This action results in

maintaining the players' interest and make them want to come back to the server.

Jill: "Each month we get given a certain amount of maps that we are asked to make. For example, we'll be asked to make, say, 4 maps of one game mode, 2 maps of another and then 3 maps of an extra one somewhere." [Interview material: The participant, who was a builder, was describing when and how her team was receiving building tasks.]

4.1.1.3 Advertising through Minecraft maps

Another strand of business that is related to Minecraft is that of corporate environments and organisations that use it as a platform for advertising their products. An example that came up during the conducted fieldwork was that of a well-esteemed company in the entertainment industry, which was about to release a new film, the main audience of which were kids. Given Minecraft's popularity on that age group, it was considered the right venue for advertising their movie. As such, they commissioned the creation of a Minecraft world that resembled their film and paid a well-known YouTuber for playing a few hours on that Minecraft world. Eventually, the live broadcast of that YouTuber's gameplay in that Minecraft world resulted in gathering half a million views on one single day, which acted as an advertisement for their new film.

4.1.2 Determining what to commission

Once the clients have established the need to commission a new Minecraft build, they have to determine the build's initial characteristics, which range from its *functional* to its *aesthetic details*. Determining said details draws upon both textual descriptions, as well as the inclusion of *referential materials* in the product concept, as discussed below.

It needs to be pointed out that these constitute only approximations of the build's final specifications, which are solidified during *contracting* (see section 4.2).

4.1.2.1 Determining functional characteristics

Much like functional requirements in software engineering, these characteristics stand for the exact functions the commissioned map should have. Given that

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these maps demarcate the digital space in which players interact with each other and play, their functional characteristics define the affordances of the mini-game they are situated in and what players can actually do. An example of these characteristics, as identified by a client, is presented in Figure 3.

CREATIVE SERVER

Plot worlds: Small world 35x35 plots, road width 5, plot border width 1
Medium world 101x101 plots, road width 5, plot border width 1
Large world 251x251 plots, road width 5, plot border width 1
Contest world 51x51 plots, will be reset monthly, roads as other plot worlds
Plot border of stone slab
Build team worlds I can set up myself since they won't have plots or anything

Figure 3 Snapshot of a product concept document

This example corresponds to a very particular type of “creative server,” the purpose of which is to offer to its prospective players the ability to create in-game content inside pre-designated empty spaces called “plots” (Figure 4). Based on what is exhibited in Figure 3, the build under commission should have:

- 4 different worlds, each of which would accommodate players with different levels of experience in building in-game content;
- Differently-sized plots in each of these worlds (sizes measured in Minecraft blocks, e.g. 35x35 blocks);
- Borders of 1 block width in-between each plot;
- A monthly reset of one particular world (contest world).



Figure 4 Example of a creative world (with both empty and populated plots)

Whilst this example reveals a number of functional characteristics that come into play when commissioning a creative server, they do not cover the entire spectrum of characteristics other server types might demand, such as the overall size of the build and the inclusion of specialised in-game areas where players would be able to craft and store items.

4.1.2.2 Determining aesthetic characteristics

This set of requirements are related only to how the commissioned map should look and have no relevance to how it functions. They usually include:

- The materials the build should constitute of;
- The colours that should be integrated into the build;
- Decorative elements, such as trees;
- The predominant theme of the build (medieval, futuristic, modern, etc.).

Clients attend to pinning down these details in order to have maps that meet their stylistic preferences. On top of that, it is common to run servers with a specific aesthetic theme (such as medieval). In order to maintain the uniformity between the mini-games that are available on their servers or to provide to their players maps with specific aesthetic details, they include such information in the product concept.

Even though Figure 3 is mainly comprised of functional details, there is a reference to an aesthetic one too: that of using stone slabs as the preferred material in creating the borders that demarcate each building plot.

4.1.2.3 Referential materials

Textual descriptions of the build's characteristics (either functional or aesthetic) are supplemented by the inclusion of visual assets, which represent what the clients want the final build to be like. These assets, which members refer to as "referential materials," can either be *pictures of other builds* or *build prototypes* that the clients themselves have created and attached in their product concept.

Pictures of builds. These are snapshots of builds that either belong to the clients themselves or other members of Minecraft's creative community. When it comes to the latter case, clients visit the various Minecraft fora members use for

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disseminating their work, in order to search for builds that they like and could potentially resemble what they have in mind in terms of the build under commission.

An example that was part of a product concept members shared during the conducted fieldwork is presented in the following figure (Figure 5). In this particular case, the commission included the creation of labels that would be placed on top of specific in-game areas. By sharing this picture, the client conveyed to those that would realise the commission his preferences in terms of lettering's aesthetics.



Figure 5 Example of a referential material that depicts a font

Another example of a reference to a build is depicted on (Figure 6). What is of interest, in this case, is the fact that the client annotated specific areas (red rectangular shapes) as potential spots for the creation of plots, which was part of this particular commission.



Figure 6 Example of referential material which was annotated by the client to showcase points of interest to the contractor

Build prototypes: These are actual in-game materials that clients themselves prepare and share with those that are going to work on the commission. Given that they are in-game assets (Figure 7), builders can work directly on them, by appropriating them, expanding them and adapting them (see chapter 5) in the final build.



Figure 7 Example of a high-fidelity prototype, created by a client in order to become the basis of a commissioned build

Tien: “I made this hill using World Edit and then I sent it to the builder and the builder then made that a larger hill and he made more than just one section of the hill.” [Interview material: The participant, who was a client, was explaining how he might share a build he owns with the builders so that they can expand on it as part of a new commission.]

The above examples make it evident that referential materials supplement not only the aesthetic details of a build, but also its functional characteristics. The inclusion of the sketch (Figure 6) in particular works in tandem with the functional requirement to include a number of plots in the commissioned Minecraft world, as the client points to areas that are considered to be appropriate for the inclusion of said plots.

4.1.3 Recapping conceptualising

By conceptualising the product, clients achieve pinning down the main characteristics of the product they want to commission, which include:

1. The build’s type;

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2. The build's functional characteristics (size, number and types of in-game areas, and various other details that depend on the server's mini-games);
3. The build's aesthetic characteristics.

In articulating these characteristics, both textual (descriptions) and visual (referential materials) resources are used, which supplement each other (see: Figure 3 and Figure 5). Textual resources usually describe the build's functional characteristics, while visual assets point out its aesthetic aspects. Along these lines, clients might also include actual builds they already own in their concepts in order to convey to contractors and builders the exact characteristics they want the commissioned project to have (e.g. the types of blocks and the colour palette).

It should be recognised that the description presented here is a little thin. That is because it is based on the interviews as well as product concept documents that were shared by clients, instead of direct observations of the latter conceptualising the product. However, it was reported by many contractors that product concepts are thin by nature, as clients themselves usually have a very vague idea of what should be created and it falls to them (contractors) to actually tease out the exact functional and aesthetic characteristics of the commission. This is something that is unpacked in the following section (see next section).

Steve: "It's very rare that the client will come to you and say: this is exactly what I want. It's pretty simple: they are coming to you, because you are the creative mind." [Interview material: The participant, who was a contractor, was discussing clients' overall understanding of what details are of importance while commissioning a new build.]

4.2 CONTRACTING

This practice constitutes the second step in the overall arc of work of commissioning a Minecraft build and takes place mainly between the clients

and the contractors²⁰. However, the intermediaries who facilitate the transactional exchanges between the former two might also come into play, if a down-payment is requested by contractors as part of *sealing the contract*. The outcome of this practice is the establishment of the exact specifications of the build under commission, which are then used by the builders during crafting.

Accomplishing this practice turns upon: *finding a contractor*, *determining commission details*, and *sealing the contract*.

4.2.1 Finding a contractor

By having the concept for the build already available, clients attend to finding a contractor that can cover the demands of the project under commission. Upon successfully completing this activity, clients end up with a number of potential contractors for commissioning the project to. The two steps involved in carrying out this activity are: *scouting for contractors* and *establishing communication* with them.

It needs to be pointed out that many clients have an established list of contractors they collaborate with every time they want to commission a new build. In this case, there is no need to go through this activity, as they already have access to the resources they need (contractors and established means of communication) in order to reach their goals (commissioning a map).

Georg: “If one of my old clients needs something, they can just pop me a message and I will be able to see it instantly and reply to it as soon as possible which means that you skip the step of requiring you to be found, because you are already found and they already know how to contact you.”

[Observation material: The participant, who was a builder, elaborated on the ways in which he receives new commissions by clients. This discussion took place during a building session, where the topic of *finding a contractor* was

²⁰ The reader needs to be reminded of the possibility that the roles of the contractors and builder might be undertaken by the same individual. Here, for clarity and to better describe the ways in which contracting unfolds, contractors are mostly treated as being a completely separate actor to the builders.

brought up while the builder was expanding on the reasoning behind his building practices.]

4.2.1.1 Scouting for contractors

Scouting for contractors is accomplished by visiting Minecraft fora that contractors themselves use for promotional purposes, such as SMC and PMC. Clients choose which contractors to get in contact with based on: *the feedback the latter have received from previous clients; their portfolio; and time constraints* regarding the delivery of the final build.

Choosing contractors based on feedback. A common practice amongst members of the creative community was acknowledging each other's work and trustworthiness through "**vouching**:" satisfied clients will leave a comment on the contractor's personal forum thread in order to express their gratitude for receiving high quality products²¹. Bearing this in mind, clients go through the comments the contractors they are interested in received in the past and check whether they have received "vouches." If so, they decide on whether they are going to contact them or not, in order to discuss things further regarding the commissioning of the build (see section 4.2.2).

Furthermore, by checking those comments, they can verify the contractors' legitimacy with regard to the attached portfolio. In their opening post, the contractors include examples of their own work (or the builders' work they are associated with) in an effort to provide an indication of their skills, what they have produced in the past and what their clients can expect of them. There is always the possibility though that the contractors are showcasing work that belongs to others, which falls under the general practice of scamming²². Such malicious practices are mentioned in the comments left by members of the community, which is why clients consult them as a method of narrowing down the list of good builders before establishing communication with them.

²¹ "Vouching" is members' term.

²² One common form of scamming is by accessing a Minecraft world and downloading it by using World Downloader: a Minecraft modification (mod) that allows its users to download the maps they are logged in to. By doing that, these users can acquire a copy of that map, store it locally in their computers and use it in any way they see fit. It is a software tool that is used quite frequently by scammers, see chapter 5.

Choosing contractors based on portfolio. Clients also search for contractors based on exhibited examples of their work, as found in fora and websites. The contractors whose work meets their needs (in terms of build types, aesthetical quality and overall skill) will be shortlisted prior to being contacted by the clients.

Tien: “I just look if the build is nice. I would then filter out the bad builders and leave the good builders by looking at their comments, or their vouchers, and the portfolio of their skill.” [Interview material: The participant, who was a client, was explaining his reasoning behind choosing which contractor to contact in order to commission a new build.]

Choosing contractors based on time availability. Time constraints also affect the method of scouting that is adopted by the clients. A specific client reported that due to the fact that he needed a build as fast as possible, he contacted the “*top 6 most commented [contractors]*” (**Nick**), skipping the aforementioned procedure of checking the feedback and the overall skill of the contractor.

4.2.1.2 Establishing communication

Having found potential contractors for doing the job, clients proceed to establishing communication with them in order to discuss in further detail the matters related to the commission itself. The sequence of steps involved in doing so is: *proposing commissioned work*; and *contacting*.

Proposing commissioned work on fora. The proposition of commissioned work turns upon the written conversation that takes place in the Internet fora members use for promoting their work and networking. During these conversations, both parties mention matters that are of mutual interest. Clients’ first message (which is what initiates the conversation and makes the clients’ interest in commissioning a build available to the contractors) may state “*what I am looking for and the price that I am willing to pay for it*” (**Tien**), as well as various functional and aesthetic details. These are actionable details that help the contractors in: (1) forming an initial understanding of what they are asked to create (which type of build the client is interested in); (2) how much time it is going to take them to build and deliver it (the size of the build); (3) whether

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the client is willing to pay the amount of money they usually charge for similar builds (the price); and (4) clients make their availability on moving forward with the commission known to the contractors by “*say[ing] something like "Add me on Skype"”* (Tien) and sharing their Skype handle.

Whilst many of the matters mentioned in these posts are further discussed between these two actors during *determining commission details*, it is evident that an initial filtering takes place here, with contractors rejecting jobs that are “*not worth their time*”, or do not align with the type of work they prefer to do: “[*the builder*] *said he didn't feel comfortable editing the build of another builder, as he didn't really had that much proof that I didn't just take a build from another server*” (Tien).

Along the same lines, contractors might turn down such a proposition upon consulting the record of scammers (usually referred to as the “blacklist”) their team or their union has developed over time²³. This blacklist includes the names of the scammers, their Skype handle, as well as the type of scam they committed (such as not paying for the build upon receiving it).

Eventually, this interchange of online messages leads to the subsequent step of *contacting*.

Contacting. Getting in touch with contractors happens almost always through Skype, which constitutes the main means of direct communication in the community. As mentioned above, Skype details might be shared through the posts clients leave in the contractors’ forum threads. However, what was revealed through this fieldwork was that these details are also exchanged informally between members every time there is a need for: commissioned work, subcontracting parts of builds, working on a build as a team, etc. Depending on the situation at hand, individuals are introduced to already-created Skype groups, where they can elaborate on what they are looking for. On the other hand, Skype groups might be created on-the-fly, specifically for discussing the matter at hand.

²³ How this list is constructed and maintained is discussed in section 6.1.

Spence: “Like, most of the stuff happens in Skype. That’s how word gets around. And we have a very kind of weird infrastructure when it comes to Skype. Like, you want to try and get your work, your way into it and add certain people in certain teams and you progress into more and more contacts and people you know.” [Interview material: The participant, who was a contractor, was elaborating on the use of Skype in communicating with other members of the community.]

4.2.2 Determining commission details

Upon establishing communication, clients and contractors discuss matters related to the commission itself. In doing so, they aim at thickening the initially vague set of functional and aesthetic details clients developed while *conceptualising the product*. At the end of this activity, both actors will have established a mutual understanding on the exact specifications of the commission, which sets the groundwork for the subsequent activity of *sealing the contract*.

The steps involved in determining the details of the commission are: *agreeing on building specifications*; and *quoting*.

4.2.2.1 Agreeing on build specifications

During this stage, the **functional** and **aesthetic** details actually get specified. Clients and contractors collaboratively discuss the details relating to the build and try to reach a mutual agreement on what needs to be created. This bilateral conversation is initiated by the clients, who have an existing product concept in mind. Contractors then enquire on the said concept, by asking clarification questions, with the aim of unpacking what exactly the clients are commissioning them to do. This aligns with the predominant belief in the commissioning market that the level of understanding and experience from the clients’ side (in terms of building in-game content) varies significantly.

Jason: “Some clients come to us with a very specific brief in mind. So they know what they want; they know what the builds should look like; they know how the game should play. Some clients have never used Minecraft before. Some clients do not

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even know what Minecraft is.” [Interview material: The participant, who was a contractor, was explaining the usual exchanges that take place between contractors and clients.]

This is further illustrated in the following vignette (Vignette 1), which is an example of the negotiations between a client (Dan) and a contractor (Paul) with regard to establishing the build’s specifications. This excerpt was provided by the contractor (Paul) in the form of a Skype log, which was kept by him as evidence of the negotiations between him and his client (Dan). As is discussed throughout chapters 4, 5, and 6, keeping instances of these negotiations during contracting was common practice for the various parties involved in this business as a counter-measure to scamming.

Vignette 1 Establishing functional and aesthetic specifications

Dan: *“Hey, I would order a new lobby. This time, the lobby will be used for the ‘Practice’ mode. The Lobby has to be set in a futuristic city, with robots.”*

Paul: *“Not quite sure what layout you’re looking for? Any futuristic city setting? Will there need to be portals per say? Or a wall of signs? Let me know of your specifications when you can :). Size, any references, content requirements, etc.”*

Dan: *“The style is based on a flying city ‘steampunk’. The size is 150x150. In the lobby should be present 6 wall of signs.”*

Paul: *“So a flying city. Would you like it to be able to see the cut-off of the city? Or shall I blockade it with buildings of varying shapes and angles?”*

Dan: *“I would like that the buildings are at side of the island. Like the lobby arcade of The Hive.”*

Paul: *“So you would like terrain to cover the edges? Or have it show that the island is floating like a regular future city?”*

Dan: *“I prefer to see that the island is floating.”*

Paul: *“Nice alright. Any content things you need in your lobby? Sign walls, portals, etc.?”*

Dan: *“In the lobby should be present 6 wall of signs.”*

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Paul: *“That would be fine if they were integrated into the buildings?”*

Dan: *“Yes.”*

The client initiates this discussion, by requesting a number of functional (“a new lobby,” “practice mode”) and aesthetic characteristics (“futuristic city, with robots”). Whilst details of the build can indeed be found in this request, the contractor picks up on the available cues and requests further information. He makes his uncertainty regarding the specification available to Dan by first stating that he “is not quite sure what you’re looking for” and then posing more specific questions regarding:

- The exact aesthetic theme of the build: “any futuristic city setting?”
- Its functional capabilities, such as the inclusion of “portals,” “wall signs,” but also the “size” of the build, “any references” and additional “content requirements.”

This occasions Dan’s response, which provides Paul with all the requested information: supplementary functional details regarding the specification of the build (its size and the inclusion of “6 wall of signs”), as well as aesthetical details (“steampunk” theme). This bilateral conversation continues, with Paul asking for even more details regarding the aesthetic aspects of the build.

This persistent enquiry points to the fact that Paul needs more details for establishing the specifications of the build. It also acts as an indication that the initial specifications, provided by Dan, were insufficient for the completion of the job; they were very vague, and neither captured everything that was needed for the functional aspects of the build (what it would be, what affordances would it provide to the players, its size, etc.), nor how it would look like. For instance, the contractor enquires on whether the terrain should cover “the edges or have it show that the island is floating like a regular future city.” This builds upon the client’s original request about a futuristic city, which did not make any of these subsequent, aesthetical, details specific. By being provided with options though, the client responds by stating his preference for having the island floating. Along the same lines, the contractor is enquiring on whether it “would be fine” to integrate the wall signs “into the buildings.” This question brings together a

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functional requirement for the build (the inclusion of wall signs) and a stylistic detail (integrating them in the lobby).

In a similar manner to how clients establish the commission's initial details (see section 4.1), **referential materials** come into play during this step too. In the above vignette, one such instance of referential material used as part of contracting can be found, where Dan says that the project should be “like the lobby arcade of The Hive.” Whilst, in this case, there is no evidence as to how this reference played a role in the negotiations between these two actors, there were plenty of other instances where contractors extracted the exact types of aesthetics the clients liked and then implemented them in-game.

Georg: “He [the client] likes to focus on some nature elements, like having a little bit of grassy biomes and trees.”

[Observation material: The participant, who was a builder, was describing what his client asked him to include in the build. This explanation was provided when the builder was working on the build he was referring to.]

4.2.2.2 *Setting deadlines*

Deadlines depend on the specifications of the build, especially its size and the number of elements that need to be incorporated in it, with larger builds (or builds with more details in them) requiring more time to be completed. There are occasions where *contracting* takes place in an informal manner (as illustrated in the previous vignette – Vignette 1), in which case deadlines are not discussed. In other instances though, participants reported the existence of multiple milestones in the development of commissioned work, where they had to provide specific deliverables in each one of them.

Contractors usually mention the time it takes them to create specific types of build in their promotional materials too (Figure 8).

Build Prices & Estimates

Basic Hubs (\$50 - \$200)

This hub setup includes a portal count of 4, 8, or 12 portals. All sides are symmetrical. As such, the price will be heavily influenced by the portal count alone. This build will be guaranteed to feature custom background landscaping, courtyard garden, patterned flooring, and a logo or text of your server/network in-game. Anything extra will come at an additional cost towards the final price.

(Estimated time: 3 Days - 2 Weeks)

Figure 8 Example of the description of the services contractors provide, as found in fora they use in order to promote themselves

4.2.2.3 Quoting

The price of the build and how it is negotiated draws upon the combination of three matters: *its specification*, on the *contractors' expertise*, and on the possibility of *subcontracting part(s) of the build to other(s)*.

Quoting based on specifications: The vignette below (Vignette 2) exhibits the establishing of the final price for the build under commission. It constitutes a continuation of the negotiations taking place between a contractor (Paul) and a client (Dan), which were initiated in Vignette 1.

Vignette 2 Example of quoting

Paul: *“Alright. This would be a total service price of \$225. For a 150x150 (estimated size) futuristic city + 6 integrate sign walls + robotic organics. Is this agreeable to you?”*

Dan: *“Yes.”*

The contractor first mentions the price for the build (\$225) and then recapitulates everything that has to be included in it (the size, the theme, the inclusion of organics and the sign walls). He then asks the client if “this [is] agreeable to you,” to which the latter responds with a plain “yes.” Whilst there is no bargaining taking place in this exchange, the vignette illustrates how prices are connected with the specifications of the build. Many members explained that prices are usually fixed depending on the size and the type of the build (e.g. spawns in the size of 100x100 blocks usually cost around \$100). Building upon the example under discussion here, given that the client is asking for additional elements to be implemented in the final build (organics and sign walls), the contractor adjusts the price in order to cover the manual labour required in creating them and situating them in the build.

Steve: *“But if they want a shop area that's floating and they want this large statue over here, you can even better understand how much more time it's gonna take and quote them [...]. Stuff like that probably cost more.”* [Interview material: The participant, who was a contractor, was

elaborating on how quotes were calculated in the context of the team he was part of.]

Quoting based on expertise: Quotes might vary depending on the builders' experience in creating in-game content. This becomes a negotiation mechanism when the contractors are also the builders of their own contracts, in which case they evaluate the final price based on their own experience and building skills.

Steve: “*But, also over time, since I have gotten better, I started charging more for 100x100, so it's kind of a supply in demand thing.*” [Interview material: The context was the same as the previous quote.]

Quoting based on the subcontracting part of the commission to other(s): Finally, another situation that emerged through the fieldwork was when contractors had to subcontract part(s) of the build to other builders. This could add additional costs that they had to mention to the client, before moving on to *sealing the contract*. In this case, the contractor raises this issue while negotiating the price for the build with the client, by first mentioning that part of the build will be subcontracted to someone else, and then by specifying the extra costs induced by doing so.

Ryan: “*Organic creatures is something I'm not super good at, however, I usually hire a friend of mine to do them for me. He charges \$50 per organic though (obviously could be higher/lower depending on what they are). So that's something you have to keep in mind.*” [Informal chat through Skype: The participant, who was a builder, was explaining how he might ask for more money from the client if he had to outsource part of the commission to other builders.]

4.2.3 Sealing the contract

This is the final stage in contracting commissioned work. Towards sealing the contract, the commission (and its accompanying details) is first *documented* by the contractors. Furthermore, the latter *request a down-payment* in order to reassure themselves of the clients' legitimacy.

4.2.3.1 Documenting the commission

Contractors document the commission in order to be able to subsequently share it with those that will do the job of building (the builders). The tools used in writing down the specifications and storing them for future use (e.g. during deciding on the building task, see section 5.3.1) range from physical resources such as sketches, to digital software solutions such as Trello, Evernote, Google Docs or Dropbox.

An example of such an activity taking place is presented in the following vignette (Vignette 3), in which case the contractor (Paul) was a member of a Minecraft union. This is merely a documentation phase, which means that the commission does not become available to others at this point, but rather during the subsequent practice of *delegating building tasks* (see section 4.3). As per Vignette 1 and Vignette 2, this is part of a Skype log which the contractor (Paul) provided and constitutes the last part of their negotiations.

Vignette 3 Example of documenting the commission

Paul: “Sounds good. I post this project up. Shall I title this project ‘Project GMC Futuristic City Lobby?’ Are we permitted to announce this project once completed to the public? Or is your network/project in development and would like to hold off on the publications?”

Dan: “You can announce the project once complete to the public.”

Paul: “Shall we tag you network as well? IP and such?”

Dan: “The server is in development, so currently there is still no IP.”

Paul: “Alright. No worries. We have many clients in the same position. Let us know when you do release :) we will broadcast your project as well. Helps generate you public attention / free advertisement.”

Discussing posting details: First of all, the contractor enquires on the name that he is going to attach to the project. The name itself is of interest, as it includes information that point to the type of the project: GMC refers to the name of the Minecraft server the build is aimed for, while the “Futuristic City Lobby” informs the builders for both the thematic aesthetics of the build (a futuristic city), as well as of the practical purpose it is going to serve (a lobby in a server).

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Other details that are usually documented are: the functional and the aesthetic specifications (as discussed above), the commission's price and the deadline when it has to be delivered to the client.

Discussing promotional details: The rest of the discussion revolves around promoting and whether the contractor is allowed to advertise the work the union is doing by posting the final build on their forum threads. More specifically, Paul is asking for permission to do so, by specifying that it is going to be public and it is going to happen only when the project is completed. Once he receives the permission to do so, Paul enquires on whether they could refer to the network itself, by posting the "IP and such." By that, he refers to the actual IP address of the network Dan is developing. This reference is crucial for server owners, as the IP is used by the players for connecting to the network; as such, having a reference to the server's name and IP address in the promotional material would facilitate in advertising the network (as pointed out by Paul). Dan explains that since "the server is in development, there is still no IP," which leads to Paul's empathetic reaction, who says that many of their clients are in "the same position." However, he encourages Dan to let the union know about the IP, when the server is "released," offering to broadcast its launching. He even makes the reason for publicising explicit, by saying that it "helps generate you[r] public attention/ free advertisement."

Accounting for who is going to do the work: Paul gives an account of how the work that is commissioned by Dan is going to be handled by the union members involved in the process: he is the one that is going to receive it (by the client), document it and subsequently make it available to the rest of the union by "post[ing] it up." When it comes to advertising the work though, he switches to the third person by referring not only to himself but to the entire union ("are we permitted to announce this project...?"). Through this, it becomes evident that: (1) the work will be handled by someone else (by the one who will claim it, as is the established members' method of getting jobs, see section 4.3); (2) the union acts as a whole and its members reflect on that, even when they are talking with their clients. It needs to be pointed out that this particular contractor (Paul) was one of the most prestigious members of the union: he was one of its founding members, due to his connections in the market and the expanded

network of clients (which resulted in the provision of a large number of commissioned work).

4.2.3.2 Receiving down-payment

The final step prior to accepting the commissioned work is to receive a down-payment for the build as “a guarantee” (**Spence**) that the client is not going to scam the contractors. Scamming is a common phenomenon in this market, which is manifested in many ways, one of which is for the client to receive the product without paying the contractors for their services.

Steve: “There is definitely instances in the past where you get this nice big job to do for somebody, get it off and they just don't want it. And it's just a waste of your time.” [Interview material: The participant, who was a client, was describing why a down-payment is important during contracting by giving examples of clients not paying for builds.]

The intermediaries come into play here, as the payments are sorted out through them. Either PayPal or dedicated vendors (see section 3.3.2) provide a safety net for both parties, reassuring them that if the clients do not receive what they paid for or if the contractors do not receive a full payment for the services provided, they will get a refund or not be obliged to deliver the build (respectively)²⁴.

When it comes to getting commissioning propositions by returning clients though, this step can be skipped as contractors have already established a trustworthy relationship with their clients and do not need further confirmation of their legitimacy.

4.2.4 Recapping contracting

4.2.4.1 What is accomplished through contracting

This segment of the arc of work results in the successful formation of collaboration between a client and a contractor. In doing so, a number of sub-matters are addressed, namely:

²⁴ Both of these precautionary measures are further unpacked in section 6.1.

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- Finding a suitable contractor to commission the work to;
- Pinning down the commission's exact specifications (functional and aesthetic characteristics, a price for the job, as well as potential deadlines);
- Formalising the agreement between the two involved parties, which occasions the subsequent practice of *delegating building tasks*.

4.2.4.2 How contracting is coordinated

As the analysis revealed, there are plenty of practices and tasks members attend to in order to achieve the aforementioned outcomes. More particularly, the three points where coordination work becomes a necessity for contracting to succeed are:

- When clients express their interest of commissioning a job;
- When clients discuss the commission's specifications with the contractors;
- When clients and contractors want to reassure each other over the agreed commission.

While *finding contractors*, coordination work revolves around the clients making their interest in commissioning a build available to contractors by: (1) posting in the forum threads the latter use for exhibiting their work or; (2) directly contacting them via Skype. The information clients include in their messages are related to the commission itself and becomes a resource for contractors to decide whether the proposed commission is of interest to them or not. More particularly, clients touch upon: (1) the type of build they want to commission, including both functional and aesthetic characteristics (e.g. size; (2) when they want to receive the build; (3) the amount of money they are willing to pay; and (4) their contact details. Contractors use these resources in order to decide whether the proposed work is worth their time and depending on the decision, the whole process moves on to the next practice or terminates here. In the latter case, clients will repeat the same procedure with other contractors.

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When it comes to negotiating the commission's details, coordination is driven mainly by the contractors and results in establishing the project's final specifications. Whilst the mechanical actions employed in doing so are mainly verbal or textual exchanges of referential materials or descriptions of what needs to be implemented (e.g. Vignette 1), contractors coordinate the discussion, by picking up the clients' vague descriptions of the commission, enquiring for more details, and suggesting a number of options to the clients. This coordination exhibits contractors' expertise in the methods employed while *building* in-game content; knowing how builds are usually structured and used while playing mini-games, they direct the conversation in such a way as to distil the relevant information builders need in order to work on the commission.

Finally, an important practice that becomes relevant at this stage is avoiding scamming. Essentially, clients need to reassure the contractors that they are not scammers and that they will meet their end of the agreed upon deal. While this matter is revisited a few times across the arc of work (see sections 5.5 and 6.1), building trust at this preliminary stage of commissioning draws upon clients down-paying part of the agreed amount of money in order to assure the contractors that they are not scammers. On top of that, contractors might consult a record of previously recognised scammers, which is collaboratively maintained and updated by various members of the commissioning market (see section 6.1).

As part of this finalisation stage, contractors need to document the commission in order to make it available to the builders the project is going to be assigned to. This resource becomes relevant in the coordination between the actors involved in subsequent segments of the arc of work (see sections 4.3 and 5.5).

This practice's main outcome (the commission's specifications) becomes an actionable resource that following segments of the arc of work (*delegating building tasks* and *crafting content*) draw upon.

4.3 DELEGATING BUILDING TASKS

This is the third segment of the arc of work of commissioning and creating a Minecraft map and the last one of the tripartite that constitutes “before

building.” It is initiated right after the commission’s specifications are established, and contractors and clients have *sealed the contract*. By having the specifications available, contractors need to find the appropriate builder(s) to delegate the job to. This section focuses on unpacking the methods and the reasoning that are employed by the contractors in doing this job of work.

Prior to any type of task delegation taking place, contractors *make a schedule* that outlines the agreed deadlines and what has to be delivered per each deadline. In terms of the delegated task itself, it is broken down into three distinct activities: *assigning task(s) to builder(s)*; *sharing the commission*; and *subcontracting the commission*. Each of these activities applies to different cases and as such are unpacked separately.

4.3.1 Scheduling

Prior to assigning tasks to builders, the contractors (who hold ownership of the commission) schedule tasks based on the timeline specifics of the project (which were established during the *contracting* phase, see section 4.2). This is done on the basis of meeting the designated deadlines for the build. In most of the cases, commissioned work constitutes only of one single build (a spawn, a build inside a spawn, an organic, etc.), work that is conducted by one individual with the sole deadline of delivering the build by then. In that case, the contractors assign the building task to the builder (as is discussed in the subsequent sections), who then have to create the map by then.

In projects where multiple builders are assigned to different but interdependent tasks and the progress of the overall project turns upon the progression of said individual tasks, coordination is necessary. For example, the construction of a hub that constituted of 8 distinct portals was contracted to a single contractor, who then made it available to the union he was a member of (an activity that is referred to as *sharing the commission* and is more extensively covered in section 4.3.3). Builders could then claim as many of these portals as they want. However, they have to finish them on time, before the deadline for the delivery of the build.

Georg: “There is an agreed deadline for the project. That is when it needs to be done. Other than that, in for example this

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project, we split up the workload in each individual city. So, each city has its own bounty that you can claim and to me it doesn't matter if you claim 10 cities or 5 or 6 or 3 or even one; the only thing at that point in time once you claim, you need to finish it.” [Interview material: The participant, who was a builder, was discussing how deadlines are set and followed in the context of the team he was part of.]

In this case, coordination depends on meeting the deadline, which applies to all of the builders. The work of one builder is not dependent or does not affect the work of others, as all of them are working independently on different parts of the same project. In other cases though tasks were interdependent to each other, with the initiation of one being contingent to the finalisation of another. For instance, a specific project demanded the creation of an entire world, populated by distinct civilisations (an example that will be revisited later on). The first task that had to be done prior to the initiation of the building process was the construction of the world itself (a task that is referred to as *terraforming*, see chapter 5). Only upon its completion, the team could log in the server of the game and start building directly in the world of the game.

John: *“I am at the point, within the next day or two, to start exporting the terrain into Minecraft, which is a little bit why it's been very slow on the server. We are not building anything. Everyone is just waiting for me to finish.”* [Observation material: The participant, who was a builder, was explaining how the build he was working on when the observation took place was related to a milestone in the overall progress of the project.]

To recapitulate, scheduling is done mostly on the basis of what needs to be done by when. Resources that are used for coordination are shared documents (e.g. Excel spreadsheets) *“with all the work that needs to be done, everyone helping and their responsibilities”* (**Jason**). Part of scheduling is also breaking down the project into distinct parts and arranging all the involved tasks based on the deadlines entailed in doing the project. If, for instance, part of the specifications

of the project includes the creation and incorporation of a variety of elements (such as trees), then the contractor might create a list of all the tree types that have to be created. In a spreadsheet that was disclosed by a participant, all the tasks that the team was assigned to do on a weekly basis were laid out, followed by the formal deadlines for each of them²⁵. Alongside that information, they had the details of what they were supposed to deliver by said deadlines.

4.3.2 Assigning task(s) to builder(s)

This is a job of work that takes place in the context of build teams and those who allocate the building tasks are the team leaders themselves. Based on participants' accounts, team members do not choose what to work on; they are assigned tasks based on their leaders' judgement of who should work on what, which judgement depends on the builders' skillsets and their time availability. This activity's accomplishment leads to the successful assignment of all the building tasks a commission constitutes of to those that are capable of carrying them out.

When the project is big and the client wants it delivered in a short period of time, then it is possible that more than one team member will be allocated to it. In contrast to that, many projects are relatively small in size and sufficient time is provided for their completion to the contractors by the clients, hence the former assign only one builder to them as they judge it as feasible to be done by only one.

Spence: "We tend to split the workload after the project has a certain size or has a certain deadline. To say there was 100 by 100 project that would needed to be done within two days, we would probably assign two builders to that, whereas if it has to be done within a week, we would only assign one."

[Interview material: The participant, who was a contractor, was explaining the reasoning behind the number and the seniority of builders that were assigned to a new project.]

²⁵ The content of this document is omitted, as the participant did not consent on revealing the exact details and names included in the spreadsheet due to the non-disclosure agreement he had signed with their client.

The following sections elaborate how assigning tasks to builders is done based on builders' *expertise* and *availability*.

4.3.2.1 *Choosing builders based on expertise*

Builder's expertise and skillset are one of the most important aspects that team leaders take into consideration while choosing who should be assigned to a specific project. This is due to the fact that in-game content does not come only in one form; there are many different types of builds, each of which demands specific skillsets and potentially the use of expert tools (which can even extend the borders of the game, as is discussed in chapter 5). A few build types that were regularly mentioned by the participants are:

- **Organics**, which is anything with naturally shaped elements in it, such as waves, leaves, plants, animals, human figures, etc. (Figure 9);

Josh: "When I say organics, it's pretty much anything that isn't a structure"

- **Landscapes/ terrains**, which are created via the use of external to the game software, such as World Machine²⁶ and World Painter²⁷ (Figure 10);
- **Logic circuits**, which are created by using the in-game mechanism of red-stone²⁸ (Figure 11);
- **Big-sized buildings**, which require expert knowledge of World Edit²⁹ (see chapter 5).

²⁶ World Machine is a tool that is used for creating large maps, as shown in Figure 10. It is a software that sits outside of Minecraft's context and can be used by anyone in order to create maps of any type and for any use. World Machine provides the capability of exporting the map in the form of "height maps" (specialised format that shows the latitude and altitude of the generated terrain). The use of World Machine is further discussed in chapter 5.

²⁷ World Painter is another external tool which is used for painting height maps (exported by World Machine) with Minecraft in-game content. The final outcome of this job is a Minecraft map that can be directly inserted in the game. The use of World Painter (in combination with World Machine) is further discussed in chapter 5.

²⁸ Red-stone is an in-game mechanic that is used for creating electronic circuits. Essentially, it is equivalent to creating logic gates, the fundamental elements for the circuits that are used in modern computers. Via the use of red-stone circuits, players can create in-game automations, such as enabling the functioning of elevators via the use of levers. This job of work falls outside the context of this project, hence is not going to be covered in further detail.

²⁹ World Edit is a tool used massively during in-game content creation and facilitates the selection and manipulation of massive amounts of blocks. Its usage is further discussed in chapter 5. <https://dev.bukkit.org/projects/worldedit>

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The possibility of a builder being an all-rounder is not excluded, as many of the members that participated in this research were indeed competent in working on multiple of the above build types. However, when a commission specifically demanded the creation of one of them, the team owners would assign the task to the corresponding expert in order to deliver the best quality builds possible.

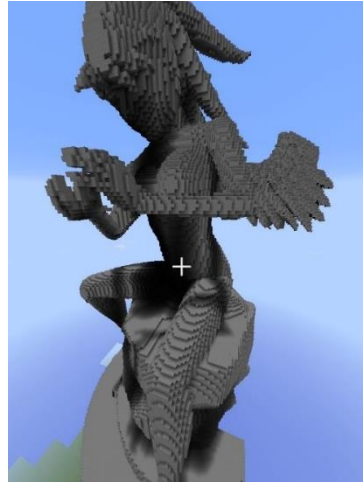


Figure 9 Example of an organic



Figure 10 Example of a landscape³⁰

³⁰ Property of BlockWorksMC build team. Picture downloaded from: <http://tinyurl.com/nvplqtx>

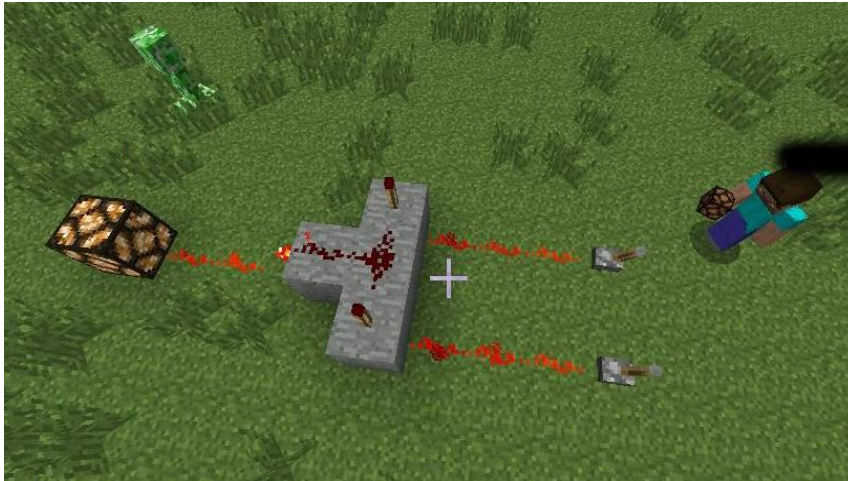


Figure 11 An AND logic gate

This discussion occasions the question of: how do team leaders keep track of their builders' skills? Having that knowledge is important for the job of assigning tasks, as it is one of the main criteria that partake in choosing builders. A number of members' accounts were acquired regarding this matter, with the consensus being that team leaders have this information "*in their head*" (**Jason**) and just pick the right member for the right job. As mentioned above, this is not always a necessity, as some of the teams have members that are "all-rounders," hence they are capable of being assigned to any project and accomplishing any type of work. In other teams, though, the level of experience and the skillsets vary. As such, team leaders need to keep track of who can do what.

This is mainly achieved through the leaders' personal engagement in the hiring process. Even though this falls outside the direct interests and research focus of this thesis, it is important to tease out some of its elements in relation to how tasks are assigned. As part of applying for a position in a build team, the candidates have to submit a portfolio of their work, which is indicative of their skills and competence in building. The leaders of these teams judge these applications and develop an understanding of the builders' skills and expertise, knowledge that is put to use during task assignment too.

Josh: "They'll send me an Imgur album, which will contain all their different builds, or at least the ones that they've recently done, so I know what skill level they're on and what they are capable of doing. And for that I look at how their

skills look in structures, in terrain and in organics.”

[Interview material: The participant, who was a contractor, was talking about his criteria when it comes to hiring a new builder in his team.]

Lastly, expertise comes into play when the commission comes from a prestigious client (such as the owner of a well-known server or a high-profile company). In that case, team leaders might assign their most skilled builders to the job in order to develop and subsequently deliver the best quality product to their client.

Spence: “It depends what project it is and what the client is like. If we've got a very high profile client, obviously I will be more tempted to give it to the better builders I know that they are on the team.” [Interview material: The participant, who was a contractor, was explaining the reasoning behind the seniority of builders that were assigned to a new project.]

4.3.2.2 Choosing builders based on availability

Another important aspect in delegating tasks is the builders' availability, as team owners can always pick builders that are currently available and not working on something else. This raises the question of how team owners actually manage to keep track of who is available and who is not. The reported methods for managing this job of work varied across teams, but can be roughly categorised as such: *having large teams* and *using productivity software*.

Having large teams. Many of the team leaders that participated in this research were acting on the principles of having a team that can cover any commission by gathering as many different skills as possible. This is the case not only because of the large diversity in in-game content and build types; it is also a matter of meeting demand and managing to cover the incoming projects of the clients in a timely manner. By having a large number of builders available on the team, but also builders with diverse expertise and skillsets, team leaders are capable of handling any type of projects at any given time.

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Jason: *“That’s partly why we have such a large team. It makes my life easier when a project does come; I have 40 people to choose from to move that forward.”* [Interview material: The participant, who was a contractor, was talking about his approach in having at least one available builder at all times.]

Having exclusive builders to the team reinforces this method, as team leaders find it easier to keep track of everyone else’s status and availability. Even though this is not a method followed by every team leader, one of them, in particular, stated that:

Josh: *“if they have their [the builders’] focus more on the other team then I have members that I cannot really use for anything, because they are busy doing other stuff.”* [Interview material: As above, the participant, who was a contractor in a different team, was explaining how availability of builders was handled in his team.]

Using productivity software: Some of the software tools that were mentioned as facilitators in keeping track of builders’ availability were Microsoft Excel and Trello. Trello, in particular, was brought about quite vividly by a team owner, who shared a screenshot of how his team carried out this job of work (Figure 12). In this team’s context, team members use Trello for accounting for the work they are doing and having it as a reference point for: (1) the available projects; (2) the assigned projects; (3) for the builders responsible for those projects; (4) and for the completed ones. Besides that, builders are capable of accounting for the work they are doing (or have done) to the rest of the team via attaching comments on the pins that correspond to the projects they are working on or accounting for their absence by *“updat[ing] their cards as in when they know they are going to be away, or if they have any issues”* (**Spence**).

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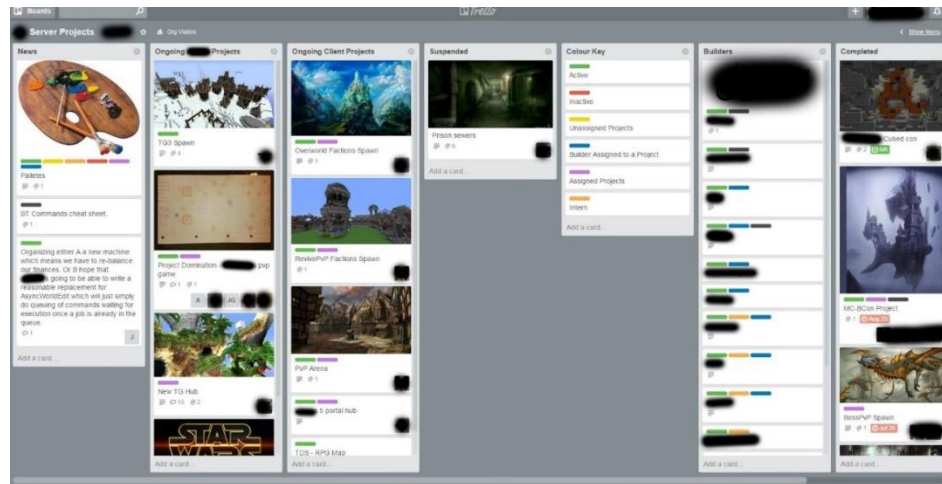


Figure 12 Example of a Trello board (belonging to a building team)

Spence: “It helps everyone to see what is going on within the team itself. So we never really have people working on mysterious projects.” [Interview material: The participant, who was a contractor, was explaining how builders’ availability was tracked in the context of his team. The Trello picture was shared by him in order to illustrate his points.]

The use of Trello is quite an interesting case, as it constitutes one of the main systems adopted by many professional Minecraft players for accounting for their work and tracking the progress of running projects. The picture above (Figure 12) depicts only a general overview of how a Trello board looks like and how cards are pinned on it. Alas, it is impossible to discern the bits and pieces that constitute those cards and hence understand how the work is organised and accounted for by the members. By taking a closer look, it is possible to tease out some elements that warrant further discussion:

1. **A key** that specifies the properties which are assigned to projects or builders (Figure 13);
2. **A list of all the ongoing client projects** (Figure 14);
3. **A list of all the builders available in the build team** (Figure 15).

What follows is further unpacking of this type of information and how accountability is achieved through Trello.

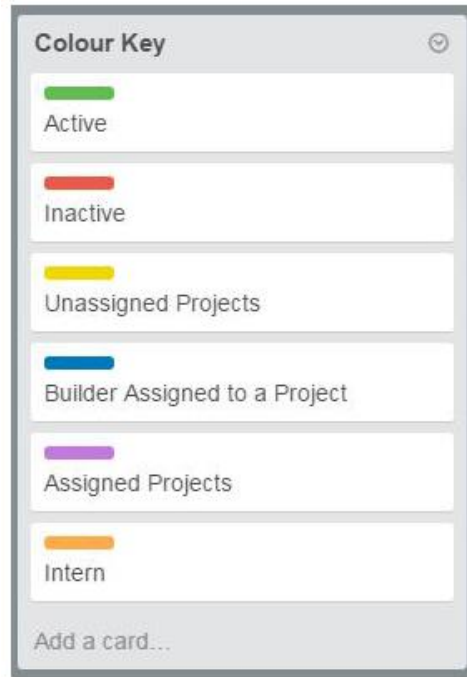


Figure 13 Colour key card which represents the various states projects or team members can be assigned to

The way this team organised the information available on their Trello account turns upon assigning colour-coded labels on the cards of the builders and of their projects. As is depicted on Figure 13, each one of these labels corresponds to the status of a builder or of a project. The green label, for instance, signifies (and hence is attached only to) the active projects or builders, while the blue label stands for the builders who are already assigned to a project. Accordingly, when a builder has declared that they are not going to be active for a period of time, they assign to themselves the “inactive” red label, which makes it available to the team leader that they cannot rely on that builder for handling building tasks for upcoming projects.

Instances of these labels being attached to the projects’ and the builders’ cards are presented and unpacked in the following figures (Figure 14 and Figure 15).

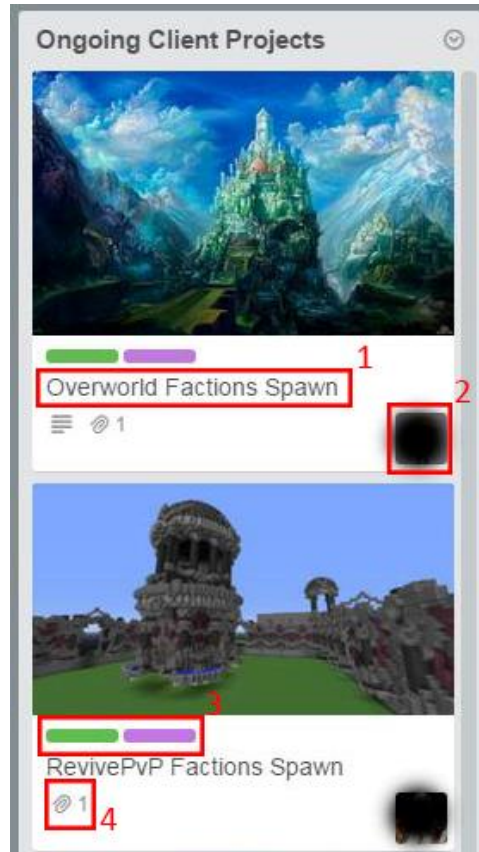


Figure 14 Ongoing client projects card

As seen here (Figure 14), each project has its own card and is listed under the “Ongoing Client Projects.” The details of each card, which are of importance with regard to how members account for their work practices, are the following:

1. **Name of the project:** As previously discussed (see section 4.2), the name of the project points to the type of build that needs to be created (e.g. a spawn for a Factions map). Sometimes, the name might also include the information about the client (their name, the servers they are associated with, etc.) who commissioned it.
2. **Picture of the assigned builder:** This detail accounts for the builder(s) who is assigned to the project. That way, the team leaders (but also the rest of the team) can know who is available and who is not.
3. **Assigned labels to the project:** By updating the status of the project, team leaders know which ones have or have not been assigned to builders. As a result, they are capable of tracking down the remaining ones and assign them to existing builders, based on their availability.

4. **Attachment(s) with the specifications:** This is quite an important detail as the builders cannot proceed to working on the project without receiving the specifications for the build (see sections 4.1 and 4.2). This attachment includes all the relevant information for the project, which the builders use in order to do the work of crafting (see chapter 5).

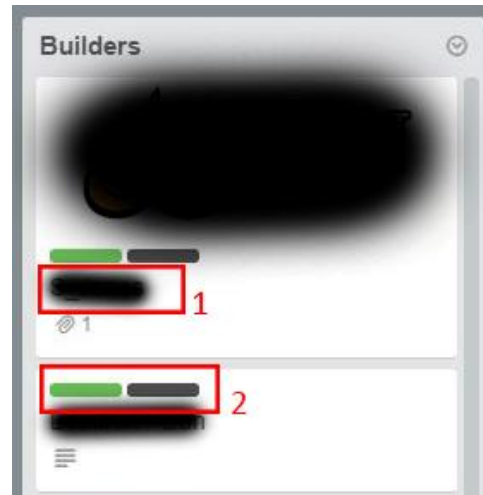


Figure 15 List of builders' card, which showcases the builders of a particular team, as well as their availability

Figure 15 exhibits the list of all the builders in a particular build team. Each one of the cards in the list corresponds to one builder and the information available for each one of them is as follows:

1. **Builder's name**
2. **Builder's status:** As seen in the figure, builders are marked as "active" (green label) and/or as "assigned to a project" (blue label). Active means that the builder is currently capable of working and not away. Being assigned to a project though accounts for their availability.

Whilst this constitutes an example of how one team incorporated Trello into its workflow, a similar infrastructure was also adopted by other members as discussed in the following section.

4.3.3 Sharing the commission

In contrast to how job assignment is socially organised in the context of a team, members of Minecraft unions manage this task in a different manner; instead of having a manager that oversees and assigns all building jobs, each member is capable of both sharing and claiming commissioned work.

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“We are strictly a union of individual builders talented in our own area of expertise. Individuals here are to handle their own commissions and are free to collaborate with others on the projects at hand. You are not bound nor forced to participate in or offer collaboration commissions.”³¹

It is important to note a few details with regard to the responsibilities each individual has in this context. Whilst builders are responsible for producing the Minecraft map and delivering it back to the contractors on time, the ones that provided the job in the first place (the contractors) retain the rights to job ownership and payment. Because of that, they are accountable for the commission’s progress to the client, as well as personally delivering it back to them (unless it is stated otherwise, as discussed in *publishing the commission*). Along the same lines, contractors receive the negotiated amount of money and then distribute it to those that participated in the commission (see section 6.2).

Steve: “It becomes my responsibility to relay what builders are building for the client to the client.”

Georg: “They [the ones that get a job] are actually going to produce it, which means that they are actually responsible for the final product.” [Interview material: Both participants, the former one being a contractor and the latter one being a builder, were discussing how information was relayed between those involved in a commissioned project. These two participants belonged to different teams.]

The need to share jobs with other Minecraft builders (through the union) emerges when a contractor is approached by “a client that he [the contractor] is not able to spend the time working on the project” (**Georg**)³². There are many motives for sharing the surplus of jobs with union members, the main one being the participation in a community that is detached from the hierarchical structure that defines the way teams are managed. As is discussed in the succeeding section, builders can claim the jobs they want to work on and can do that in an

³¹ Excerpt from the union’s terms and conditions.

³² Union members can be both contractors and builders.

environment that constantly provides them with new opportunities. By the time of writing of this thesis, the particular union under study had more than 30 members, some of which were well-networked contractors and hence had a constant flow of job opportunities that they partially shared with the union. Due to that, union members could get jobs at any given time. This arrangement benefited both builders and contractors though; the former could occupy themselves whenever they wanted to work on a commission; the latter for the convenience of being able to outsource the excessive number of jobs, which helps them maintain good business relationships with their clients (since they get their job done).

Two specific steps are carried out towards sharing a commission: *publishing* said commission, and then *claiming* the job. The following sections elaborate what is involved in carrying out these tasks³³.

4.3.3.1 Publishing the commission

The first task towards sharing a commission is by making the work available to the rest of the union members. This is carried out by the contractors, who have already received a job by a client and hold its specifications. There are two matters that are of relevance to accomplishing this task: *the platform used in doing so*; and *the details* attached to each publication.

Platform for sharing the work. As was the case with the build team that was covered in *assigning task(s) to builder(s)*, the union was also using Trello as the means of sharing and managing commissioned jobs. Upon collaboratively establishing the specifications of the build with the client (see section 4.2), the contractor attaches all the relevant “*information, requirements of the build, price of the build, what the client would expect to be done, into Trello*” (Steve).

Georg: “*We have a giant billboard and we just hang on flyer and each flyer has a job description on it.*” [Interview material: The participant, who was a builder, was discussing

³³ This method of sharing commissioned work comes directly from members of one union, who participated in this project.

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how information of new commissions was shared, stored, and accessed in the team he was part of.]

Even though access to the union's Trello pin board was not acquired, members' accounts point to a similar organisation with regard to posting on Trello. More specifically, it was reported that members attach files and labels to each card, as well as checklists with the corresponding tasks that need to be performed towards the completion of a job. When union members say "*just hang on flyer*" about new jobs, what they actually refer to is the creation of a new card, which corresponds to the job they want to make available to the rest of the union. This card is then placed on the list that corresponds to open commissions and thus becomes available to the rest of the union members.

Max: "On Trello, we have a whole like card dedicated to like open commissions and stuff and basically they... As soon as there is a new open commission, they put all of the details that you need to start it." [Interview material: The participant, who was a contractor, was elaborating also elaborating on the use of Trello and how information is stored and shared between members of the team.]

It needs to be mentioned that not all builders are aware of, use or have access to some of the tools that contractors or project managers use in storing commissions' specifications. One of the instances revealed through the conducted fieldwork was that of a manager using Evernote for storing a number of materials related to the project, which however was inaccessible to the rest of the team who did not use this particular software.

John: "I think that's [reference to a previous build] still on Evernote, which you wouldn't know, because you don't use Evernote." [Observation material: The participant, who was a builder, was referring to another builder he was working with in real-time inside the game.]

Details of each commission. Whilst the information that is shared between contractors and union members revolves around the specifications of the build

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(as was the case with the previous case of *assigning task(s) to builder(s)*), there are some distinct characteristics that diversify how this job of work is carried out in the context of Minecraft unions. More specifically, contractors do not always attach all the relevant details in the commission's Trello card, but rather leave a note on the card, informing the prospective builders that they have to either contact them or even the clients themselves prior to initiating any building tasks.

Georg: “*You need to contact the client yourself.*” [Interview material: The participant, who was a builder, was describing who needs to come in contact with clients in order to gather extra information about a particular commission.]

In terms of how the information related to the available commissions is distributed across the involved union members, a variety of digital technologies are at play. Clearly, Trello constitutes the cornerstone in the job of *sharing the commissioned work*. As was mentioned above, checklists constitute a method contractors adopt for making the specifications of the commissioned work available to the builders. On top of that, union members have access to a shared Google Docs account, where they store the documentation with the specifications for each commissioned project. As such, Google Docs becomes the resource that “*everybody can read and use as reference*” (**Georg**) for what needs to be done regarding the available commissions. Finally, when contractors and builders have to coordinate with each other, the means of communicating with each other is through Skype. This is further discussed in the subsequent section, where the organisational aspects of how information is relayed between the union members is unpacked.

Once the job is available on Trello, union members can claim it and initiate working on it.

4.3.3.2 *Claiming the job*

As mentioned before, any union member can claim any of the available jobs, instead of being assigned to one by a manager. The matters that are of relevance to the accomplishment of this task are: *accessing commission's details, the*

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practical reasons for claiming a commission, and finally *accounting* for such an action to the rest of the union.

Accessing commission's details. The information that is of relevance to the builders (the specifications of the build, including the type of the build, its dimensions and the price for the work) is directly available on the card that corresponds to the commission itself. Consequently, the builders are capable of getting access to what needs to be done by checking the card and any of the attached files to it. In the contingent scenario where the claimant has to come in contact with either the client or the contractor in order to receive further details regarding the commission, their names are referred to in the corresponding card.

Practical reasons for claiming a commission. A specific union member elaborated on his reasoning regarding choosing a job. For him, what really mattered towards claiming a job was good value, which depends on the time that it would take him to finish the project in relation to the amount of money he is going to receive in return for providing the client with service of making the Minecraft map. Estimating the time it would take him to finish a project is done on an empirical basis, since *“after a while, you just get a sense of how fast you can create something”* (**Georg**).

Georg: “Good value; ... time investment compared to the money in return. I can accept a \$2000 commission. However, if that specific \$2000 commission takes me 200 hours to create, [it is not worth it].” [Observation material: The participant, who was a builder, was explaining his reasoning behind the commissions he was accepting.]

Accounting for claiming a commission. Regarding how claiming is actually done, two distinct methods that were employed by the members emerged: that of builders *“subscribing to the card”* (**Max**) that corresponds to the job or contractors *“add[ing] them to the project instead”* (**Georg**). In both cases, the member's avatar that is assigned to the job will be attached to that job's corresponding card (as shown in Figure 16), which makes it visible to the rest of the union that they are the ones who are going to work on that specific commission. Given that *claiming* a job takes place in a *“first come, first served*

basis” (Steve), this system facilitates knowing who is working on what, and also makes accountable which jobs are taken and which are available.

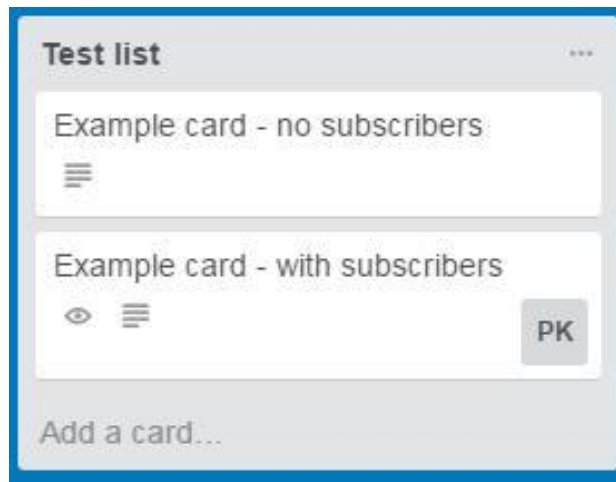


Figure 16 Example of a card with (top) and without (bottom) subscribers

The existence of two distinct methods for doing *claiming the job* points to how contractors manage the work that they have in their possession. Some contractors make projects available to the rest of the union so that any member of said union can claim them. Others, on the other hand, get in contact with builders prior to posting the commissioned work on Trello. The latter case is labelled as *subcontracting* the commission and is unpacked in the subsequent section. The main reason for distinguishing these two methods from each other is the fact that in the former one, the contractor shares jobs with the entire union without making any distinctions between the members; it is up to the members to claim the job. In the second case, the contractor who approaches builders and assigns the job to them, having clear criteria and goals in mind.

4.3.4 Subcontracting the commission

In the contingent scenario of having neither the necessary skillsets nor the available time to work on the project, contractors seek out to *subcontract* the commission to another builder. Regardless of the similarities this job of work has with *sharing* the commission, there are some characteristics that diversify them from each other. First of all, it is carried out by contractors who do not have the means to see the work done. In the case of freelancers, this is translated into them not being able to do a particular build due to lack of skills or time. In the context of teams though, the act of *subcontracting* becomes a necessity when

there are no members in the team that have the relevant expertise for doing a commissioned job. In both cases, contractors try to find builders³⁴ appropriate for the work and then delegate it to them.

Jason: “On occasions we have a specific project which needs a particular type of skill and we might maybe look around the community to see if anyone is doing something like that.”

[Interview material: The participant, who was a contractor, was elaborating on the occasions when he and his team had to subcontract builds to external builders.]

Some of the criteria that were mentioned by the participants with regard to contacting builders for subcontracting the work to were their skillsets, as well as “*how does someone react on time pressure*” (**Georg**). One of the participants specifically reported that he evaluates these two parameters by inviting prospective builders in their server to work together on the project. By doing so, they could “*determine which person is capable and which person is not, because you actually see them build in real-time*” (**Georg**). This case applies to a freelancer subcontracting part or entire commissioned projects to other builders. Aside from freelancers, team managers can also subcontract work when their team lacks the necessary skillsets. For teams, subcontracting can be beneficial as they “*work alongside them [the builders], instead of incorporating them in the team*” (**Jason**).

4.3.5 Recapping delegating building tasks

4.3.5.1 What is accomplished through delegating building tasks

Successfully accomplishing the underlying steps in *delegating building tasks* results in:

- Making a schedule that includes all the project’s deadlines and what needs to be done by each of these deadlines. This task is carried out solely by contractors.

³⁴ In this context, finding builders is carried out on a similar manner as clients are *scouting for contractors* (see section 4.2). Due to the resemblance in how these two activities are accomplished, further descriptions are omitted.

- For the project (or individual parts of it) to be delegated to someone that can work on it. Doing so turns upon the type of contractors: freelancers, for instance, do their own work, so they delegate tasks to themselves. Team managers, on the other hand, assign tasks to their builders, while union members share the job freely with the rest of the union. Lastly, the contingent scenario of subcontracting the job is possible too, which is occasioned when contractors do not have the available skillset (either themselves or the members of their teams).

Attending to these matters necessitates coordination activities, as discussed below.

4.3.5.2 How delegating building tasks is coordinated

When it comes to scheduling, contractors need to pin down what needs to be done by when prior to assigning tasks to builders. This job of work turns upon the creation of documentation (in the form of digital files, such as Excel spreadsheets or Trello boards), which include information related to (1) deadlines, (2) deliverables for these deadlines and (3) the specifications of the build. These documents are a shared resource between those involved in managing a project (contractors and other individuals on the team that are responsible for overlooking the completion of the work).

In the case of interdependent work activities (where builders cannot initiate their tasks till others complete and deliver their own) coordination over the status of said tasks takes place via a number of bespoke systems and methods, such as: (1) builders informing each other (via Skype messages or during in-game building) about when a task is about to be completed or: (2) by leaving colour-coded notes on the site of work (the Minecraft world they use in order to create content) that signify work-in-progress. These matters will be further unpacked in Chapter 5 (see section 5.3).

Concerning assigning tasks, coordination work mainly revolves around knowing who is available to take up a particular project and accounting for said availability. This is attended to via the appropriation of third-party productivity tools, such as Trello or Excel spreadsheets. Trello's case is quite interesting, as

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it is a shared resource that is accessible to all members of a building team or union.

In a team setting, the team manager can check builders' status by consulting their personal Trello card and understand whether they are available or are already assigned to another task. Based on this information, they make the decision of who to assign the job to. In unions, coordination revolves around the availability of projects instead of builders, as contractors upload a commissioned job to a Trello board and then builders can claim if it is available. This resource becomes accessible to them by checking whether someone has already claimed it or not, a feature of accountability that is afforded natively by the platform itself (when builders attach their name to a card that corresponds to a project, other builders can see that the project is already taken).

Lastly, in any of the aforementioned cases of contracting a job to a builder, clients have to coordinate with others with regard to what needs to be done for that job. This task draws upon the information contractors make available to builders via the established means discussed above (Trello, Google Docs, Dropbox, etc.). Contractors upload all the relevant documentation (referential materials, project's exact specifications, etc.) to these platforms and then builders can access them at any point in time. As will be revealed in chapter 6, builders account for their progress by updating the Trello cards that correspond to a project (ticking off the checklist the accomplished tasks) or by directly talking with those they work with (via Skype messages or real-time in-game briefing).

4.4 TAKEAWAYS

In this chapter, the activities entailed in the doing of the first three segments of the arc of work of commissioning and creating a Minecraft map were unpacked, namely: conceptualising the product, contracting, and delegating tasks. Upon the completion of these three practices, the specifications of the commission are fully established, and the necessary building tasks are assigned to the corresponding professionals (Minecraft builders).

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The first instances of the distributed nature of the work emerge even in these segments of the arc. First of all, the geographical dispersion of the involved actors becomes clear, which occasions the adoption of a number of online platforms as the sites where work happens, namely: Trello, Skype, and the game itself. Each of these sites provides the affordances for coordination and articulation work, such as: builders declaring their availability for undertaking commissions and promoting themselves; contractors sharing commissions and their accompanied specifications; contractors tracking the status of those involved in a team; and establishing trust between the involved parties. These actions are necessary for the successful accomplishment of the overarching practices they are part of.

Furthermore, the power dynamics between those involved in the market start to surface. The job of commissioning is not necessarily a linear process, with the clients giving a job to contractors, who then delegate tasks to builders. Contingent scenarios do exist, and the actors' decisions turn upon a plethora of relevant criteria. Clients, for example, need to scout the creative community in order to find contractors who are capable of delivering high-quality work that will meet their demands. Along these lines, contractors might decide to outsource their projects to others, due to lack of time or skill. Similarly, they might subcontract part or the entirety of a project to builders that they are not directly associated with. Regardless of who does the work though, contractors retain full ownership of the commission, which enables them to promote themselves and maintain their network of clients in spite of the fact that others did the actual work of building in-game content.

Finally, the characteristics of an idiosyncratic organisation type are raised for the first time: unions. A union constitutes a unique entity in the commissioning market, which functions in the premises of providing a liberal arrangement to all its members, wherein they can freely share their commissioned work. The methods employed by its members revealed a great deal of information with regard to the use of Trello as a site of work, measures against scamming and in-game building.

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Many of these details will be revisited in the subsequent chapters, where their significance and their role in the market will become clearer.

Chapter 5

5 CRAFTING CONTENT

This is the arc's keystone segment, constituting the very practice that leads to the creation of the product at play in Minecraft's commissioning market. As is discussed in the subsequent sections, this content can either be created in the game (hence referred to as "in-game content") or outside of it (through the use of external software). It will also be revealed that there is a lot of direct and indirect collaboration involved in doing *crafting*, as builders not only work together inside the game but also appropriate and adapt resources that are publicly available in the broader creative community.

Whilst the underlying activities (namely: *envisioning*, *terraforming*, *preparing*, *building*, and *reviewing* user generated content) are presented in a sequential order, this does not fully represent the ways in which they naturally unfold while crafting. On the contrary, many of them permeate the entire practice, while others are dependent on the accomplishment of preceding tasks. *Gathering referential material*, for instance, can happen at any given time in the overall job of *crafting*. *Building*, on the other hand, cannot take place without the successful accomplishment of some (if not all) of the steps involved in *envisioning*.

The builders are the actors most involved in this process. Occasionally, however, the contractors and the clients also participate, especially during the *reviewing* phase.

The succeeding descriptions draw upon materials gathered through interviews and direct observations of in-game content production. Participants were asked to elaborate on their actions in real-time and were encouraged to share physical resources they were consulting, such as sketches.

5.1 ENVISIONING

An envisioning phase is usually carried out by builders prior to building the actual content for the game. During this phase in the arc of work, builders try to conceptualise how the build will be. In doing so, they draw upon the *creation of (physical or digital) layouts*, as well as *referential materials* that are either shared by the clients or they themselves accumulate.

5.1.1 Creating layouts

These layouts constitute representations of the build and include various information in relation to the commission's functional and aesthetic specifications. Based on members' accounts, their creation draws upon physical means (such as sketching on a physical piece of paper) or digital means (3D renders through the use of Adobe Photoshop³⁵ or 3D Blender³⁶). These two methods are not used interchangeably; on the contrary, they serve different purposes and as such are adopted depending on the commissioned work the builders are assigned to do.

Layouts can also act as a resource for articulating the conducted work between the builders and the clients. More specifically, builders might use them as an initial account of how they envision the build and receive feedback (from the client) prior to moving on to the actual *building* of in-game content. This is occasioned not only by their need to know that the concept they have in their mind actually aligns with the client's interests, but also by the fact that clients usually provide vague and undetailed specifications (see chapter 4).

Georg: "You have the opportunities where there is no information yet, where people just come to you "I need this, however how this is created, I don't care, but I need it created." And in those situations, it's usually beneficial from a time point of view to create a concept art to provide to your clients in order for them to understand what you are doing and to get the feedback you need in order to adjust a project to a desirable outcome, because nothing is as bad as creating

³⁵ <http://www.photoshop.com/>

³⁶ <https://www.blender.org/>

something that the client doesn't want.” [Interview material: The participant, who was a builder, was describing how resources that are produced early in the creative process, such as the layouts, can be used for specifying whether clients are happy what builders produce.]

5.1.1.1 *Creating physical layouts*

Physical sketches (Figure 17) are used when builders need to develop a quick concept of the build’s overarching shape and of the various elements that need to be placed within. This method is particularly useful when it comes to the conceptualisation of big builds (such as landscapes), as creating digital representations via 3D modelling tools would require more computing power and, as a result, more time.

Georg: *“This mini-map is drawn and the reason for that is because this is a land mass of 3000x3000 meters. And at that point in time it’s faster to draw it than actually 3D model it.”* [Interview material: The participant, who was a builder, was explaining what a particular resource depicted and how it was produced. The resource, as shown below, was shared during the interview to better illustrate his points.]

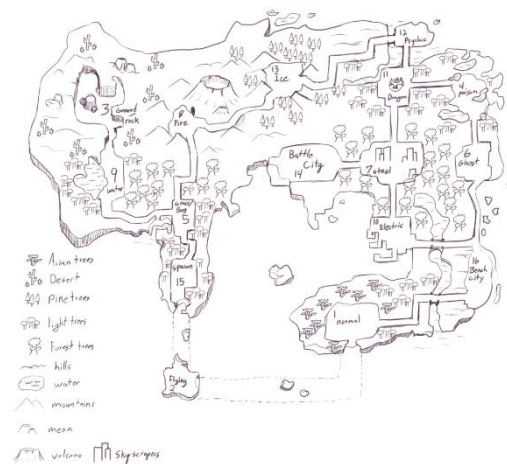


Figure 17 Sketch used for envisioning the build, which depicts the shape, the terrain and the content of the entire map under commission

Besides the overall structure of the build, layouts such as this may hold more information that is relevant to the functional and aesthetic requirements

(specified during the Contracting phase, see section 4.2). By closely examining the layout in Figure 17 it becomes evident that various complimentary details are included in the sketch: trees, rivers, mountains, volcanoes and roads (Figure 18 – left). Additionally, specific areas of the map are marked with numbers. When asked about the use of these details, the builder responsible for this piece explained that the information available in layouts do not necessarily stand by themselves; on the contrary, they act as references to the types of builds that have to be manually integrated into the final build (during *building*). These details are part of the commission’s documentation, which are stored in online repositories, such as Trello or Google Docs. By cross-checking the visualisations on the layout (Figure 18 – left) with the corresponding key (Figure 18 – right), builders become aware of the build types they have to place in the designated areas.

Georg: “The concept art is in tandem with documentation, and the documentation has a full description of what each number represents.” [Interview material: Same as the previous quotation.]



Figure 18 Layout detail: in-game elements (left) and key (right)

5.1.1.2 Creating digital layouts

Whilst such sketches provide the demarcation and the basic characteristics that need to be included in the final product, it lacks the depth and the detail that 3D renders give. One such render is presented in the following picture (Figure 19).

These are considered a better resource when it comes to creating layouts, as they are more accurate approximations of how the build would be if it was made directly in Minecraft. They provide the affordances of accurately depicting the scale of the world that has to be created, the shape of the structures and the distances between them in the three-dimensional space. In addition, builders can create them by having the Minecraft constraints available to them, while working on them. For instance, the yellow spikes in the below 3D render (Figure 19) “*indicate the maximum world height of Minecraft*” (Georg). Whilst a Minecraft world has a practically limitless width, its height is constrained to 256 blocks. By using the aforementioned yellow indicators while working in the 3D render software, they impose the game’s restrictions on themselves in order to accurately designate what is possible to achieve in Minecraft.

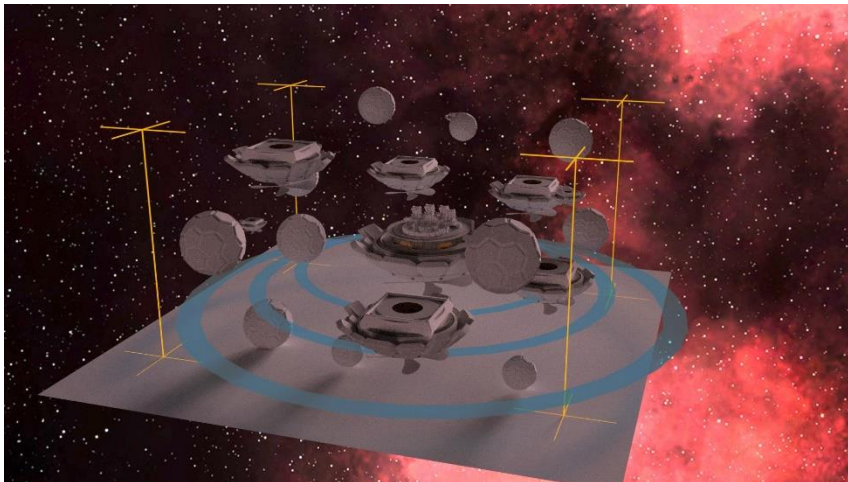


Figure 19 3D render of a work-in-progress commission

5.1.2 Creating layouts through appropriating referential materials

The job of creating the build’s layout depends on the specifications of the commissioned project (see sections 4.1 and 4.2). As was already discussed, the clients usually provide referential materials to the builders. However, it is quite likely that the latter will seek out and find their own references too. This happens generally in the contingent scenario of lacking the imagination or inspiration to work on a particular build and being in need of a visual asset that would facilitate the building process.

Max: *“If you are stuck on something or you want to get ideas, we’ll go on Google and look up pictures.”* [Observation material.]

The builders’ practical reasoning in searching for referential materials (which, at this stage, can range from real-world pictures, to artwork and even screenshots of Minecraft creations) is intertwined not only with the project’s specifications but also with their own vision of the final build. For instance, a builder, who was commissioned to create a portal area³⁷, envisioned that the final version of the build would include a witch’s castle on top of a hill. Prior to initiating the construction of this particular castle, he searched online using the query “witch castle” and his reasoning for choosing a specific picture (Figure 20) out of all the available results revolved around how the depicted build would look on top of the hill he had already created in the past.

Max: *“What I see in this picture that I like is the tree. I’ll probably be doing a lot of trees around the terrain and I kind of like the structure of the little castle here; it’s small but it’s tall and I think that would be a good representation on the top of the terrain that I’ve made. I’ll take inspiration from that and build kind of like something similar to that.”* [Observation material.]



Figure 20 Example of referential material used while envisioning a witch castle on top of a hill

³⁷ Portals are specialised builds that act as the door to a mini-game; players walk through the portals and are then teleported to the mini-game itself.

An important note is that these materials are not only accessed online by the members while they are in the process of *conceptualising the product*; on the contrary, it became evident that they also store them either locally (on their computers) or in online repositories (such as Dropbox or Google Docs). That was quite prominent in the context of teamwork, where team members used shared Dropbox accounts for having access to the same resources.

5.1.3 Recapping envisioning

5.1.3.1 *What is accomplished through envisioning*

Envisioning is an activity leading to the creation of a number of build layouts that inform the subsequent activities of creating Minecraft content (such as *terraforming, preparing* or *building* in-game). These resources have a multitude of uses: (1) providing the structural design of the work-in-progress build (by demarcating the various areas of the game); (2) enumerating the functional details that need to be incorporated in the build (such as roads and the placements of cities, Figure 18); and pinpointing the aesthetic elements that need to be implemented (such as trees and rivers, Figure 18 – right).

It should be mentioned that this activity is not a necessary step in *crafting content*. Some participants reported that they preferred to start *building* straight-away, as a planning phase was undermining rather than facilitating their work.

Josh: “I do not need the planning, because it limits me more than actually does anything good.” [Interview material: The participant, who was a contractor, was discussing how he bootstraps his creations and how planning undermines his creativity.]

5.1.3.2 *How envisioning is coordinated*

Based on observations and members’ accounts, the construction of build layouts does not involve coordination between members. It is mostly a matter of gathering referential materials (real-world pictures, artwork, and examples of other Minecraft builds) that either reflect the commission’s specifications or relate to the builders’ own goals in terms of building. Even so, they become resources that facilitate coordination in a number of activities, such as: (1) how

builders coordinate their work based on build layouts and (2) how these layouts come into play in articulating progress to clients.

- As mentioned above, build layouts constitute representations of work-in-progress build, which include indications of both the functional and aesthetic details that need to be included in the build. These indications act as reminders of what the builders have to do for the completion of the commission and come into play in subsequent tasks (see section 5.3.1).
- These layouts are also used for accounting for the already conducted work. Builders share the physical or digital sketches with the latter in order to receive feedback in terms of their progress, whether their vision matches the client's vision, and whether they can proceed with the plan as-is or make changes (a process that is further discussed under *reviewing*).

5.2 TERRAFORMING

Terraforming is “*building everything that’s nature*” (**John**) or, simply, the world of the game. Even though the game itself provides the tools for generating massive worlds that include a variety of different landscape types (usually referred to as biomes, e.g. deserts, hills, etc.), members reported that these automatically generated lands lack realism and detail. This occasioned the emergence of a more elaborate terraforming process, which takes place outside of the game and draws upon a combination of software tools, such as World Machine and World Painter (see section 4.3).

John: “The terrain Minecraft generates doesn’t make a lot of sense. So, sometimes you are walking through the desert and then you reach the end of the biome and it’s just jungle from there on.” [Interview material: The participant, who was a builder, was explaining the use of terraforming by drawing upon examples of bad in-game terraforming outcomes.]

There are commissions where the only deliverable clients ask for is a single world. In these cases, external terraforming (as discussed here) is the only

crafting activity members attend to. However, when the construction of a world is only one part of a broader project, subsequent in-game building tasks depend on its timely completion, since builders will not have access to the final world where *building* is going to take place. As a counter-measure to this dependency to terraforming, members occasionally make use of secondary worlds, which constitute repositories for experimenting with in-game *building*, creating temporary builds or working simultaneously with the terraforming expert in order to save time³⁸.

Even though building content alongside terraforming is indeed possible, it does not mean that builders' and terraformers' work are not interdependent. On the contrary, there are in-game builds that are contingent to the structural layout of the land and as such cannot be created prior to terraforming's completion. Alongside that, builds eventually have to be placed on the land, a matter that is not always as simple as merely copying them from the aforementioned secondary worlds and pasting them into the terraformed world. As is discussed later on (see section 5.4.4.2), adjusting adjacent content is one of the most time-consuming jobs in in-game *building*, as it demands a lot of manual labour.

John: *"I am at the point, within the next day or two, to start exporting the terrain into Minecraft, which is a little bit why it's been very slow on the server. We are not building anything. Everyone is just waiting for me to finish."*

[Observation material: The participant, who was a builder, was explaining how the build he was working on when the observation took place was related to a milestone in the overall progress of the project.]

The accomplishment of this activity leads to the production of a massive Minecraft landscape (Figure 21) that constitutes either (1) the product the client commissioned or (2) part of an overall project that is further developed via in-game *building*.

³⁸ The use of these secondary worlds and the ways in which builds are stored in them is further discussed in the following section, *preparing for in-game building*.



Figure 21 Example of a terraformed landscape, which was produced through the use of external to the game software

In addition to external terraforming, manual in-game terraforming is another activity Minecraft builders occasionally attend to. Whilst members refer to both of these activities as “terraforming,” the one discussed here draws upon methods that take place outside the borders of the game³⁹. Accordingly, this section focuses on the resources and the processes contributing to its accomplishment.

A final note needs to be made with regard to the programs used during this job of work. Even though they are developed by third parties (usually members of Minecraft’s creative community), they do not constitute static resources that members use as-is. On the contrary, indirect collaboration between software developers and builders is possible, with the latter asking for bespoke implementations that facilitate their needs in terms of generating content.

John: “I sent a message to the guy who makes World Painter and I said that the feature that I would really like is to be able to... stick in another height field and say ‘What’s high, I want grass, what’s low, I want something else.’” [Observation material: The participant, who was a builder, was explaining how specific features in the tools he was using were implemented because of his creative needs.]

³⁹ Internal terraforming falls under the practices of *building* in-game content (see section 5.4)

5.2.1 Creating height-maps: digital representations of the world

During this step, terraforming experts create digital representations of the commissioned world. Essentially, these digital representations are height-maps⁴⁰ (Figure 22) and differ from any layouts produced during *envisioning*, as they are actionable resources that are directly transformed into in-game content (as discussed under *transforming height-maps*).

The production of said resources draws upon World Machine, the functioning of which revolves around the specification of variables and functions (referred to as “macros” by the members) in a similar manner as programming. Variables correspond to different geographical elements (e.g. mountains), while functions are applied to variables in order to diversify how they look or combine a number of variables in order to produce a land that unifies more than one of these elements (e.g. a seaside with mountains).



Figure 22 Example of a height-map of a coastline

Whilst the height-map itself cannot be imported as-is into Minecraft, it constitutes the basis on which terraforming experts work in order to create a Minecraft world. More specifically, they transform the height-map into a Minecraft world by “painting” it with content via World Painter, as discussed in *producing the Minecraft map*.

⁴⁰ A height-map is a greyscale image that depicts the height variation of a landscape, with black being the minimum height of the represented map and white being its maximum height.

5.2.2 Evaluating height-maps

Following the production of the height-maps is an evaluation process that aims to pinpoint flaws. This is an important step as these height-maps are going to be turned into the land of the game. As such, evaluating them at this early stage helps in fixing issues that would be hard to amend later on in-game, as it would demand many hours of manual labour⁴¹.

Spotting errors on height-maps takes place by scanning the depicted landscape for anomalies, such as the edged sand dunes shown in the photo (Figure 23). The reasoning behind this judgement is based on the expert's understanding of the land (developed during *envisioning* via the consultation of referential materials) and of the goals behind each project.

John: "The dune shouldn't have a corner in it. So I am double checking to make sure everything is looking right."

[Observation material.]

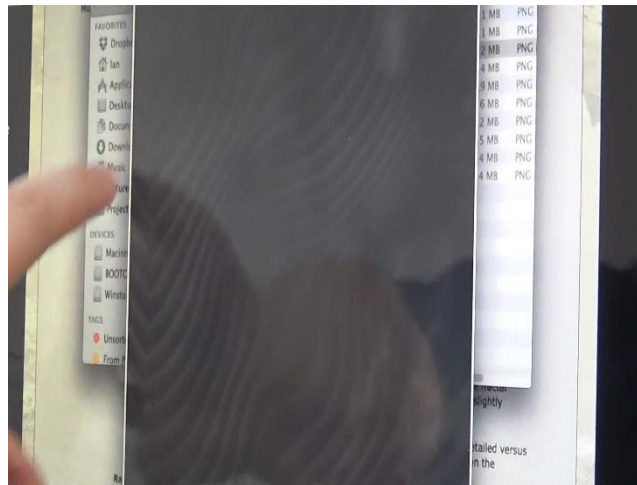


Figure 23 Spotting a flaw on the height-map

Of course, this is an iterative step that is repeated as many times as it takes to fix any of the errors terraforming experts spot. Besides rerunning the aforementioned algorithms for the production of height-maps, other software tools such as Photoshop might be used for fixing errors. In doing so, members import the height-map in Photoshop and manually work on the area's errors.

⁴¹ The significance of working on a land of this size will become clearer under *building*.

5.2.3 Transforming height-maps into Minecraft content

This activity leads to the creation of an actual Minecraft map. Essentially, the height-map is transformed into a Minecraft world by first *painting* it in World Painter and then *evaluating* it inside the game.

5.2.3.1 Generating the in-game map

This task draws upon World Painter; a program that allows the importing of any height-map and painting them with materials and items that correspond to in-game content, such as coloured blocks, trees, water or any other user-generated item. An example of how a height-map was translated into an in-game map is depicted in Figure 24.

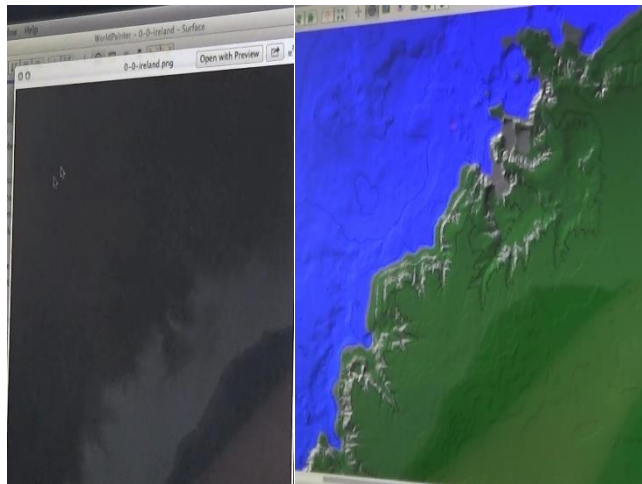


Figure 24 How a height-map (left) is translated into World Painter (right)

The chosen materials for painting the height-maps are based on the preceded *envisioning* too. For instance, an expert that participated in this research elaborated on the fact that he used lighter stones in areas that resembled a Mediterranean country than those that stood for Northern countries (such as Norway).

5.2.3.2 Evaluating the generated map

Once the detailing is complete, maps are first exported into a .mca file⁴² and then imported in a Minecraft server. Further evaluation of the generated map is possible, which now takes place inside the game. During this evaluation step, members look not only for structural errors (as was the case with height-maps);

⁴² This file type corresponds to a Minecraft world file format.

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they actually navigate through the land, trying to get a sense of the functional and aesthetic standards they aim for. This can become a collaborative effort too, as the map is online and available to all the members of a team, instead of just the terraforming expert. Such a case is exhibited in the following sequence (Vignette 4), where the map generator (John) invited another builder (Tim) to join him in evaluating the map. In this instance, the two professional builders were part of the same team and were collaborating on the creation of a Minecraft world that would have diverse landscapes and cities. Given that the formation of the landscapes was a significant part of the project's specifications, evaluation was played an important role in the overall process.

Vignette 4 Evaluating the mountain tops

Tim: *Joined the game.*

John: *"Tim! Come here. See if this is steep enough."*



John: *"Still a bit too noisy though."*

Tim: *"Is there a point on which it starts from 32?"*

John: *"No, I think the lowest point is around 40. Spawn is down there. If you re-tp this world."*

Tim: *"But basically yeah, that will feel like a long ass stride through the mountains."*

John: *"Oh yeah and I will probably make ranges running alongside."*

Tim: *"It's awesome John. It's how I would've imagined it. The feeling of walking up a mountain, looking back, not seeing the bottom and still tons of climb up higher."*

John: *“Tim, yay! I am glad! And there’s even room to build across on top of the highest peak, or even a shack.*

Tim, that’s the final draft I think. I am going to turn on terracing very hard with a map that puts it only in select spots. So here and there you will have some very sharp ledges and turn down the noise ever so slightly. With those two changes, it’s done.”

Tim: *“So, it’s what you’re going to do for the final draft? Or this is the final draft I’m looking at?”*

John: *“This is the final -1.”*

Tim: *“Ok, I get it.”*

Tim’s evaluation of the terrain mainly revolves around the feeling of playing in it. Being able to simulate the feeling of being in such a landscape and wandering around was part of the specifications, as reflected in Tim’s comments upon navigating through the landscape and walking through it (“the feeling of walking up a mountain, looking back, not seeing the bottom and still tons of climb up higher”). Additionally, Tim considers the available “room to build across on top of the highest peak or even a shack,” which accounts for the intention of performing in-game building in specific areas of this mountain. This is linked with the immediate next steps in the project (that of in-game building) and it showcases the considerations of those involved in doing it as to the space they would have for creating content on the landscape.

This judgement is reached upon exploring the land himself, which is achieved by walking around the mountain tops and descending to its roots. These mechanical actions are constantly at play during in-game evaluation and will become relevant during in-game *building* too.

Besides the invited builder’s comments on the map, the one who generated it in the first place accounts for the flaws in the map (“still a bit too noisy though”), as well as for future work (“I am going to turn on terracing very hard with a map that puts it only in select spots”). This is an important detail, as the builders’ job (and the overall progress of the project) depends on terraforming’s completion; before that, Jim (and the rest of the team) cannot start working directly on the land, build content in it and evaluate how it will look in-game.

This is another indication of terraforming's iterative nature; collaborative evaluating, as exhibited in this vignette, concludes with the specification of (1) the changes that were made since the previous iteration of the mountains and of (2) the changes that have to be made towards the finalisation of this region.

5.2.4 Recapping terraforming

5.2.4.1 What is accomplished through terraforming

This activity's completion results in the creation of a landscape that is either going to be delivered to the clients as the final deliverable of their commission or is going to be further populated with content during *building*. In the latter scenario, terraforming becomes a crucial step in the overarching job of commissioning and creating a Minecraft map, as its outcome becomes a resource for in-game *building*.

5.2.4.2 How terraforming is coordinated

Given that this job of work is carried out via the use of specialised software (World Machine and World Painter) external to the game, it is conducted by individuals who are experts in using them (see section 4.3). Coordination, at this stage, happens mainly between these individuals and the builders; the former need to account for the progress of their work, as the latter's tasks (the population of the world with in-game content) depends on the successful construction of a Minecraft world. This draws upon either (1) terraformers sharing (verbal or textual) accounts about their work or (2) by exporting work-in-progress versions of the world and cooperatively evaluating them with builders (see: Vignette 4). As revealed through the conducted fieldwork, the criteria for evaluating the land revolved around the project's specifications. The builders' goals and expertise come into play here, as they assess the produced world based on the gameplay modalities it can accommodate (which are driven by the project's specifications), as well as space availability for performing their own creative work.

Coordination actions can be either coincidental or intentional. In the example presented in Vignette 4, the terraforming expert and a builder coincidentally happened to be inside a game world that the former had just finished working on and uploaded to the team's server. Examples of intentional coordination in

relation to giving updates to conducted work will be discussed in subsequent sections of the work of crafting.

5.3 PREPARING FOR IN-GAME BUILDING

Upon having a vision for the build and an in-game world to work on, a preparatory phase is initiated. During this phase, builders set the groundwork and gather all the necessary resources for in-game *building*. The first matter they attend to is *deciding on the building task* they will work on during their building session. Additionally, they *gather the in-game referential material* that will be appropriated during *building*. The remaining two steps revolve around *creating the material palette* (a set of the materials that will inform *building*) and, lastly, *demarcating building grounds* (the borders in which they have to create the commissioned build).

5.3.1 Deciding on the building task

The first matter builders attend to while *preparing* for in-game *building* is to decide on the building task they are going to work on. Three distinct cases are unpacked here, each of which has its own characteristics:

1. *Resuming a building task;*
2. *Collaboratively deciding on the building task;*
3. *Choosing a building task by checking the commission's specifications.*

5.3.1.1 Resuming a building task

Builders can resume a building task they or members of their team left incomplete in their previous building sessions. This draws upon: (1) recollecting what has to be done; (2) checking the specifications of the build in order to make sure nothing is missing; or (3) using ad-hoc systems for keeping track of unfinished or future work. One such system is presented in Figure 25, in which case the depicted pink blocks delineate where roads need to be placed (a task that the involved team had not yet accomplished).

John: "We've tried various systems to make it easier for one person to pick up where another left off. Cid and I have agreed on a process for expanding pink lines into real roads."

[Observation material.]



Figure 25 Example of demarcation for future work; annotating the placement of roads

Another matter relevant to *resuming a building task* is the occasional briefing that takes place when more than one builders work on a project. In that case, it is possible for those involved in the commission to brief each other on the work they had conducted in the absence of others, either via Skype or in-game

John: “I wake up in the morning for a Skype that[’s] saying ‘John, go check out on the workshop map ; I’ve messed around something new, I am curious what you think about it.’” [Observation material.]

5.3.1.2 Collaboratively deciding on a building task

It is also possible for builders to assign building tasks to each other in real-time while being logged in and working on the same server. This is initiated either by an individual (the requester) who wants to work on a particular task or by any of the available team members, who *suggest a task* to the rest of the team. Part of this job of work draws upon *establishing the specifications* for the suggested task. These two activities are further discussed below.

Suggesting a task. Such a case is exhibited in the following sequence (Vignette 5), where the requester (Cid) states that he wants to perform a specific type of job (terraforming). His request is then picked up by one of the two logged-in team members (Roy), who replies positively by saying that he does have a task that meets his request (“something to terraform”). The actual delegation however is carried out by both Roy and John (the third team member), who establishes whether Roy’s suggested task warrants further work. All three of

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them were part of the same building team, which, as was previously stated (see Vignette 4 on 101), had the goal of creating a realistically looking world with diverse landscapes and cities.

Part of suggesting a task is providing a reason for the necessity of carrying out this task. This can become a collaborative matter when the suggested task was initiated or was part of the work someone else conducted. Drawing upon the same sequence (Vignette 5), John states his belief that “that was not a bad looking cliff,” without objecting to further terraforming it. On the contrary, he acknowledges the lacking characteristics of the existing landscape by accounting for his own terraforming work (demonstrated through the reference to height-maps; he was the one who terraformed the existing landscape through World Machine and World Painter).

Vignette 5 Receiving a building task from a teammate

Cid: *“I need something to terraform.”*

Roy: *“I’ve got something for you to terraform.”*

Cid: *“Show it to me.”*

Roy: *“This way.”*

Cid: *“Yeah, I can be productive again.”*

John: *Follows them.*

Roy: *“Can you make this cliff like actually look like a cliff instead of like a gradual sloping hill, but not by scrapping the houses?”*



John: *“I do think that was not a bad looking cliff, but alright.”*

Roy: *“I do not like it. It’s... It needs at least a little bit overhang.”*

John: *“Okay.”*

Roy: *“It just looks like a... hill.”*

John: *“The constraints of height-maps I am afraid.”*

Establishing the specifications for the task. The work of delegating a task does not stop when the builders are assigned with one. Those that provide them with something to build can also engage in pinning down the specifications for the task. The following extract exhibits such a case, where the Roy and John collaboratively establish what Cid should do in terms of fixing a hill. It is evident that they raise:

- The functional characteristics for the job; the hill looks very simplistic, which becomes problematic due to the fact that it sits in a very prominent position in the overall build (“right in the middle of the town”). Due to its visibility, it is considered necessary to change it.
- The aesthetic characteristics; the hill “needs at least a little bit of overhang and the inclusion of “spruce” leaves.
- Exact steps in dealing with this task (“sculpt it out of rock”).

Vignette 6 Establishing task specifications

Roy: *“Yeah, I know, I know. But I mean it is right in the middle of the town; it needs to be at least a little bit prettier than the average.”*

John: *“It needs sprucing up.”*

Roy: *“Yes, it needs sprucing up.”*

Cid: *“You sure you want me to spruce it up?”*

John: *“Actually, if you could keep it simple.”*

John: *“Sculpt it out of rock and then just paint it with spruce leaves.”*

Cid: *“How like sheer do you want this thing to be?”*

Roy: *“It doesn’t have to be super sheer; just a little bit of underhang would be nice.”*

5.3.1.3 Choosing a building task by checking commission’s specifications

One of the main approaches in deciding on what to work on is performed by crosschecking with the commission’s specifications (see *documenting the*

commission under contracting) in order to establish whether further work needs to be made. The resources employed in storing these details vary depending on the organisation the builder is part of and the already established systems for documenting commissions and accounting for progress. Trello, for instance, is one such system, where members use check-lists for coordinating what needs to be done (or what has already been done).

The accomplishment of this step can be twofold:

- Determining what is missing from the build;
- Deciding on what to work on next (in which case, another *building* cycle is initiated).

An instance of *checking commission's specifications* was witnessed happening during an in-game building session, which is exhibited in Vignette 7. Whilst the exact resources the builder was using at that point in time were not shared, he elaborates on the fact that he was indeed looking into the client's "wish-list" of the things that need to be integrated into the game (which is part of the specifications of the commission). He then expands on the exact details that are missing from the build: a few functional characteristics regarding the map's gameplay affordances ("crates... a place where there is a bunch of chests that people can open," "place for people to do forging, enchantment and crafting"), accompanied by aesthetic elements (the placement of trees).

Vignette 7 Crosschecking for remaining requirements

Georg: *"I'm just looking for some information on what stuff I need to implement next."*

Panos: *"What do you mean by that?"*

Georg: *"The client has a wish-list that I need in order to.... He needs to have a certain amount of requirements. For example, he needs a place for crates and that's one that I need to do. Like, a place where there is a bunch of chests that people can open and then get [in-game items]. I need to build that. And then I need to make some kind of place for people to do forging, enchantment and*

crafting. Some trees. That's what I'm going to do next: trying to figure out where I am going to place those."

5.3.2 Gathering in-game referential material

Besides the referential materials that were mentioned in previous sections (those provided by the clients while *contracting* and those accumulated by the builders during *envisioning*), another type of material comes into play during this activity: in-game assets (Figure 26) that are directly adapted and appropriated while *building* Minecraft content (see section 5.4.4).



Figure 26 Example of in-game referential materials

These materials are either parts of or entire builds the builders had worked on in the past and stored in order to reuse them in future commissions. By doing so, they manage to save a lot of time, as they do not have to recreate assets from scratch every time they have a new commission available. While gathering them, builders first visit the areas where these materials are stored and then make copies of them in the site where the actual *building* will take place. This way, builders manage to have all the necessary in-game content available to them in close proximity to the building site, as demonstrated in Figure 27.

Georg: *"We have template of trees. We created or acquired them over the years, so it's kind of like nice to be able to use them now whenever we need. Whenever we need a pine tree, do you really need to make 25 new pine trees every time you need a pine tree? No, you don't."* [Interview material: The

participant, who was a builder, was describing the reason behind reusing already made assets.]



Figure 27 Example of a build surrounded by its referential materials as situated in the overall world a builder used for creating in-game content

What is of interest is not only the fact that such materials are used, but also the way they are stored. One way of doing so is by scattering any previous builds around the world the builders use for in-game *building* purposes (as shown in Figure 27). In this figure, besides the encircled area where a building session took place, there are plenty of other in-game creations that are laid around. Accessing these areas is either accomplished by memorising what lies in the vicinity and flying to the intended destination by noticing what was in the surroundings or by using warp points⁴³ in order to directly teleport on that area.

Georg: “I do not have them actually organised; I don't. Because it's like memorising; if you know that the statues are over here, if you memorise that you have your little castle over there and then you can... That's kinda like you create your own landmarks.” [Observation material.]

Another approach is to keep copies of previously made builds in separate Minecraft worlds (as the one depicted in Figure 28), where builds are categorised in different types and are clearly demarcated by being placed inside square-shaped spots. Members referred to these worlds with different names

⁴³ The mechanism of placing warp points and teleporting directly to them is achieved through add-ons to the original version of the game and is used extensively by many members of the creative community.

(e.g. workshop, archives or template area)⁴⁴. However their utility was the same across the teams or the individuals who participated in this research.

John: “It was a world where we stored buildings that weren’t going to be copied into the real world.” [Observation material.]



Figure 28 A snapshot of a storage world for unused builds

5.3.3 Creating material palette

Another step that takes place right before initiating the building process is composing a material palette (members’ term) (Figure 29), which is reminiscent of the colour palette designers and painters use during their own creative practices. Essentially, the material palette facilitates in developing an understanding of whether the colours the builders want to use during in-game *building* actually match with each other. However, that is not its only function; it also serves as a means of having constant and easy access to blocks.

Spence: “You can kind of visualise how it [the blocks] might look in a build and it’s also easier to pick blocks. Instead of going back into your inventory and clicking your blocks out, you can just walk up and just middle click with your scroll wheel and it’ll just pick the block up into your hand. It helps speed stuff a lot.” [Observation material: The participant,

⁴⁴ For clarity, the convention of referring to these worlds as “workshop” is going to be adopted from here on.

who was a contract, who explaining the ways in which he chooses or switches between blocks while building.]

There is no standardised method of creating a material palette, as they might differ in what is included in them or how the blocks are arranged. In one case, the palette was a gradient of all the green-coloured blocks in the game, as that matched the commission's specifications. Towards that end, the builder put together a palette that represented the various shades of green in the game, starting from the lightest one. Others included in the palette not only coloured blocks, but also other types of materials, always depending on what they wanted to be using in their build; slabs, stairs or wooden sticks (Figure 29).



Figure 29 Example of a material palette

A material palette can be one of the very first things that builders create prior to building, hence it being part of the preparatory phase prior to *building*. In spite of this, it is not a static asset, but rather something that changes dynamically as building progresses.

Georg: “It is “flexible and changes depending on the build stage and the part of the build.” [Observation material.]

5.3.4 Demarcating building grounds

The last preparatory step prior to *building* is setting up the perimeter of the build. This is an important step when it comes to projects that have predefined dimensions, which, as was discussed in contracting (see section 4.2), can be part of the specifications of commissioned work. Who is doing the demarcation

depends on the type of the commission and how it is handled by the involved parties. Two separate cases of such an action taking place were witnessed during in-game building sessions:

- A builder demarcating the building grounds of the build he was working on (Figure 30);
- A contractor preparing the building grounds of a specific commission (hub) by demarcating each individual plot (Figure 31).

In the first instance, the builder gathered all the referential material he wanted to use for the build and then, right before initiating *building*, he created a square shaped box on the ground that matched the size of the build he was commissioned to create (150x150 blocks).

Georg: “So this is pretty much the size of what we are going to do. And from there, I am going to move on.” [Observation material.]



Figure 30 Demarcation of the building grounds

In the second case, the build was a hub, constituting of 8 distinct plots, each of which was intended for accommodating the creation of a portal to a mini-game. In the picture below (Figure 31), it is possible to discern that two builds had already been created side by side, while two other plots remained empty. Those empty and clearly demarcated plots were where subsequent builds would be placed. This particular arrangement of plots was prepared by the contractor (and owner) of the commission, who then *shared* it with the union he was a member

of (see section 4.3). Those that *claimed* the plots and started working on them were builders, members of the same union.



Figure 31 Pre-demarcated building plots as created by the contractor of a commission

5.3.5 Recapping preparing for building

5.3.5.1 What is accomplished through preparing for building

Through the successful completion of this activity, builders decide on the exact task they are going to work on. In addition, they assemble a number of resources that are pertinent to in-game building, such as:

- In-game referential materials;
- The material palette;
- The demarcation of the area where *building* will take place.

As is the case with most of the activities involved in crafting content, *preparing* is re-enacted every time builders have to work on a new building task. This might require the need for finding and appropriating new referential materials, as well as updating the material palette.

5.3.5.2 How preparing for building is coordinated

Given that this job of work is a preparatory step towards in-game *building*, those that are involved in it are the builders assigned to the commission. Regardless of whether one or more builders are working on the same project, they have to coordinate with each other in order to:

- Work on something that is yet to be finished;

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- Make sure that the assembled resources match the commission's specifications.

The first is achieved via a number of methods, which are used by the builders for: (1) accounting for the work they had conducted in the absence of others; and (2) resuming unfinished tasks. The simplest of these methods is the exchange of accounts of previous building sessions, which brief the rest of the team with regard to how the site of work has changed. This can happen either by coincidence in-game (when more than one builder meets online to build) or intentionally via asynchronous means of communication (e.g. Skype) where builders leave messages to others. The latter takes place when builders worked on something that someone else had previously started or when they want to receive feedback regarding their progress on a particular piece.

Another method for coordinating tasks and informing of conducted work is via the use of bespoke in-game annotation systems. A particular team established the use of coloured-blocks to point out work-in-progress builds or to annotate where a specific type of content had to be placed in the future.

This discussion is relevant to the software tools that are used for *documenting* the commission and tracking builders' availability, as was discussed in the previous chapter (see section 4.3.3). The methods that were discussed in that chapter revolved around the use of productivity software (such as Google Docs, Dropbox and Trello) for: (1) storing documents related to the commission (clients' referential materials, specifications, etc.); (2) making the commission available to builders; and (3) making the specifications available to builders. These details come into play during *preparing* too, as builders consult the available documentation in order to realise what remains to be done and coordinate their actions so as to: continue working on the build, choose new building tasks, search for new referential materials, etc.

Georg: *“You have the original reference itself, you have all the other resources that are available and the Trello is just a way of keeping track of how things are going. And on top of that we also use chat groups to communicate how things are going.”* [Interview material: The participant, who was a

builder, was expanding on how Trello fits into the whole process of communicating and sharing resources in a team.]

Concerning the assemblage of referential materials and the rest of the resources that are necessary for initiating in-game building, it draws upon visiting previous building sites or secondary worlds (e.g. workshop) in order to copy those that are relevant to the current commission. These materials are not picked randomly; on the contrary, builders first consult the specifications and the plans (if there are any available) and based on the information available in these assets (types of builds to be included, client's aesthetic preferences, etc.) they pick the relevant in-game materials.

5.4 BUILDING

The practices, activities and steps discussed up to this point lead to the assemblage of a number of resources (layouts, sketches, external to the game referential materials, Minecraft worlds, etc.) that partake in setting the stage for the construction of in-game content. *Building* concentrates on the adaptation of all of these resources towards the production of the build that constitutes the final deliverable of the commissioning process. Effectively, the outcome of this practice is exactly that: a Minecraft map that is then passed on to the clients (see chapter 6).

During *building*, work predominantly takes place inside the game, and it is a practice that is carried out solely by builders. However, contingent scenarios might occasion revisiting *envisioning* or *preparing*. For instance, it is possible for a builder to pause their in-game building and switch to Google (another site of work) to search for referential material (an activity that belongs to the overarching practice of *preparing for in-game content*).

Another matter that warrants further elaboration is this practice's iterative nature. The build is brought together by the builders through the construction of individual pieces (which are referred to as "building blocks"⁴⁵). The activities

⁴⁵ This constitutes a convention that is adopted for the needs of this thesis. Members tend to refer to all in-game creations as "builds." Whilst adopting the same terminology would pay tribute to members' methods, it was deemed preferable to make this distinction between building blocks (resources used during the work) and builds (the outcome of the work – deliverable to the clients) in order to avoid confusion.

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involved in creating these building blocks are: *creating the skeleton* of the block; *detailing* it; *evaluating* the outcome; and finally *integrating* it to the overall build. Although it is possible for all these activities to be successfully conducted in a sequential order, the fieldwork revealed that in many cases failure of accomplishing the desired result in any of them steered *building* towards previous steps in the overall practice. For example, if a building piece does not pass evaluation, builders might return to *creating the skeleton* or *detailing*, in order to change the way it looks and *re-evaluate* it.

Referring to the outcome of these *building* cycles as “pieces” or “building blocks” might be an understatement regarding their size or their complexity. Essentially, building blocks vary considerably, ranging from simple decorative elements, walls, houses, towns or even the final version of the commissioned build. Examples of a few building pieces can be found in Figure 32.

While the details of how building blocks are created and appropriated towards the construction of bigger blocks are explored in the following sections, the above pictures illustrate that a singular referential material (Figure 32 – top left) was appropriated towards the construction of a pillar (Figure 32 – top right), which was then combined with another referential material (Figure 32 – bottom left) in order to create a wall piece (Figure 32 – bottom right).



Figure 32 Examples of building blocks

5.4.1 Creating the skeleton

This is the first activity entailed in *building* in-game content and revolves around the construction of the layout of a building block. In contrast to the layouts that were created during *envisioning*, these foundations are digital materials. As such, builders can directly act upon them and shape them as they wish in-game. Given that each build type differs significantly from each other, the layout might constitute the foundations for a build, the main shape of a decorative material or the curves and the structure of an organic build.

The following subsections elaborate on how this layout is *constructed*, but also on how builders occasionally create multiple layouts and *compare* them in order to decide which one meets their goals.

5.4.1.1 Constructing foundations

Having already picked a location to start building, builders initiate the construction of the foundations of the piece. During this stage, the builders' goal is not to make detailed builds with diverse materials and aesthetic elements. On the contrary, they pursue the definition of the structural design and layout of the building block.

Figure 33 illustrates the procedural creation of the skeleton of one building as it took place during an in-game building session. The materials the builder employs in creating the skeleton constitute of a wooden block that is used for creating the main layout of the build and matches the surrounding buildings. Also, he places a number of light purple blocks for delineating the exterior walls of the ground floor of the build. The different iterations this particular builder went through in order to reach the final version of the skeleton are also depicted in the image

Upon having the skeleton constructed, the builder has effectively defined a few parameters that are relevant to the build, such as:

- Its height;
- The parts it is going to constitute of;
- The number of floors and rooms;
- The main material and colour it will be made of.

These details become the basis for the subsequent activity of *detailing* the build.



Figure 33 Procedural creation of the skeleton of a build

5.4.1.2 Comparing alternative foundations

Part of the work of *creating the skeleton* of a build is having alternative foundations for comparative purposes. What is achieved through this is making informed decisions on which of the available solutions to apply to the final build. One such example is presented in Figure 34. In this scenario, the builder is constructing the layout of the front of a temple. As seen in the picture below,

the right side of the entrance to the interior of the temple is composed of a different set of materials than the left one. The builder used two different materials intentionally in order to evaluate how each one of them looks like in the broader context of the build he was working on, and picks the one that best serves the goals of the project. Whilst the materials might indeed be different, the colour of the block is the same (grey), which hints at the fact that the builder had already decided on the colour but not on the final material.



Figure 34 Working and comparing alternative foundations

5.4.2 Detailing

Once the skeleton of the build is fully constructed, builders start adding details to it. This is the step in the overall *building* practice that aims at implementing the functional and aesthetic specifications of the build (see section 4.2). The methods employed in doing so, as revealed by the fieldwork, are the following: *applying layers* on walls and builds; trying out different *colourings* for the builds; and finally *placing decorative elements*. In doing any of these, builders make use of a variety of tools, ranging from techniques that are afforded by the original version of the game (e.g. manual block placement), to third-party solutions (e.g. World Edit, Voxel Sniper⁴⁶, etc.).

5.4.2.1 Adding depth

This detailing method is applied on flat surfaces (e.g. walls) in order to give them depth and a 3 dimensional feeling. Even though individual builders might

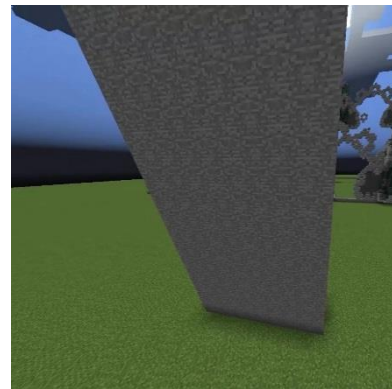
⁴⁶ Voxel Sniper is a tool used for direction manipulation or creation of in-game content. <https://dev.bukkit.org/projects/voxelsniper>

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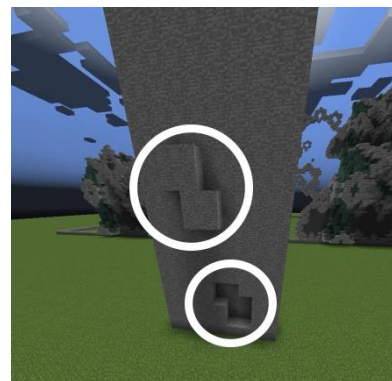
perform this task in unique ways that match their personal artistic style, there are specific techniques that are well-established amongst the members of Minecraft’s creative community, which bear the names of those that first came up with them.

A simple example of *layering* is presented here, which demonstrates a member applying a number of layers on a flat wall (which he refers to as “excursions,” “insertions” and “shifting”).

This is how the wall would be prior to any detailing being applied to it. Essentially, while *creating the skeleton*, the builder would simply put together a flat wall, constituted of a single material and having the dimensions that match with the specifications of the building piece under construction.



The first types of *layering* that can be applied to the skeleton of the piece are insertions or extrusions. Builders essentially create holes on the wall by destroying blocks in specific areas and then putting the same blocks in exactly the same position behind the surface of the wall (bottom annotation). Similarly, builders can create extrusions by placing blocks on top of the wall’s surface (top annotation). The result would be a wall with elements that extend from its surface.



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Another approach to *layering* is “*shifting*” (**Georg**) an entire part of the wall forwards or backwards, as depicted on the corresponding picture on the right. By doing that, builders transform the wall into a “3-dimensional shape, instead of more kind of like a 2D object” (**Georg**).



By combining the above techniques, the builders can further diversify how a surface looks. By incorporating these techniques in their method of *detailing* a building block, builders manage to give an organic feeling to their creations by making it “*more alive and interesting*” (**Georg**). On top of that, this kind of editing is usually used when a builder has to create builds with curves or organic shapes in it.



The above example offers an initial understanding of how *layering* is done. However it constitutes a plastic case study devised by a participant in order to elaborate on what he meant by “insertions” and “extrusions.” The following vignette (Vignette 8) demonstrates an occasion where these techniques come into play organically in-situ, during an actual building session. Here, the builder (Spence) is working on a wall, which is only a small part of a bigger build. This build was specifically created by John in order to demonstrate the gradual process of detailing a flat wall. The extract starts with his comments on the aesthetic details of the wall (“it looks very flat”), which occasions his intention to change it.

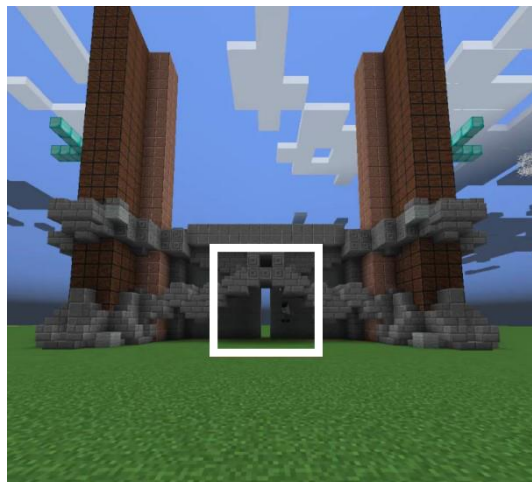
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Vignette 8 Adding depth to a wall

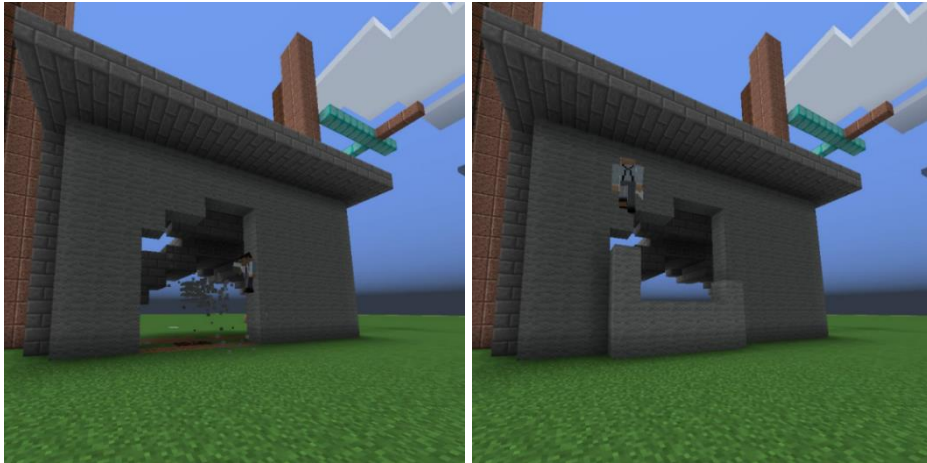
Spence: *“One thing I have to note is that I added this light grey area at the bottom, which looks very flat behind this sloping mess of blocks I’ve got.”*



Spence: *“So, what I am going to do [is] from the centre point is actually just shape the wall a bit and add some more of an interesting depth to it.”*

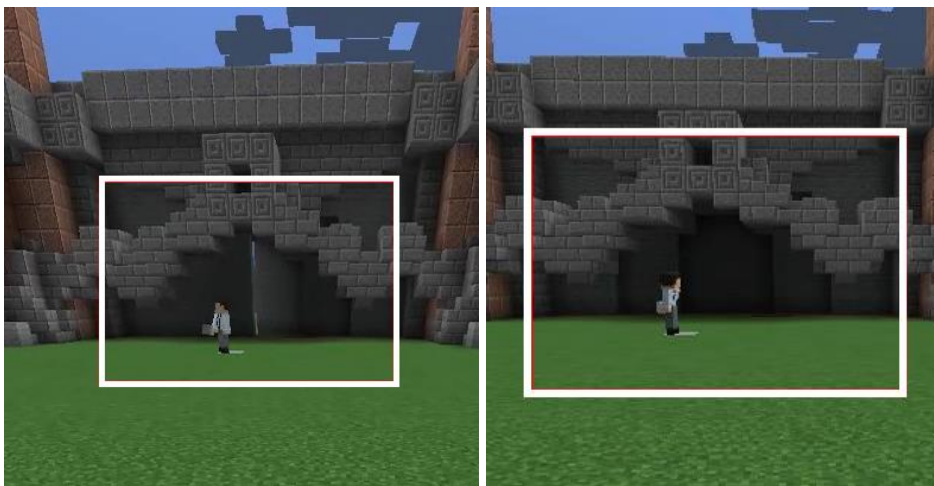


Spence: *“So I am going to push it back in certain areas to create more of a negative depth and mess with the lighting a bit more at the front.”*



Spence: “So, I’ve taken the flat wall, added a bit of shaping to it and now if I...”

He goes to the central reference point of the build, copies the right side of the build, flips it and pastes it.



This is a relatively simple example of detailing by creating multiple layers on a wall. Spence’s goal is to add “negative depth and mess with the lighting” by pushing the wall back one layer. He performs this action by first destroying a few blocks from the surface of the wall and then adding exactly the same material on a level behind the wall. Whilst this action follows exactly the same principles as the layering example explained above, Spence is using a different terminology to describe his actions; in comparison to “insertions” and “extrusions,” he refers to this type of detailing as “negative” and “positive” depth to a flat wall. This hints to the universal application of this method as a means of detailing.

An additional detail that is exhibited in this vignette and is of relevance to any type of in-game *building* (including *detailing*) is the “centre point.” World Edit’s use (in-game tool for working directly on massive amounts of blocks in contrast to the default single-block manipulation) depends on the specification of two reference points as the basis for selecting⁴⁷, editing and pasting in-game content. In the instance exhibited in the vignette under discussion, the builder’s job revolved around editing only one side of a particular wall and then expanding that edit to the other side. In order to perform this action, he used a distinct block on the ground, which aligned with the build’s centre. This block is placed in the beginning of constructing any piece and remains a constant reference to the piece’s middle in order to facilitate the type of action showcased in this vignette (expanding edits that take place only on half of the build). This is the reason why he initiated his edit from the central point and worked only on the right side of the wall and, upon finishing the edit, he expanded its left side.

Georg: “It’s always nice to have a centre point. It needs a certain point, because otherwise you can’t rotate it around something. It’s a visual reference of where the centre is.”

[Observation material.]

5.4.2.2 *Manipulating lighting*

Another point of interest is Spence’s comment on adding a sense of “lighting a bit more at the front” (Vignette 8). This hints to another method Minecraft builders employ while *detailing*, which is intertwined with the game’s mechanics and its physics engine. Essentially, in an array of blocks that are placed unevenly in 3D space, the blocks on the top are going to drop shadows on those below them, giving them a darker hue (Figure 35).

Georg: “The block that is furthest away has a darker value than the block that is right at the top.” [Observation material.]

⁴⁷ Making a selection is one of the most mundane activities performed during *building* in-game content and draws upon World Edit and the builders’ position in space. Essentially, when builders want to select a number of blocks with the goal of editing them, they have to place their avatar in two consecutive positions and type in a command in each of these positions. Each of these two commands specify the selection’s two reference points. Hence, the selection itself includes all the blocks that are in-between the two designated reference points.

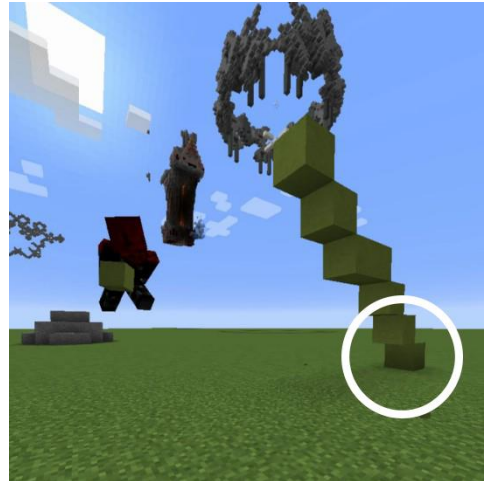


Figure 35 Example of how light affects the shadows that fall on blocks

It becomes evident that builders have found ways of appropriating the game's default lighting mechanics in their creative practices. By placing blocks in diverse positions, they manage to create the feeling that a wall has different textures or shadings. When this lighting technique is combined with specific materials, it can lead to even more intricate results, as depicted in Figure 36. The left image shows a wall piece, detailed with a red gradient, which is achieved through the meticulous placement of 3 different block types (as seen in Figure 36– right).



Figure 36 Example of a more complicated lighting result; stacking coloured transparent blocks used as a method for creating intricate lighting effects

5.4.2.3 Colouring

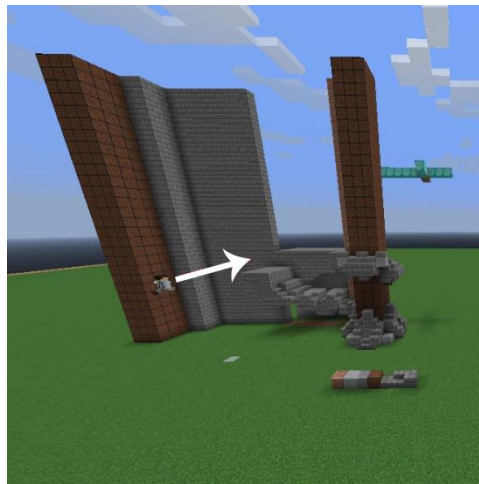
Whilst *layering* gives a sense of depth to a building block, builders further *detail* their work by *colouring* it. What they achieve through this activity is to match the aesthetics characteristics of the piece they are working on with those that

were established between contractors and clients during the *contracting* phase (see section 4.2)⁴⁸. In explaining how this is done practically, two examples are discussed: *consulting the material palette*; and *using filler blocks*. Both of these techniques constitute members' methods in *colouring* and took place multiple times during the conducted fieldwork.

Consulting material palette. In case builders do not know what block to use while in-game *building*, they may consult the material palette they created during *preparing*. This is exhibited in the following vignette⁴⁹ (Vignette 9) where a builder resorted to the material palette when he had reached a point where he did not know what block to use in order to proceed with his build.

Vignette 9 Using the material palette while colouring

Spence: *Goes towards the build.*



Spence: *“What kind of block?”*

Changes direction and heads towards the material palette.

⁴⁸ This applies to leisure projects too, with the main difference being that specifications are established between those that are involved in them.

⁴⁹ This constitutes part of the same building session as described in Vignette 8.



Spence: “Let’s use this.”

He clicks on the material he is on top of. He goes back to the building and starts working on it by using the material he just picked from the material palette.

This colouring method draws upon the game’s original mechanics for building in-game content, instead of any additional third-party tools: placing individual blocks on top of or adjacent to each other. Even though this is the most repetitive and time-consuming way of detailing, it was used significantly by all the participants and was considered ideal for *repairing errors* or *adjusting adjacent builds*, as discussed below.

Using filler blocks. Manually placing individual blocks of a particular colour can be a powerful method for *colouring* a build when the builders have decided which colour should be incorporated in it and make small edits. In the case where this decision has not yet been made or is not yet final, trying out many different colour types can become a time-consuming process, as builders have to manually place blocks of a specific colour, check on them (as discussed under *evaluating*) and then manually replace them (by destroying them and placing new blocks – in case the evaluation is unsuccessful).

This repetitive sequence is avoided via the combined use of filler blocks and World Edit:

Georg: “A filler block is a block that is going to change at a later point in time.” [Observation material.]

Essentially, builders occasionally use a block of a colour that they might not necessarily incorporate in their build with the sole aim of replacing it at a later stage of the *building* practice. What differentiates this method of *colouring* from the one discussed above is that all the filler blocks of the same colour are replaced altogether by blocks of different materials or colours (Figure 37).

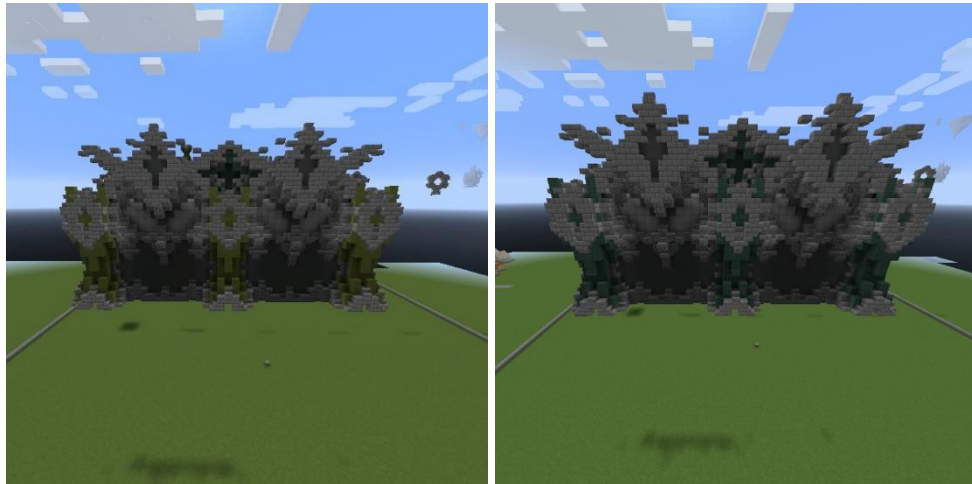


Figure 37 Example of recolouring through the use of filler blocks; light green blocks (left) are replaced with dark green blocks (right)

The picture above exhibits one such usage of filler blocks. In this case, the builder used light green blocks as filler blocks (Figure 37 – left) and replaced them with the same type of block but of a darker colour (Figure 37 – right). The alternative method of this recolouring would be the manual destruction of all the light-green blocks, followed by placing the dark-green ones in the exact same position as the ones destroyed. This would both be time-consuming and prone to errors, as it would be difficult (if not impossible) for the builder to reconstruct the pillars identical to how they were. By using filler blocks, the builders both manage to retain the structural integrity of their structures, but also save a lot of time not doing manual work.

Whilst it is possible that other builders would refer to these blocks with a different name, the practice of using “filler blocks” for recolouring is regularised across the community and is used extensively by many of the builders that participated in this project.

5.4.2.4 *Decorating*

The last type of *detailing* concerns the methodical placement of blocks on surfaces in order to diversify how they look like and create the impression that they have decorative elements on them. This step is usually performed when builders have already decided on the structural form and the colouring of the piece under construction. In order to describe the members' methods of *decorating*, two particular examples will be presented:

- An explanation of how this type of *detailing* can potentially be applied
- An instance where *decorating* is done in-situ, as part of an actual building scenario.

Decorative styles. There are particular building styles in Minecraft's creative community, which are adopted by a large number of builders. These styles were originally developed by specific individuals or teams, who shared their creations with the broader community and influenced the predominant ways of building content through them. Also, these styles became reference points for *detailing* and they were assigned names that corresponded to those who first came up with them. One such style is shown in Figure 38:



Figure 38 Using slabs and stairs as a means of decorating a wall

This particular style used to be the predominant way of *building* in-game content in Minecraft and the community called it “*slab-thrintia*” (**Spence**); a portmanteau of the main material that is used for doing this type of *detailing* (slabs) and part of the name of the individual who first came up with it and incorporated it into their work (Mithrintia). Whilst conducting fieldwork, this

type of *detailing* started to become less popular amongst builders, who shifted their interests towards a more abstract and organically-shaped type of decoration (Figure 39). As was the case with slab-thrinitia, this new decorating style emerged when a particular team pioneered the idea of placing organic shapes on top of flat surfaces as a means of detailing, instead of using random heterogeneous materials (such as slabs and stairs). This style became known as “*Pandora’s Blocks*” or “*BlockWorks*” style, as these are the teams that first applied it. One of the reasons why this style prevailed amongst others was because it was easily applicable on huge surfaces, effectively enabling the possibility of creating “*very big structures really, really fast*” (**Georg**).

Georg: “*Placing massive amounts of slabs on the wall; ... you take a flat surface and you dress it up by placing down slabs and stairs in various ways and you try to fit in as many stairs or slabs as possible until there is no more space.*”
[Observation material.]

The adoption of these detailing methods depends not only on the personal preferences of the individual builders with regard to their artistic expression but also on what clients want from each commissioned project. Not being able to produce results that matched the trends in the creative community could be considered a negative aspect of someone’s work, and subsequently lead to decreased clientele and income.

Georg: “*It’s hurting me, because I’m still getting people to pay for my work, so I can’t complain, but it’s something that have to keep in mind, because if I do not implement that specific type of style into my own build repertoire, I limit myself to certain customers only.*” [Observation material.]

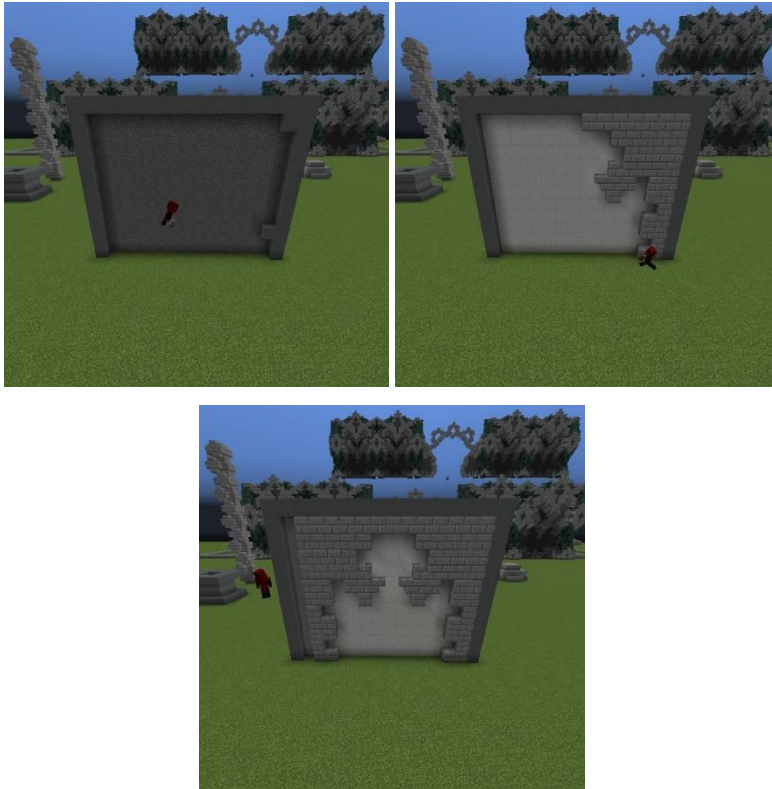
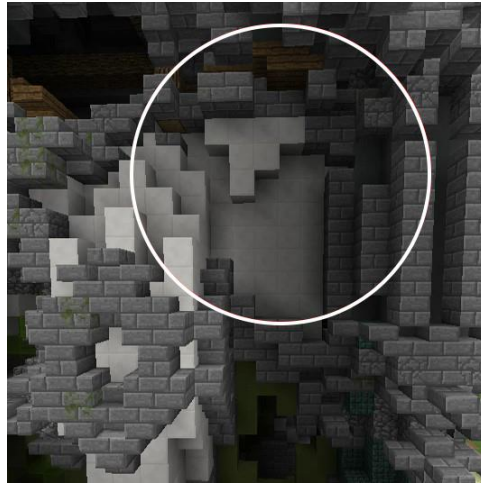


Figure 39 Using organic shapes for decorating a wall

Decorating as part of building. The following example (Vignette 10) presents a case where characteristics from both of the aforementioned techniques are put into use. In this vignette, the builder is creating a shape on top of a flat, monochromatic surface, which is part of a broader build that is decorated with various elements. It needs to be mentioned that this extract comes from one of multiple building sessions the builder (Georg) worked on towards the completion of a commission. The commission itself stood for the construction of a ‘spawn’ Minecraft world; the area where players find themselves upon connecting to a server.

Vignette 10 Applying decorations on a wall

Georg: *“An example that I haven’t fix is [this]. These white blocks up here, they are not separated from the stone, which means it becomes one.”*



Georg: *Destroys some of the white blocks and replaces them with stone.
“While if you, for example, put an outline around these blocks,
once you make this outline, the shape becomes more distinct.”*



Georg: *“That is sort of what I am doing right now. I am creating the
shapes to make sure that things have the proper outlines and
contrast.”*

What is of interest in this sequence is the reasoning behind the mechanical actions performed towards *detailing*. The “white blocks” in the first picture are considered to be a flaw in the overall design of the wall, as “they are not separated from the stone, which means it becomes one.” He fixes this decorative flaw by manually replacing the white blocks with grey-stone blocks, which makes the shape “more distinct.”

This type of *decorating* is in tandem with the aforementioned detailing types. Georg realises that there is a flat wall, which he initially *decorates* by placing a

few blocks of the same colour on top of them. Upon evaluating the outcome (an activity that is examined in the following section), his actions and his articulation over his method indicate the fact that the same shape with a different colouring would be the appropriate detailing for this wall piece.

Regardless of the fact that this example looks into a very specific spot on a bigger build (a wall – as seen in Figure 40), it is safe to argue that it constitutes a representative instance of how *decorating* is done. The same attention that is paid on spots like the one discussed in this vignette is paid on the construction and *detailing* of bigger pieces, like the one in the following picture. In fact, Minecraft builders usually start their work from these minor details, working their way up to bigger pieces, by *integrating* the former on the latter or expanding and transforming small bits into larger building blocks. This aligns with the overall argument about the iterative nature of the job of *building*; within each building cycle, building blocks are created, which are then appropriated, adapted or integrated towards the production of the final build.

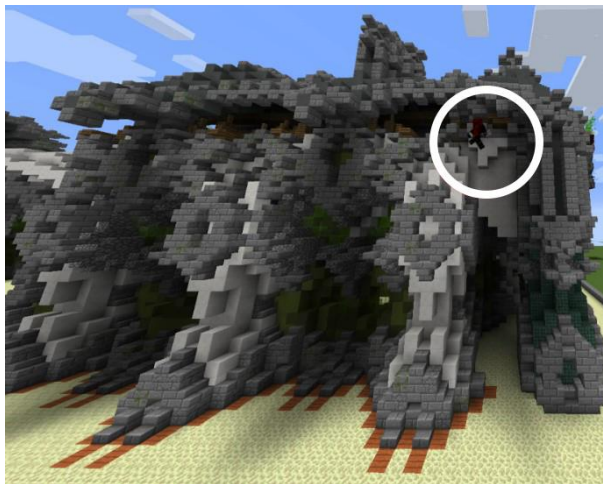


Figure 40 The wall the builder was working on in Vignette 10

5.4.3 Evaluating

This is a step that can take place at any given time during in-game *building*, ranging from small actions (such as the placement of a singular block) to the creation and integration of entire decorative elements. Builders go through the evaluation stage in order to establish whether the additions they are making to the piece they are working on match the specifications of the overall build. This section expands on how *evaluating* is accomplished in-game by looking into the

mechanical actions involved in doing it (Figure 41), as well as teasing out the *practical reasoning* involved in one specific instance of evaluation (Vignette 11) and the *reparatory actions* towards fixing the error (Vignette 12).

5.4.3.1 *Mechanical actions in evaluating*

One of the most routinely conducted actions during evaluation is for the builder to distance themselves from the piece they are working on after making an addition to it. As is depicted in the following picture (Figure 41), the builder is working on the roof of a castle. Upon placing the last block on the roof (Figure 41 – left), he distances himself from the build and stays mid-air for a few seconds, looking towards the addition (Figure 41 – centre). He then returns to the build and continues working on it (in this case, by adding more blocks on the roof) (Figure 41 – right). Whilst, in this case, the builder did not destroy any of the previously placed blocks (which hints at the fact that he was satisfied with the work he had conducted), multiple occasions where builders had to carry out reparatory actions to fix flaws on the piece under construction were witnessed during the fieldwork.

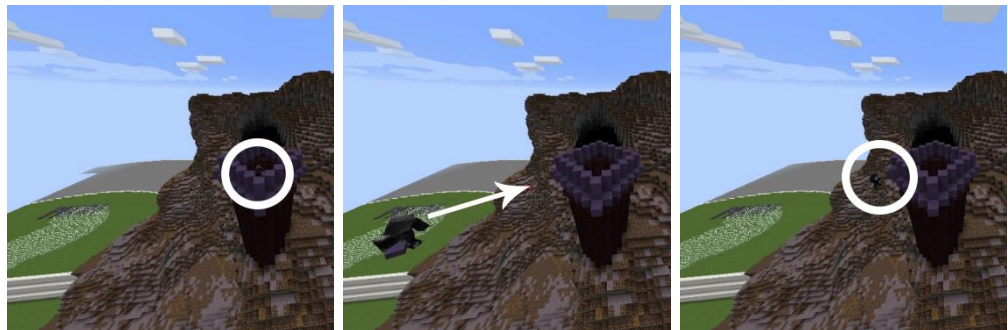


Figure 41 Taking distance from the build in order to evaluate it

This mechanical action becomes a necessity due to the game's first-person camera. Builders' perspective of the in-game world depends on their proximity to any given area, build or building block. By working so close to a particular build, their field of view is limited only to what they have directly in front of them, resulting in a constrained understanding of how their actions and additions to any given build relate to the rest of the elements the build constitutes of (e.g. its decorative elements, the colours of adjacent blocks, its size, etc.). By distancing themselves from the build, they manage to get a holistic view of their work, understand how individual blocks stand in

comparison to each other and make the necessary changes if they do not like what they see.

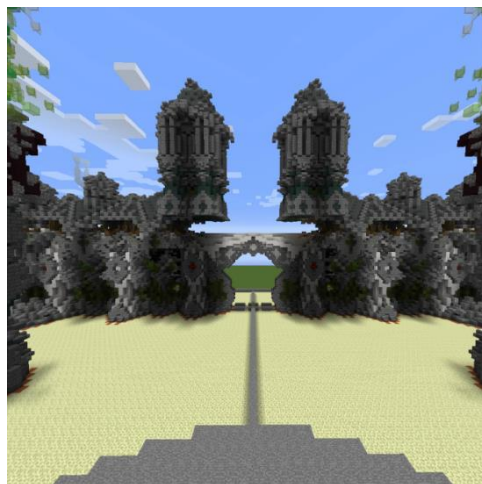
Max: “It’s good to just stand back and see you are doing. Art in general is always good from the distance.” [Observation material.]

5.4.3.2 Spotting an error

Whilst this is the most mundane of actions involved in evaluating, it is deemed necessary to present how builders spot errors in their work. What is demonstrated in the following vignette (Vignette 11) is the placement of two building blocks (two pillars) on top of a gate, which was the part of the build the builder was working on in that particular moment. This extract (alongside the one presented in Vignette 12) constitutes a continuation of the same building session as in Vignette 10. The succeeding analysis elaborates on the reasoning behind the builder’s evaluation of his work.

Vignette 11 Placing and fixing a building block

Georg: “So I am just now trying to focus on the piece that I just added above the gate and trying to see if I am enjoying what I see or if I am not enjoying what I see. I have a feeling that it is not a bad direction we are going.”



Georg: Deletes the pillars.



Georg: *“But we need to fix one thing, which is that this piece [the right pillar] needs to be moved a little bit on the left. A reason why I want to move it a little bit on the right is because I want to preserve the edge of the roof a little bit better.”*

What the builder is trying to achieve here is to check whether the two pillars sit nicely on top of the wall’s roof. He elaborates on the fact that “it is not a bad direction we are going,” which means that he likes these two building blocks as additions to the gate and is going to stick with them. However, he then proceeds to delete them, as he acknowledges that they need to be placed closer to the centre of the gate. The reasoning behind this is he wants to retain the existing details at “the edge of the roof,” which were lost by the pillars’ initial placement (Figure 42).

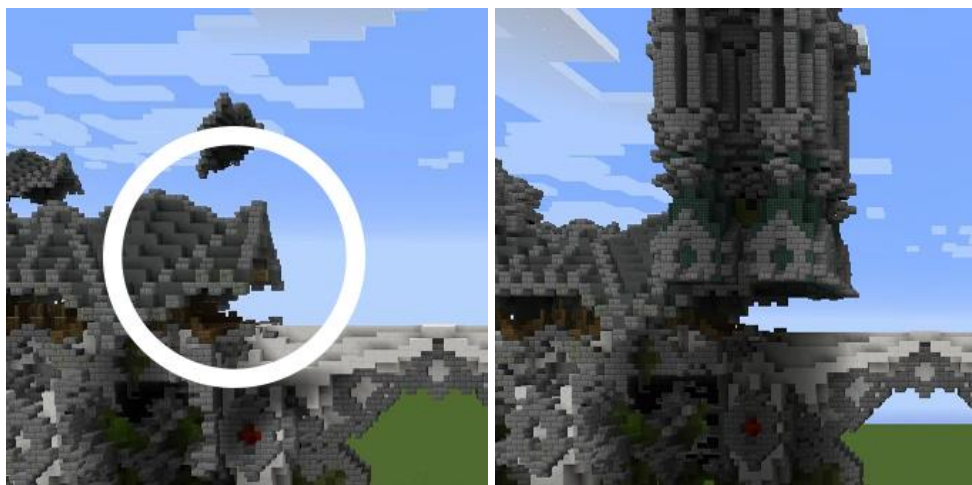


Figure 42 A detail (left – circle) that is lost after placing a building block (right)

5.4.3.3 *Repairing and error*

The following vignette (Vignette 12) is the continuation of the previous example, where the builder (Georg) performs a number of actions towards *repairing the error* (the misplacement of the pillars). As revealed through the vignette, repairing a misplacement draws upon performing a sequential number of mechanical actions, which are paired to the builders' reasoning of placing the pillars closer to the bridge's centre in order to "preserve the edge of the roof."

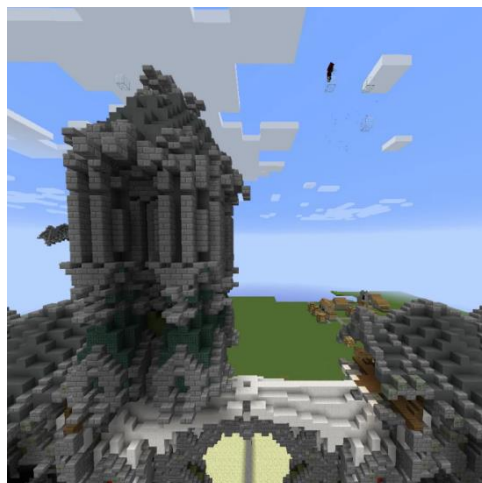
Vignette 12 Example of repairing a misplaced building block

Georg: *"You can see that I have the white blocks above it and those are reference points. And those reference points are very important because without these reference points you will have a hard time copy-pasting and redoing everything 20 times."*

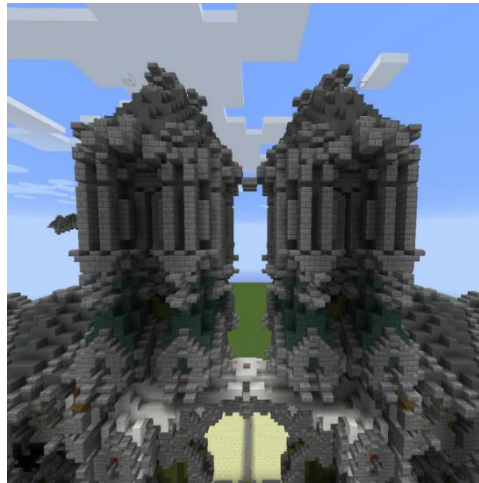
Georg: *Creates a new reference point for placing the pillar that is 6 blocks on the left from the original one.*



Georg: *Pastes the pillar.*



Georg: *Performs the same procedure for placing the right pillar.*



Repairing a misplaced building is achieved through the combined use of the copying-pasting technique (via the use of World Edit) and reference points. Georg is placing 6 glass blocks on the right side of another glass block. This mechanical action is of significance in performing the reparatory action of changing the original position of the pillars; the first glass block is the reference point used for placing the left pillar in its original position. Furthermore, the number of blocks and their direction correspond to the exact new position of the new pillar (in this case, the left pillar is going to be placed 6 blocks on the right of its original position).

It needs to be noted that these glass blocks are not part of the build but rather temporary blocks that are placed on the building site for the sole purpose of facilitating copying and pasting.

5.4.4 Integrating

This is the final activity in the overall practice of in-game *building*. It is initiated when the builders have successfully created a building block, which does not need any further amendments. In essence, the act of *integrating* leads to the accomplishment of making any building block part of the build that is going to be the final deliverable to the client (or the final version of the project under construction, regardless of whether it is for leisure or for business).

There are two steps involved in conducting integration: *placing builds in the building site; and adjusting adjacent builds* in order to match with the one that was placed near them.

5.4.4.1 Integrating through placing builds on the building site

This method draws upon the incorporation of previously-made building blocks in the commission builders are working on. As was discussed under *gathering in-game referential materials*, it is common practice for Minecraft creators to store exhibits of their work for future use. Besides small builds of a decorative nature (such as trees), builders can also store bigger building blocks that were created with the intention of using them either in existing or future commissions, if there is a need for them. Such a case is presented in Figure 43, where a builder pastes a house he had created in the past in its designated position.



Figure 43 Example of integrating a previously-made build by copying it from a storage world and pasting it on the designated spot

5.4.4.2 Integrating through adjusting adjacent builds

Upon successfully integrating the building block, builders occasionally continue working on the area where the piece was integrated in order to match it with the adjacent builds. This is the result of the limitations of using copy-pasting (via World Edit) as a technique for building in-game content; given the fact that by using it builders integrate pieces to broader builds, it is possible that these integrations are going to be crude, with parts that do not match with the surroundings needing further work before they can be incorporated completely. One such case is presented in Figure 44, where the integrated decorative pieces (the two pillars) that sit on top of the gate extend from its perimeter, resulting

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in a design that looks unrealistic, as the pillars do not seem to be part of the build. In order to accomplish the smooth integration of said pillars, the builder initiates a reparatory action by joining the end of the pillars with the gate below them. In doing so, the builder uses materials that match the components of both of these pieces (the gate and the pillars), which further enhances the idea that this *adjusting* phase aims at making the involved separate pieces match organically with each other.



Figure 44 Gradual integration of the decorative tower on top of the gate

This is considered to be one of the most time-consuming tasks while doing the in-game building, due to the manual labour involved. In contrast to the rest of

the activities that were discussed in the previous sections, this one “*does not work well if you start to copy-paste a lot of things*” (**Georg**). On the contrary, builders need to meticulously connect the combined building pieces and, as seen in Figure 44, the building site becomes very constrained, especially in comparison to all the other cases discussed before.

5.4.5 Recapping building

5.4.5.1 What is accomplished through building

The outcome of this activity is a number of builds that either constitutes the final deliverable that is going to be handed to the client or intermediary building blocks that are going to be further developed via consecutive building cycles. These building blocks are expanded, scrapped, stored or integrated into the overall build builders work on.

5.4.5.2 How building is coordinated

By unpacking the work of *building* in-game content, it becomes evident that its constituent steps are individuated actions that are conducted depending on the specific building task the builders had chosen to work on during *preparing*. Essentially, the builders jump from one activity to another (*building* and *preparing*) every time they want to diversify their work, touch upon another building task, discard pieces they had created and appropriate new referential materials. As such, coordination and articulation work does not take place during these individuated actions but rather on what precedes (*preparing*) or succeeds (*reviewing* – the activity of making sure that the commission is on track to what clients want to, as discussed in the next session) them. The only instance where articulation work takes place during *building* is when builders want to evaluate what they are creating. This case follows the same principles of intentional and coincidental coordination discussed under *terraforming* and *preparing for in-game building* (see sections 5.2.3.2 and 5.3.1).

It is important to note how *building* draws upon the trends in Minecraft’s creative community. As was mentioned under *detailing*, builders apply a number of techniques in order to transform flat surfaces into organically shaped structures and give them a sense of depth. These techniques are gradually developed through the constant “back and forth” between the members of the

community. It was reported that the incorporation of a style in someone's builds does not depend only on the builders' personal creative skills, but also on the clients' requests. Builders are capable of understanding the building styles clients prefer by looking at the referential materials they are given, however not being able to create builds that follow specific building styles might limit the number of clients' that show interest in commissioning work from them.

Georg: "This specific client sent me some referencing images of these four maps. They are all quite different from each other, but they give me a distinct picture of what kind of detail this client likes very block heavy, like a lot of stuff going on; that is what he prefers, so otherwise he wouldn't have sent me those screenshots."

Georg: "If I do not implement that specific type of style into my own build repertoire, I limit myself to certain customers only." [Observation material: The participant, who was a builder, was elaborating on why he was using a specific style during a building session.]

5.5 REVIEWING

This is the last activity in the overall practice of *crafting* and it aims at the confirmation that all the work the builders conducted meet the specifications of the commissioned project. This activity differs depending on the nature of the project, with bigger ones having a more formalised reviewing procedure, while smaller and potentially individual builds being reviewed only prior to being *delivered* to their final recipients (see section 6.1). As such, it does not necessarily take place at the end of *building* and when all the specifications have been met; reviewing might happen at random intervals during *building* or at pre-designated deadlines, which were established during *contracting*.

Reviewing takes place between the contractors (who own the commission) and the clients, unless it was otherwise specified in the project's details (which is the case in some of the union's commissions, see section 4.3.3.2). When

builders finalise their work, they share their progress with the contractors, who then come into contact with the clients in order to carry out this activity⁵⁰.

Reviewing revolves around the following tasks: *checking on the builders' progress* and *receiving feedback from clients*.

5.5.1 Reviewing through checking on the builders' progress

When contractors assign the job to a number of builders, they need to track their progress and make sure that the necessary deadlines are met. Depending on the organisation at hand (teams or the union), tracking the progress might be conducted in different manners and with dissimilar outcomes.

In the union's case, there was a two-layer tracking taking place: an official one (union-level), where the builders that failed to deliver the project on time would be penalised for not doing so, and a more informal one (contractor-level), where the contractor that owned the job would have to make sure that the builders were indeed working on their assignment. This is led mainly by the contractor, who has to:

- Make sure that the builders are aware of what they need to do and by what date;
- Frequently contact the builders about the status of the project. If the contractor realises that the builder is not going to submit the project on time (or if the builders themselves acknowledge this), then the contractor needs to re-delegate the task to another builder who can pick up from where the previous one left off and finish the job (which directs back to the job of *delegating tasks*).

Focusing on how this particular work is done in the context of a team, it is noted that it is usually carried out either by the team manager themselves or by individuals who specialise in progress-tracking and team moderation. In both cases, those responsible might employ the use of Excel spreadsheets or similar productivity tools for jotting down a number of details, which depend on the size and the complexity of the project, such as: who is involved in which project;

⁵⁰ Of course, when contractors are the builders of their own commissions, this step is omitted.

how much work each individual builder contributed to a collaborative project; and how many hours each builder has put in it.

Penalising builders due to late submissions or inactivity. Penalisation measures were mentioned by a number of participants as a means of dissuading the builders from submitting work outside of the agreed deadlines or due to being inactive. These measures were necessitated by the fact that unions or team owners want to maintain the reputable position they have in the commissioning market by providing a good service to their clients. When union members failed to deliver their work on time, their ability to claim subsequent jobs was deterred for small periods of time. Along these lines, team members could be dismissed from the ranks of any such organisation if they did not meet the prearranged deadlines.

The penalisation scheme that was employed in the union was a measure aimed at addressing the problem of builders claiming more jobs than they could handle, and thus eventually fail on delivering commissions on time. This measure was necessitated by the fact that the union itself had a reputable position in the community and many clients were approaching it for the sole purpose of the quality builds that came out of it.

Steve: “[If they] failed to do a proper job, or they failed to complete it, we hinder this person’s ability to take the first job that comes or force them to work with somebody else for the next progress.” [Interview material: The participant, who was a contractor, was explaining what would happen to a team member who repeatedly failed to meet deadlines.]

5.5.2 Receiving feedback from clients

Reviewing the progress of a product includes not only the contractors and the builders but also the clients behind the commissioned job. In fact, builders have little to no involvement in this step, as the communication is mainly done between those who own the commission (the contractors) and those that are paying for it (the clients). The outcome of this step varies depending on the stage of *crafting* in-game content, as contractors might enquire on the clients’ feedback from an early stage (such as during *planning*) or at any given time

while *building* content. Two discrete examples will be discussed, which constitute unique cases of doing this particular job of work: *having formal reviewing deadlines*; and *accounting for progress through visual assets*.

5.5.2.1 *Having formal reviewing deadlines*

This is a rather rare scenario that occurs only when the builders and the contractors are working on projects that are commissioned by large companies. In one case, a team was working for a large corporation in the entertainment industry. They had to attend formal deadlines, all of which were documented in an Excel spreadsheet that was distributed across those in the team that managed the project⁵¹. The information in this spreadsheet included a variety of details, such as:

- The exact dates for each one of the reviewing meeting;
- The exact build that had to be done by each of these reviewing dates;
- Colour-coding for marking builds as “done” or “pending;”
- A breakdown of all the tasks that each individual is responsible for.

5.5.2.2 *Accounting for progress through visual assets*

One such case is the sketch depicted in Figure 18, which was put together during the *envisioning* stage, prior to initiating in-game *building*. As was elaborated in the corresponding section, these pieces (plans, sketches, etc.) would form the basis upon which builders created in-game content. As such, conveying these pieces to the clients before realising them in-game would make it clear whether the builders were indeed heading in the right direction. Feedback, of course, is not always binary (clients liking it and giving the green light to move forward or not liking it and asking for a complete reconstruction); “*there are also situations where... there need to be adjustments made*” (Georg) to any of the deliverables in the overall *crafting* practice (plans, terraforming examples, in-game content, etc.), always depending on what the client says.

An actual interaction between a client and a contractor, showing the exchange of screenshots of the conducted work, is exhibited in Vignette 13. This is a very

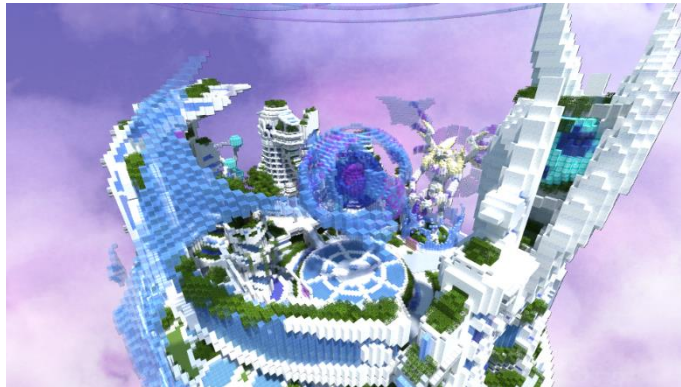
⁵¹ Due to the non-disclosure agreement between the participant and their client, attaching parts of this document as-is here is not possible.

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straightforward case that illustrates a happy client: the contractor delivered pre-rendered images of the build, which the client received positively without any comments in terms of what has to be changed. This example was provided by the contractor himself upon being enquired to elaborate on how reviewing is done.

Vignette 13 Receiving feedback from the client

Jim: “It’s completed. Pre-renders here:”



Dan: “Good job!”

Sharing static visual assets (pictures) instead of inviting the clients inside the game is the preferred method for accounting progress due to matters of trust. More specifically, there are specific Minecraft mods that allow for those logged-in to a server to download the entire Minecraft world to their local computers. By doing so, they get access to said worlds (and the builds within). In the commissioning market’s context, when clients perform such an action, they can effectively ‘scam’ the builders, as they acquire the commissioned builds prior to the finalisation of the commissioning process and without paying for them.

Georg: “There is a huge risk in that we take on a daily basis whenever we do commissioning work. The reason why it is a risk is because people can download or save worlds that you create if they visit the world. So for example, if you install a few mods in your Minecraft client, you are able to download the entire world that I have in this place.” [Observation material: The participant, who was a builder, was explaining why he rarely allows people he does not know inside his building server.]

5.5.3 Recapping reviewing

5.5.3.1 What is accomplished through reviewing

Through *reviewing*, contractors and clients reach a common understanding as to whether (1) the commission is progressing and (2) the progress that is made meets the build’s specifications. Depending on the project’s scale, this activity might be conducted only once (when the build is complete) or in multiple intermediary steps (in which case, contractors have to present a number of deliverables to the clients). Once *reviewing* is finished, builders have to address the feedback they received and continue working on their build(s) or proceed to the subsequent segment in the arc of work (see section 6.1).

5.5.3.2 How reviewing is coordinated

During *reviewing*, coordination takes place when contractors have to account for the project’s progress to clients. This can happen either on pre-designated deadlines (which were set up during *contracting*, see section 4.2) or on random occasions that are instigated by any of the involved actors (contractors or clients).

In the former case, those involved in the realisation of the project (contractors and builders) coordinate with each other based on the deadlines that are available to them through the specifications document. Contractors check the builders’ progress by: (1) asking them directly about it; (2) using productivity tools (e.g. Trello, Excel spreadsheets, etc.) for tracking which specifications have been met and which remain to be created. Regarding the latter methods, builders are responsible for updating their projects’ Trello cards as to which

parts of the project are completed (e.g. by ticking them off from the list of remaining tasks).

In the latter case though, clients might ask for an update on the build prior to the designated deadline or contractors might decide to provide instances of work-in-progress to the clients without them asking for one. In either case, updates are coordinated through the use of pictures of the commissioned build; contractors take pictures of the said build and relay them to the clients, who provide feedback as to whether they like what they see or not. The feedback is then relayed to the builders, who apply the suggested changes (or continue with their work as-is, if no negative feedback is provided). The exchange of these accounts is carried out via Skype, which is the predominant means of communication in this market.

5.6 TAKEAWAYS

This chapter revealed what is done in the doing of the keystone segment of the arc of work: creating the in-game content commissioned by the clients. This segment is broken down into five distinct activities, namely: envisioning, terraforming, preparing for in-game building, building, and reviewing. It becomes evident that even though each of these activities contributes towards the realised completion of the commission, they are not performed in a sequential order. On the contrary, the initiation of one is contingent to the nature of the task the builders are carrying out at any point in time. For instance, builders might pause building and revisit envisioning if they need to create layouts or gather referential materials that are going to inform ongoing building tasks.

Additionally, it was revealed that a number of bespoke tools and systems are used in these activities, which are either developed and maintained by members of Minecraft's creative community (e.g. World Painter and World Machine) or are contingent to how specific teams are organised (e.g. in-game annotation systems). Alongside these tools, members reuse, adapt, and appropriate resources that they (or others) have created in the past, rather than building everything from scratch. These resources are assembled by scouting Minecraft

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worlds members had employed in the past or online websites (e.g. fora) where builds are usually uploaded for exhibition purposes.

Crafting content is a practice that is mainly carried out by builders of diverse expertise. However, clients and contractors come into play too when the conducted work needs to be reviewed. These reviewing steps are necessary for the continuation of a project and many times contractors pursue them, even without clients enquiring for them.

Lastly, coordination between the involved parties takes place via the use of a number of systems and bespoke in-game activities. Builders update each other on their progress when they coincidentally meet in-game. Intentional means of progress-checking can also be part of a project's specifications, with formal deadlines and deliverables per deadline being in place. This, again, falls under the organisation of distinct teams or the idiosyncratic nature of distinct projects.

With the completion of this segment of the arc of work, the build is created, and its delivery is occasioned, as discussed in the following chapter.

Chapter 6

6 AFTER BUILDING

This chapter presents the last two segments of the arc of work of commissioning and creating a Minecraft map: *delivering the product* and *distributing money*. Each of these practices is carried out after the successful construction of the product. As the name suggests, *delivering the product* focuses on the client receiving the build they paid for, while *distributing money* revolves around the distribution of money to those involved in building a particular build.

Similar to *before building*, most of this material comes from informal interviews with the participants, as well as time spent visiting forum threads and following Minecraft professionals on Twitter. In order to validate the various arguments raised in the succeeding analysis, participants were consulted through Skype messages with regard to the use of specific activities, such as *updating the blacklist* or *updating promotional materials*.

6.1 DELIVERING THE PRODUCT

This is the first of the practices that take place right after the completion of the product, with its aim being the successful delivery of the commissioned build to the client and the evaluation of the involved actors (contractors and clients).

There is a number of activities that need to be carried out in order to successfully deliver a Minecraft map⁵². Initially, clients have to *process the final payment* for the commission and send the remaining amount of money to the contractors (a down-payment is usually processed during *contracting*, see section 4.2). Upon receiving their payment, contractors *finalise the delivery* of the product, which leads to *evaluating the transaction*. As will become clear in the

⁵² Exporting the map is a prerequisite in delivering the map, however the exact ways in which this action is performed are not going to be discussed as it is a mundane action that is afforded natively by the software tools members use.

subsequent sections, part of *delivering* revolves around ensuring that all the precautionary measures against scamming are taken, which is another matter that was briefly touched upon in chapter 4.

6.1.1 Processing final payment

This is the first activity entailed in *delivering* a product and its accomplishment turns upon the collaborative effort of the clients and the contractors, as well as the participation of the intermediaries that facilitate the payment process. Upon its successful conduct, the agreed amount of money is transferred to the contractor, which occasions the *finalisation of the delivery*. The fieldwork revealed two particular methods of managing the payment: by *using PayPal* or by using the services of community-led organisations that act as an *escrow system*.

6.1.1.1 Managing payments via PayPal

PayPal became the main method for managing all the transactions in Minecraft's commissioning market. The reason behind this was the need for both involved parties (contractors and clients) to have a safety net for scamming; PayPal offers the reassurance to all their customers that if a transaction does not meet the agreed expectations, then they can ask for their money back (a service that is named "charge-back")⁵³. Whilst instances of clients being scammed by contractors did not emerge during the fieldwork, all of the contractors and builders who participated in this project elaborated on the fact that they were scammed at least once during their career in this commissioning business. The predominant way of this happening was by the clients opening up a dispute in PayPal, where they accused the contractors of not delivering the builds they were commissioned to do. Due to this, a number of precautionary measures were put in place, with the down-payment (see section 4.2) being one of them. The exact ways in which contractors protected themselves against scamming are going to be discussed in subsequent sections (*keeping proof of delivery* and *updating blacklist*).

Max: "I did get scammed a few times and I have made some money. So I do have some experience with it. It's a learning

⁵³ <https://www.paypal.com/uk/webapps/mpp/chargebacks>

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thing. You're learning how to deal with clients." [Interview material: The participant, who was a contractor, was explaining how common scamming is in this community by reflecting on his own experiences of getting scammed.]

Spence: *"Pretty much everyone does their business through PayPal. PayPal, they've got this system called charging back, which gives the like buyer 180 days I believe it is to charge back the PayPal saying... and they come up with a complain saying like 'We didn't receive the project [...].'"* [Interview material: Similarly to the quote above, the participant, who was a contractor and belonged to a different team, was elaborating on scamming, by also providing an account on one of the counter-measures that were appropriated by the community.]

The following vignette (Vignette 14) demonstrates what precedes the transaction between a client and a contractor. It constitutes the continuation of a case that was already covered in previous sections (see sections 4.2 and 5.5) and it takes place right after the client expressed his satisfaction over the final result of their commission.

Vignette 14 Exchanging payment details

Paul: *"Do you wish to proceed with the transfer now?"*

Dan: *"Yes"*

Paul: *"Alright. [I] will need to invoice your address again. Can I get that PayPal email?"*

Dan: *[Censored]*

Paul: *"Sent, sorry about the wait."*

Dan: *"Paid."*

Paul: *"Confirmed. Thanks for another successful business transaction. :) Do you think we can request for a few minutes of your time to get a survey from you? If you are open to doing so here's the link: [censored]. This would help us know how we're doing and allow us to collect statements regarding our services. :)"*

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Paul: “Oh and you should paste that spawn to exactly $y=152$. Any higher or lower it would cut off some parts of the build.”

Dan: “Tomorrow morning I compile the survey. And in the next few days I will ask you new orders. :)”

Paul: “Sounds awesome thanks!”

What is of interest in this extract is the exchange of information that is necessary for paying the contractor. Initially, the contractor (Paul) asks the client (Dan) whether he “wish[es] to proceed with the transfer,” letting the latter decide when to do so. Upon replying positively, Paul clarifies that in order to send an invoice, he needs the client’s PayPal email (which is necessary for any type of transaction via PayPal). This particular exchange reveals that PayPal transactions are done in a formal way, with the contractors (the ones that provide the services the clients pay for) invoicing the clients about their work. On top of that, there is another resource at play here: the unique PayPal email of the client, which is essential for the accomplishment of the task at hand.

The actual exchange of the necessary details for *managing the payment* unfolds like so: (1) the client sends his email to the contractor; (2) the contractor sends the invoice to the email address he received; (3) the client pays according to the invoice he received; (4) the contractor finishes the exchange by providing an optional survey for the services provided. Interestingly, each of these turns is followed by the recipient accounting on their actions. For instance, Paul informs Dan that he sent the invoice, which occasions the latter’s action of paying (which Dan makes available to Paul by replying: “Paid”). Similarly, Paul acknowledges receiving the payment (“confirmed”), which puts the critical point of *managing payment* – transferring the money to the contractor – to an end.

Besides this exchange, there are a couple of other matters that emerge from this transaction, with the first of them being Paul’s enquiry as to whether Dan could fill in a survey that “would help us know how we’re doing and allow us to collect statements regarding our services.” This is a matter that is discussed later on, under *evaluating the transaction*. On top of that, Paul informs Dan that the spawn should be placed “exactly $y=152$.” This is a very crucial piece of

information, which aligns with Minecraft's own limitations in terms of the world's maximum height and how that could affect the placement of the build. As was mentioned in the *terraforming* section of *crafting content* (see chapter 5), each Minecraft map has a maximum height of 256. By placing a build in a position where some of its parts would be above this limit, the end result would be these parts being excluded from the pasting and as such the build will not look and play as expected. In this particular situation, the contractor makes it available to the client that the build was constructed in such a way as to function properly only when it is placed exactly at the height 152. Sharing this information is part of *delivering* the build, as it reassures that Dan will be happy with the product he receives and will face no problems integrating it in his server.

Lastly, the client makes it available to the contractor that he “will ask you new orders.” What is of interest in this statement is not only declaring his willingness to commission new builds, but rather the fact that he makes the time window for doing so explicit to the contractor (“in the next few days”). It has already been uncovered that this client is working on opening up a new server (see section 4.2.3.1), which explains the need to commission not only one but many new builds in a short period of time.

6.1.1.2 Managing payments via an escrow system

Whilst PayPal constitutes a solution that does provide a safety net to both contractors and clients, the predominant belief in the community is that its “*policy tends to side with the buyer rather than the seller*” (**Nick**). This means that when a client (the buyer) argues that the services they paid for were not delivered or were not up to the expected standards, PayPal will side with them unless the contractors (sellers) have “*stone cool evidence and proof that [we]’ve sent and they agreed [with] it*” (**Spence**). As is the case with most aspects of this market, a solution to this potential issue came from a particular sector in Minecraft's community that only started to emerge during the course of doing this fieldwork; that of independent companies that were acting as an “escrow system⁵⁴.” The role of these companies was to provide legally-binding contracts

⁵⁴ <https://en.wikipedia.org/wiki/Escrow>

to both parties, ensuring that both the clients' and the contractors' needs would be met with no risk involved in them. More precisely, they were the ones who were receiving both the payment (from the clients' side) and the product (from the contractors' side), and when they confirmed that both of them aligned with the established requirements (see section 4.2), they would transfer them to their corresponding recipients. It needs to be noted that they were using PayPal too as the means for managing the payment. However the transfers were only made when both parties delivered what they agreed upon. Furthermore, they addressed another issue that plagued the community; that of explaining to PayPal the nature of the business and trying to convince them that a scam took place. Given that these intermediaries hold legally binding contracts that apply to both parties, it is easier for them to convince PayPal of the legitimacy of the business of commissioning the creation of Minecraft maps and the need to get money back in case of scamming.

Nick: "Obviously, in terms of gaming and in terms of online services in relation to Minecraft, it's a very hard to explain idea for a moderator on PayPal to understand. We are a registered company and we also have legally binding contracts that the buyer has to agree to, otherwise they can't do anything. And that way we can simply give PayPal that legal agreement, which is something that they understand more than just the actual Minecraft services as it were."

[Interview material: The participant, who ran an escrow system service, was explaining the reasons behind his business.]

6.1.2 Finalising delivery

Once the payment has been resolved, contractors proceed to the actual delivery of the product. Essentially, what is achieved through this activity is the *transferring of the product* (the Minecraft map) from the contractors to the clients. In addition to that, contractors might *keep proof of delivery* as a precautionary mechanism for any potential scamming.

6.1.2.1 *Sending agreed product*

The first step in *finalising the delivery* of the product is to send the map to the client. This can be done via the use of any file sharing application. For instance, if the contractor was to send the file via Dropbox, they would upload it to their personal Dropbox profile and then send the corresponding Dropbox sharing link to the client of the project. As this type of transaction constitutes part of the most sensitive interactions between contractors and clients, those that participated in this project were reluctant in sharing their screen while such a transaction was taking place. However, the following vignette (Vignette 15) reveals a number of interesting actions around which the activity under discussion turns, such as: delivering supplementary materials (renders) and *keeping proof of delivery* (as discussed in the section that follows).

Vignette 15 Delivering 3D renders

6/4/2016

Dan: “Survey completed. :)”

Paul: “Thank you.”

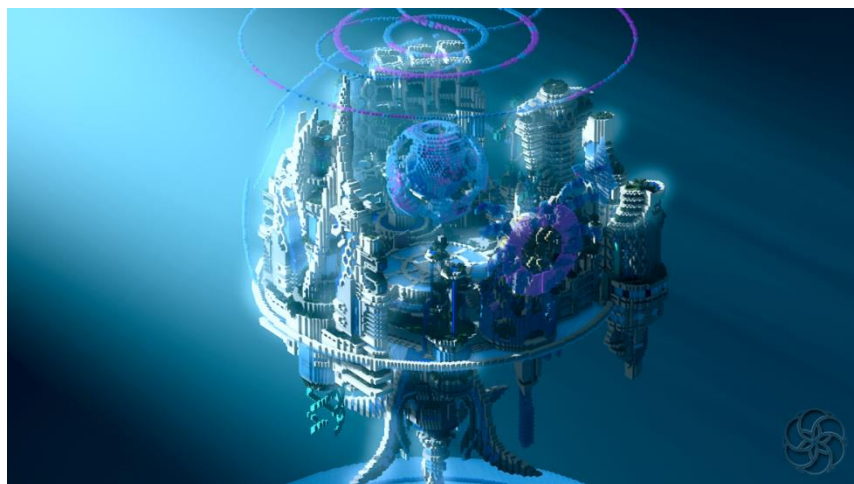
Dan: “The render of futuristic city when it’s ready?”

Paul: “Alright in progress. :)”

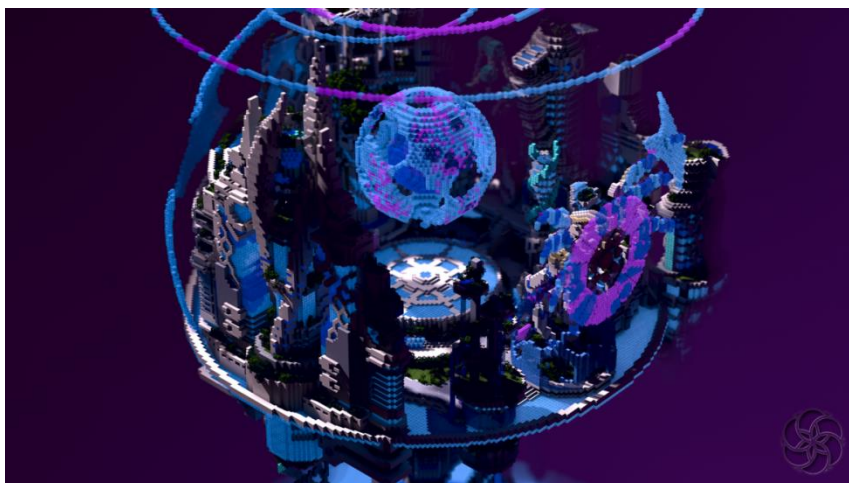
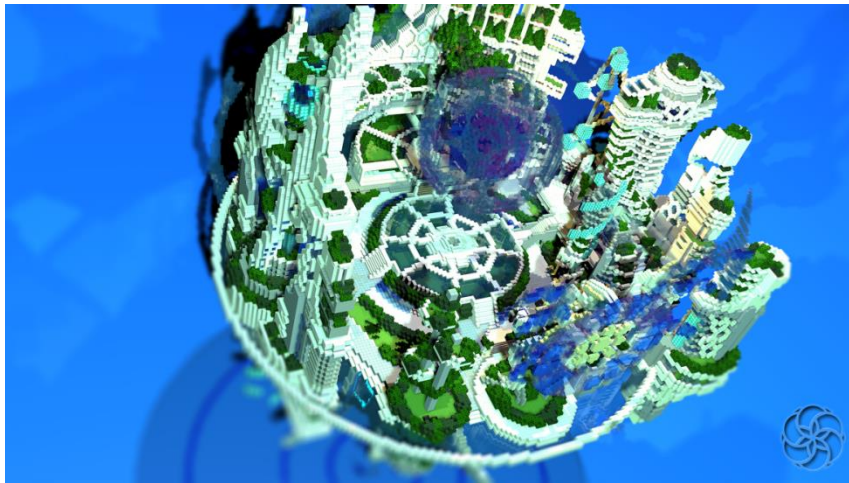
Dan: “Perfect”

10/4/2016

Paul: *Sends picture to Dan via Skype.*



“Here we are. Took our render boy a few try. I can send you the others as well... the failed experiment ones.”



Paul: “Very good.”

Whilst this transaction between the contractor (Paul) and the client (Dan) took place right after *processing the final payment* (Vignette 14), there is no evidence of transferring the build in this transcript. This points to the fact that the contractor either: (1) sent the build via email, which the client already made

available to him or; (2) included the build in the PayPal invoice (which provides the means of attaching files).

Having said that, there are two interesting matters that are demonstrated in this extract. Firstly, the client, upon accounting for completing the survey that he was asked to fill, enquires on the status of the 3D renders that were agreed upon during the *contracting* phase. The contractor reports back to the client by saying that they are “in progress,” which is welcomed by the latter. Four days after this exchange took place, the contractor comes back to the client by attaching the images of both the 3D render that is considered successful, as well as 4 images of the “failed experiment ones.” In contrast to the builds (which constitute in-game assets), these renders are simple static assets and are shared as images, which is why the contractor attaches them on the Skype conversation he is having with the client. Another interesting matter that needs to be pointed out is: “Took our render boy a few try.” This makes it explicit that the renders are created by expert individuals who are good at performing this particular task. In fact, many individuals who were followed on Twitter or members of the community participants referred to, specialised in creating this type of promotional material. Phrases such as “After we complete our build, we will give it to ‘that guy’ in order to produce a nice render out of it” were indeed commonplace.

6.1.2.2 Keeping proof of delivery

Upon *delivering* the product to the client, contractors keep a paper-trail of the transaction in order to protect themselves from being requested to return the payment via PayPal’s charge-back mechanism. The best example of paper-trail that was acquired is the actual Skype log that was unpacked both here and under *contracting* (see section 4.2); this constitutes one of the resources contractors retain as proof of coming in contact with clients and agreeing upon the commission. Supplementary resources constitute email exchanges between the involved parties, which have the right attachments (the build under commission) or attaching the build on PayPal invoices. It needs to be mentioned that this step might be omitted when contractors and clients have worked with each other in the past and trust is already established between them.

6.1.3 Evaluating the transaction

When the transaction between the client and the contractor is over (successfully or unsuccessfully), both of them might move into an *evaluating* step, where they reflect on the experience they had collaborating with each other. As will become evident in the following sections, this is a step that facilitates a number of matters, such as: informing the community of any malpractices (via *updating the shared blacklist*) and strengthening the contractors' public image (via *evaluating contractors*).

6.1.3.1 Updating blacklist

This step is undertaken only when the contractors (and consequently the builders) had a negative experience by dealing with a particular client. Essentially, some teams and organisations (such as the union) share a common blacklist (or maintain their own internal blacklist), which constitutes a collection of all the clients who scammed the contractors. The purpose of maintaining a list is to make sure that the contractors can have a reference point for the clients that have not paid for the builds they received at the end of the commissioning process. As such, contractors can identify these clients and avoid them when the latter approach them with a proposition for commissioned work.

One of the available blacklists in the community can be found in the union's terms and conditions⁵⁵. More precisely, each entry of this blacklist includes:

- **The scammer's name:** This is not only their Skype handle but rather all the aliases that they are known by in the community. Some of the entries had the scammer's Skype handle, the servers they were associated with or owned, and their Minecraft handle.
- **Colour-coded danger levels:** Depending on the type of scam that took place and the overall severity of their actions, they are coded with the corresponding colour. In the union's blacklist, the colour-coding is constituted of three categories:
 - Red – Do not associate;

⁵⁵ Shared online via Google docs.

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- Orange – Potentially dangerous, although there is the possibility that any mishaps emerged due to “*miscommunication*” (Steve);
- Blue – Might not be worth working with due to “*being picky or doing whatever they can to get a cheaper price*” (Steve).
- **A description of the scam:** This is a list of all the actions the scammer is accused of committing, such as: not paying on time; receiving the build but refusing to pay; paying for the build but selling it to others for a higher price; harassing builders and contractors; etc.
- **Evidence:** Screenshots that prove the case raised in the description section of each entry. For instance, if a contractor accuses a client of promising to give a specific amount of money but denying to do so upon receiving the build, the contractor will have to provide screenshots of: (1) the agreement, (2) the successful delivery of the product and (3) the client’s refusal (or avoidance) to pay the requested amount of money.

Drawing upon the activities performed by the union’s members, it was noticed that they tended to make any additions to the blacklist curated by them available to the public via Twitter. Every time there was a new entry in the list of scammers, the one responsible for managing the union’s official Twitter account would post a tweet, mentioning the details of the scammer, the reason for being added to the blacklist and a link to the list itself. Interestingly, they also created a publicly available form which anyone could use for reporting a scammer. Whilst references to the form cannot be attached as it would reveal the identities of those that participated in this project (or the organisations they were working for), it should be noted that a request to add a client to the blacklist is a “*moderated process,*” where the accusers have to “*supply evidence of the scam and also evidence that it’s the person that you are trying to add to the blacklist*” (Spence). In accordance with the information included in each entry of the blacklist, the accuser should provide the following details when filling the blacklist submission form:

- The accuser’s name;
- The accuser’s contact details;
- Their role in the creative community (client or contractor);

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- Name of the scammer and their associations (if any);
- Description of the scam;
- Evidence of the scam.

Even though some clients have their names in the blacklists, they have already acquired the trust of specific contractors. Hence the latter do not take into consideration the fact that these particular clients are on the blacklist. On the contrary, they benefit from this fact, as fewer contractors pursue any type of association with them.

Georg: “Even if someone is on the blacklist, it is something that you should take into account, but it can also be a benefit, because he is in the blacklist, people will not associate with him, which means that he is forced to come back to me”

[Interview material: The participant, who was a builder, was talking about the various uses of the blacklist and how he personally had benefit by being one of the few ones to be associated with particular clients.]

6.1.3.2 Mentioning clients on promotional material

Clients do not only receive negative publicity from contractors. On the contrary, a good transaction can lead to the inclusion of the client’s name and network on the promotional material contractors publicise as an advertisement for their services. This is a case that was already touched upon under *documenting the commission* (see section 4.2); by having their names and their server’s IP mentioned in the contractors’ sites and forum threads, clients might end up receiving new subscribers, hence experience an increase in their business revenue.

6.1.3.3 Evaluating contractors

Clients also evaluate contractors⁵⁶ by providing them with feedback regarding the services they received. One way of doing this is glossed in Vignette 14,

⁵⁶ In order to keep the elaboration simple and avoid confusion, only contractors are referred to as the ones who receive feedback from clients. This is the case because builders can also be contractors of their own work (freelancers), as discussed in the relevant chapter (see section 3.3.2).

where the client was asked to fill in a survey that “would help us [the union] know how we’re doing and allow us to collect statements regarding our services.” Another way of evaluating the provided services is by posting on the contractors’ dedicated threads of the various fora that members of Minecraft’s commissioning market use for promoting purposes (such as PMC and SMC). As discussed under *scouting* in *contracting* (see section 4.2), the act of “vouching” constitutes a method clients employ for “*filter[ing] out the bad builders and leave the good builders*” (**Tien**). Receiving this type of feedback strengthens the contractors’ reliability and reassures potential clients of the quality of the services they (the contractors) provide. By visiting these fora, it was witnessed that the feedback these individuals receive mainly revolves around:

- The clients’ level of satisfaction (e.g. “I vouch for [name of the contractor]”);
- What the contractors (or builders) are good at (e.g. terraforming);
- Details regarding the experience of working with the contractor (e.g. “good guy”);
- Supplementary details of the commission they carried out successfully⁵⁷.

6.1.4 Updating promotional material(s)

This section focuses on explaining the nature of the promotional materials and what is achieved through them⁵⁸. There have already been references to the role promotional materials play in various segments of the arc of work (see section 4.2), although further elaboration is deemed necessary. As put by a participant: “*the process of collecting clients... begins with self-promotion*” (**Paul**), which means that without having such materials, it would not be possible for the contractors to gradually build and maintain a client base that would provide them with commissioned work. Along the same lines, “*advertising is actually*

⁵⁷ Screenshots of these forum posts cannot be added here, as participants did not consent in using this material due to their non-disclosure agreements with their clients.

⁵⁸ Whilst there is a distinct line of work Minecraft members attend to in creating said materials, the practices involved in it fall outside the scope of this project and as such are not going to be explained here. It is prudent to remind the readers though of the existence of experts in creating promotional materials through the use of software tools such as 3D Blender and Photoshop.

what gives a person power in our business” (Georg), a matter that coincides with previous discussion regarding the fact that the ones who own the commissions are not those who do the work (builders) but rather those that acquire them from clients (contractors). Also, as was raised by some members, those who have a large number of connections were in an advantageous position compared to those without, as it translated into being able to acquire commissions more frequently, which they were either undertaking by themselves or were subcontracting to others.

Paul: “I compete in terms of client connections and in terms of efficiency.”

Georg: “The advertising is what actually generates new commissions, so if you do not have any advertising, you will not gain the commission.” [Interview material: Both these quotations come from two distinct participants (a contractor and a builder) who belonged to different teams. They were explaining the power of advertisement and connections in Minecraft’s commissioning market.]

It is also worth mentioning that *updating promotional material(s)* is an activity that could be initiated at any point in time after the product is finalised. However, it is placed here mainly because *evaluating the transaction* is the last activity that involves both clients and contractors. Upon its accomplishment, the current commission is completed and clients reinitiate the arc in order to order a new build. As was discussed in chapter 4, this draws heavily upon promotional materials, which are the resources clients consult while *scouting* for contractors (see section 4.2).

Promotional materials are classified as such: *online presence in fora*, *twitter updates*, and *conventions*. The following sections briefly elaborate on each of these types of resources and the information that is attached to them.

6.1.4.1 Online presence in fora

Profiles on websites such as PMC and SMC are used as the builders’ official portfolios, which they refer back to on a regular basis, update and share with

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others when they want to advertise themselves and their work. A typical profile (Figure 45) involves a description of who they are, the teams they belong to or the people they collaborate with, what they specialise in and, of course, a list of all of their creations. Usually, when builders are open to receiving commissioned work, they clearly specify it in their description.

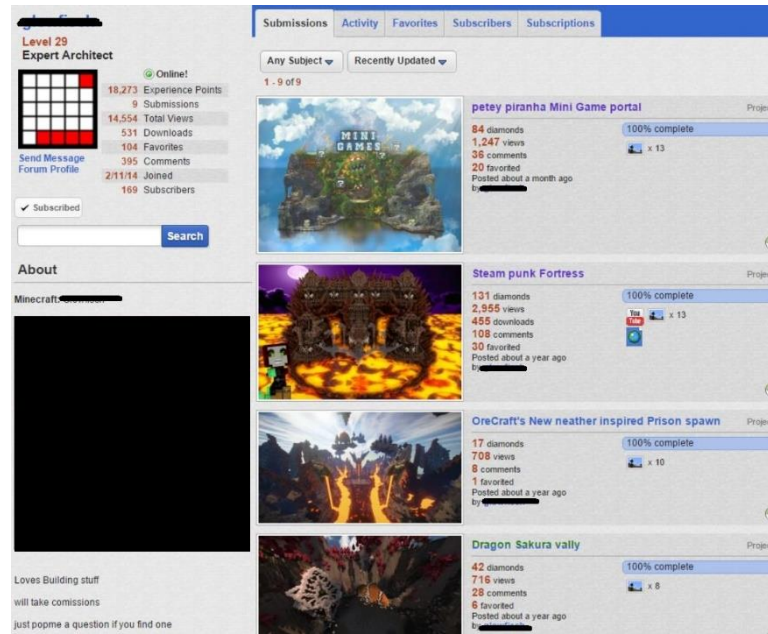


Figure 45 A typical builder's profile, as found in PMC

In terms of the builder's portfolio and the ways in which builds are exhibited, different types of information (Figure 46) are provided within each entry, such as:

- **Pictures of the build**, which resemble the actual map from different angles and with different rendering effects applied on it (Figure 47);
- **A description** of what the build is about;
- **Technical and aesthetical details** of the build;
- **Builders** that were associated with the build;
- **The Minecraft building team** that was involved in its construction;
- **The client** who commissioned the creation of the build and their business details.

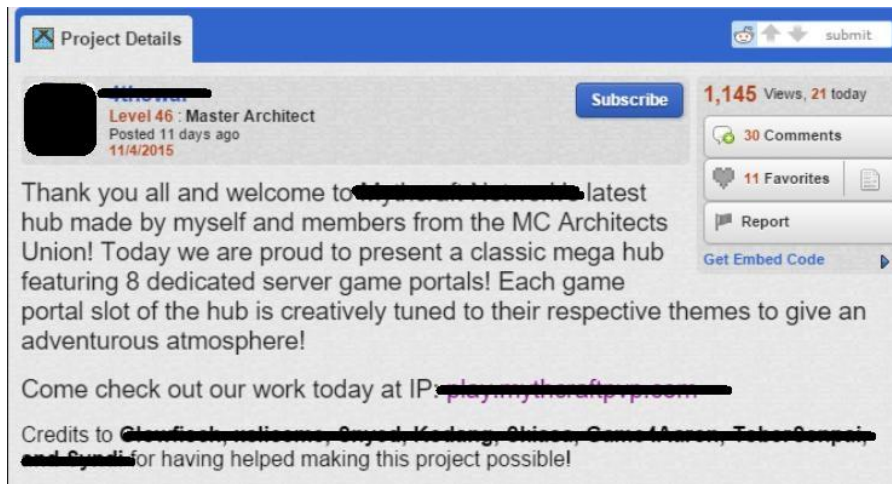


Figure 46 Description of a build, as found in a particular entry in PMC



Figure 47 Example of a build: in-game version (left) and 3D render (right)

Figure 47 depicts a typical example of how builds are presented via promotional materials. It becomes quite noticeable that the presentation in the left hand image (in-game view) is quite different from that in the right hand one (3D rendered version of the same build), with the lighting and the shadows being much more pronounced in the latter case. Besides that, the use of real-world background (the sea and the sky, on this particular occasion) is another thing to point out. Renders like that are considered to be one of the best ways of promoting someone's building skill, as they make the builds look more appealing to clients.

Finally, contractors and builders usually provide supplementary information (Figure 48) in terms of their work methods. More precisely, they might talk about:

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- **Who they are** and who they work with;
- **How they prefer to communicate with potential clients** (channels of communication, communication procedure, etc.);
- **Payment details** (whether they require a down-payment, how much they usually charge, a breakdown of their services, etc.);
- **Portfolio of their work** (as discussed above).

This information is very important for bridging the gap between the clients and the contractors, as it gives the former the resources they need in order to perform a number of actions, such as *finding contractors* and *establishing communication* (see chapter 4).

The image shows a screenshot of a website page. The top section is titled "About Us" and contains a paragraph of text. Below this is a "Commission Procedure" section with a numbered list of 9 steps. At the bottom, there is a "Spoiler: What is a Down Payment?" section with a paragraph of text. The text is partially obscured by redaction boxes.

About Us:
Hello there, I am [redacted]. I am currently managing this wonderful group of builders called the [redacted]. I have been a solo builder for quite some time and have built for many networks and servers. Although most of my work has been mostly done solo, I have collaborated with teams and other individual artists in the past too. Currently, I am apart of the [redacted] Build Team, but in past, have been apart of the [redacted] Build team.

The [redacted] is a collection of qualified solo-artists that aspire to assist each other in the commissions that the members partake in. We are not a build team, but rather more of a society. [redacted] members range from teams like [redacted] and as such you can be assured of our quality production value as individuals. The primary purpose of the [redacted] is to avoid middlemen build teams that take percentages off the hard work of builders and have the clients contact directly to the builders themselves. We provide a secure environment for all [redacted] members to conduct personal projects and commissions. If you have any inquiries about the [redacted] or wish to become apart of it, notify me via private messaging or Skype.

Commission Procedure
If you are interested in our services, please follow the steps below to begin the your commission:

1. Contact me here on Skype via private messaging or through Skype at [redacted]. You should see the name [redacted].
2. Once contacted, please provide a full build description, your estimated project price or budget, your expected due date, and your company name or title.
3. I will then notify you if I we are open to taking on the project.
4. I will relay the commission project to my fellow build friends in the [redacted] once I have deemed the project to be worth their endeavors
5. Before beginning each project, I will first ask to collect an upfront down payment. Depending on the project size, the down payment can be nothing to as much as 50%. However this will not apply to recurring clients or clients that I can personally deem trustworthy.
6. Once the project has started, you will be given regular updates and screenshots of your build's progress. Unfortunately, you will not be able to view the build in-game due to security reasons. Exceptions can be made for recurring clients.
7. During the progress of the build, you may request for tweaks and changes that may suit your fancy.
8. Once the build is complete, I will deliver a final image of the build along with a final invoice.
9. Once the invoice is paid in full and is confirmed, I will deliver the files to you via Mediafire/Dropbox as a schematic or world file. The choice is yours.

Spoiler: What is a Down Payment?
A down payment is a client's official approval to initiate a commissioned project. A down payment is typically any percentage of the full agreed price for the service. This is typically only applied to new clients with large projects, and the percentage can range well within 50% to a full 100% down pay request. Down payments, in a sense, represent an obligation by both parties to carry out their promised duties: to complete the work in full and to pay the contractor in full. If a project is canceled after the initiation, the down payment is refunded only if it were the contractor party who requested to cancel the project. The down payment is to be paid in full. However, if it is the client party who requests to cancel the assigned project, the down payment will not be refunded.

Figure 48 Example of the information regarding a union's services, as found in SMC

6.1.4.2 Personal Websites

Some teams have their own personal websites as an additional way of advertising their operations and presenting their work. This particular way of

self-promotion is apparent mainly in the context of building teams, instead of individuals who act as freelancers. Websites explain in much more detail the ethos of the team, as well as the specialisation of their members, who are presented and identified through the use of the handles they are known by in the community. On top of that, some of the teams refer to the various clients they had in the past as an additional way of advertising their capabilities, which becomes even more prominent in cases of big and well-known companies (such as Disney or Microsoft). Usually, a website is also the portal applicants have to go through in order to apply for a position in the team.

6.1.4.3 Twitter updates

In contrast to personal threads and websites, it became apparent that many Minecraft builders were presenting work-in-progress builds via Twitter, with regular updates over the course of the entire build. Retweets, comments and “likes” were also quite common amongst Minecraft builders. On top of that (and to paraphrase one of the participants), Twitter gives them the opportunity to present themselves as well as human beings that are active in the community and create Minecraft builds regularly, which helps in breaking “the ice” that usually exists in between clients and contractors.

6.1.4.4 Conventions

There are a variety of conventions, both physical and digital, that take place on an annual basis. One of those conventions was attended as part of the fieldwork (Cubed Con 2015), which was an online venue that gathers a diversity of players, ranging from professional builders who aim at acquiring exposure and receiving commission requests through it, to players who only care about the gaming aspects of Minecraft.

Professional builders (as well as teams) had a specific amount of space in the digital convention centre in order to advertise their work through it. This involved a short description of who they are, what they specialise in and their contact details (social media handles, Minecraft name, etc.) (Figure 49). Besides this, they included a few pieces of their work that were representative of what they could do.



Figure 49 Example of promotional material in an online convention

6.1.5 Recapping delivering the product

6.1.5.1 What is accomplished through delivering the product

With the successful completion of this segment, the clients and the contractors finalise all the transactions between them: (1) the former receive the product they commissioned, and (2) the latter receive the (remaining) amount of money they negotiated during *contracting*. Alongside that, (3) both these actors evaluate each other by endorsing the provided services or informing the rest of the community about any bad experience they had. Finally, (4) contractors update their online profiles (forum profiles, websites, etc.) by uploading promotional materials that illustrate their latest projects. This benefits not only the contractors but also the builders who worked on the project (as their names are mentioned in the promotions) and the clients (whose servers are promoted alongside the pictures that showcase the contractors' and builders' work).

6.1.5.2 How delivering the product is coordinated

Any of the above activities require coordination and articulation work between the involved actors. Payment, for instance, is coordinated via intermediary bodies; PayPal or escrow system organisations. In both of these cases, the resources exchanged in carrying out payments are (1) email addresses, (2) the product itself, and (3) money. Depending on the system in use, these resources are handled differently; with PayPal, contractors need to invoice the client by using their email address and attaching the product in the invoice itself. With escrow systems, on the other hand, all resources are handed to the system by the corresponding actor (clients hand in the money, while contractors the product)

and the system transfers them to their recipient only when both parties have provided their part of the deal and the contract has been successfully met on both sides.

The reason for using intermediary systems is related to the underlying practice of avoiding scamming. Escrow systems are responsible for all of the necessary actions in handling the exchange and as such clients and contractors should only hand in the payment and the build respectively. When it comes to PayPal, though, contractors need to take additional precautionary measures, mainly in the form of keeping proof of delivery (Skype logs or any other written evidence that demonstrate the negotiations that took place between them and the clients; attachments in emails; or directly attaching the constructed builds in PayPal invoices). These resources become actionable materials in the contingent scenario of clients accusing them of not delivering the build via PayPal's chargeback system.

Part of that matter is also the mutual evaluation between contractors and clients (which takes place in the form of contractors *promoting* the clients and the latter *vouching* for the former). Articulation work is necessary when it comes to blacklisting clients, as contractors have to fill a formal application to the blacklist holder (e.g. a union), providing a number of details, such as: (1) proof that scamming occurred; (2) client's details; (3) description of scam. The blacklists themselves constitute ad-hoc precautionary mechanisms for preventing scamming from happening and are maintained and shared amongst community members. They are used in order to raise awareness of who the offenders are.

6.2 DISTRIBUTING MONEY

This is the last segment in the arc of work, which is carried out by those that own the commission: the contractors. Having already received the final payment for *delivering the product*, they attend to distributing the payment to those that were involved in the commission.

6.2.1 Covering fixed costs

This scenario applies to team managers and occasionally to freelancers who subcontract their work to builders. In these two cases, the contractors withhold part of the payment in order to either *cover the managerial costs* of running their business or to have *personal gain* from the commission. A more elaborate explanation is provided in the following subsections.

6.2.1.1 Covering managerial and running costs

As was already mentioned in previous chapters (see section 4.1), running a team turns upon the collaborative effort of many individuals, such as: their owners, the administrators, the developers, the builders, etc. Whilst the exact roles and their responsibilities vary depending on the team, and no clear uniformity was observed during this fieldwork, many team owners elaborated on the fact that they had to attend to the salaries of those that were helping them run their teams. Essentially, contractors “*take a percent commission for running costs and management costs but they [the builders] end up with 60-70% of the total payment*” as it is necessary for reimbursing the server’s⁵⁹ staff, as well as paying the fees for keeping the “*server up and running for the people to build on*” (Spence).

Another matter that was brought up by a team manager was the internship programme his team was practising. The uniqueness of this programme was that it allowed for novice builders to work on commissioned projects that were generated under the name of the team. That benefited both parties (builders and teams), as the former would get experience by working in high-profile projects, while the latter would “*learn about the builder, learn about their talents, see if they can work to deadlines, see if their abilities are of high enough standards*” (Spence), in which case they (the builders) might be asked to join them (the teams).

This arrangement becomes of relevance to money distribution because it constitutes a form of financial protection: the contractors are only liable for the cost of paying the builder if the builder can operate at the required level. On top of that, it reveals an interesting scenario of how managing commissions and

⁵⁹ This refers to the server where building is accomplished, not the ones owned by clients.

progressing in the commissioning market is arranged. The interns do not get paid for their services, which effectively creates “*a buffer for themselves, so they work for free and we get \$300-400 off of their work*” (Spence). However, if the interns are offered a position in the ranks of the building team, then they “*get paid like they normally would*” (Spence).

Interestingly, this particular activity is one of the main reasons why organisations such as the unions emerged. The “managerial and running” costs were considered to be “*excuses*” (Paul) that were not appreciated by a number of builders, who collectively created the unions, practicing “*the motto of ‘fair pay for fair work’*” (Paul), meaning that everyone gets paid for the work they provided.

6.2.1.2 Keeping percentage for personal gain

Another reason for keeping a percentage cut of the total payment attached to the commission is the personal gain of those that subcontract the commission to others. This applies not only to the case where part of the commission is subcontracted but also to the scenario where the contractor does not participate in the building process at all. Essentially, outsourcing becomes the “*main revenue source rather than building itself*” (Georg).

6.2.2 Paying involved builders

Multiple scenarios of contracting work have been mentioned up to this point (assigning tasks to team members, assigning tasks to oneself, outsourcing commissions or even subcontracting parts of the work). In all of these cases, contractors need to pay those that were involved in their commission. The following sections briefly touch upon the two distinct cases of such an activity taking place, as was revealed through the conducted fieldwork study: *receiving full payment*; or *receiving payment relative to builders’ involvement*.

6.2.2.1 Giving full payment to an individual builder

This is a case that mainly applies to freelancers who assign the commissioned work to themselves. In such case, they receive the full amount of money that was designated during the contracting phase of the arc of work (see section 4.2). However, instances where builders received the full payment were also

mentioned, especially in the case of *sharing* a project via the established means of the union.

6.2.2.2 *Paying builders relatively to their involvement*

When it comes to cooperative projects where more than one builder was involved in the creation of Minecraft maps, team managers had to distribute payment based on each builder's work. Most of the team managers that participated in the study explained that the way they manage this type of work is by personally "*oversee[ing] all the projects*" (**Josh**) and distributing money based on their own observations and judgement about how much work a person did. Interestingly, one of them specifically said that: "*I will chat with them, make sure they are okay with it and go from that*" (**Josh**), meaning that they negotiated the payment prior to delivering it to the relevant individual.

A more formalised method of keeping track of builders' involvement was also pointed out by one of the participants. More specifically, his team adopted a points system for one specific project that was a contract with a high-profile company in the entertainment industry. They had three categories of points, depending on how demanding the builds that were assigned to the builders were. For "1 hour of easy work," for instance, the builders would gain one point, for "1 hour of moderate work," they would be rewarded with two points and so on. The final payment would then be the base hourly salary (as established in the context of this team's project) multiplied by the total points the builder was rewarded with.

6.2.3 Recapping distributing money

6.2.3.1 *What is accomplished through distributing money*

By the time this segment of the arc of work is carried out, all the parties that were involved in the process (builders, contractors, and the server's staff) will get their share of the commission's total price.

6.2.3.2 *How distributing money is coordinated*

Coordination work during money distribution becomes of significance when those that distribute the money (contractors) have to break down the payment into parts and calculate how much each involved individual needs to receive. In the scenario of contractors being freelancers and handling their own work or

sharing it via a union, the one who performs in-game building gets all the money. On the other hand, when more than one builder is involved in a project (e.g. in a team setting) payment needs to be distributed across: (1) builders, (2) server owners, (3) server administrators, etc. In these cases, contractors keep a percentage for covering the team's fixed expenses (server rent, paying their staff, and receiving a portion for themselves) and then calculate how much money needs to be allocated to each builder. Based on the methods revealed through the conducted fieldwork, this is done either informally (talking with the builders directly and asking them whether they are happy with the money that is allocated to them) or using formalised systems for tracking the amount of work each builder conducted. Interestingly, these calculations are not made based on work-hours, but rather on the number of builds produced by each builder. This is also reflected in how subcontracting (or sharing commissions) is done; contractors attach the price tag they negotiated with their clients to the commission and builders receive the stated amount of money upon delivering the product, regardless of the time it took them to finish it.

6.3 TAKEAWAYS

This chapter covered the last two segments in the arc of work of commissioning and creating a Minecraft map: delivering the product and distributing money to those involved in a project. All the activities entailed in the doing of these two segments are carried out outside Minecraft, as the game does not provide any of the necessary affordances for delivering the map to clients or distributing money to builders. In doing them, contractors and clients use third-party tools (e.g. Skype, PayPal or dedicated escrow systems) for sending builds and payments to each other.

A significant aspect entailed in both of these segments is that of ensuring that neither of the involved parties is going to scam the other. This is more prevalent on the side of contractors, who face the risk of not being paid by the clients. A number of precautionary measures are taken in order to avoid that, mainly in the form of keeping proof of delivering the product and screenshots of the conversations they had with the clients. These resources are relayed to PayPal in the contingent scenario where clients refuse to pay them. An additional

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measure is a record of all of the known scammers, which constitutes a community maintained document that is publicly available to everyone.

The finalisation of the arc of work results in all the parties receiving their part of a commission (clients: the map; contractors and builders: their money). Contractors though retain the right to promote themselves (and those that were involved in their commissioned project) by updating their personal websites or forum threads with pictures of and information about the new project. These promotional materials are one of the main assets clients use while scouting for contractors.

Chapter 7

7 DISCUSSION

This thesis is not the first to recognise the existence of digital economies that revolve around videogames. A particular strand of game studies literature focuses on exploring markets that emerge from creative labour practices that are situated inside videogame contexts, such as modding (the act of modifying original versions of any game) and the trading of virtual items in MMOGs. Nonetheless, it would appear from reviewing the literature that this is the first study to discover and unpack Minecraft’s digital economy.

This chapter first discusses the existing studies in **gaming economies** and connects them with **what is unique about Minecraft’s economy**. In doing so, it is argued that the study of Minecraft should be included in the research agenda that investigates emerging digital economies, such as the gig economy. A thorough explanation of **how this economy was missed** is also provided, which is followed by an argumentation over how the conducted fieldwork enriches the asserted **theoretical** viewpoints of others, how it contradicts them or how it re-specifies them.

This chapter concludes by contrasting academic **interpretations with explication** of members’ methods. It is suggested that in theorising Minecraft the work of accomplishing UGC production becomes “invisible.”

7.1 GAMING ECONOMIES

Historically, games have been considered “non-serious” (Huizinga 1964) and “unproductive” (Caillois & Barash 1961). Caillois, in particular, wrote:

“The preceding analysis permits play to be defined as an activity which is essentially: ... Unproductive: creating neither goods, nor wealth, nor new elements of any kind; and,

except for the exchange of property among the players, ending in a situation identical to that prevailing at the beginning of the game.” (ibid.)

Regardless of the fact that these writings can be traced back to the 1970s and refer to games that take place in the physical world, they remain popular amongst contemporary scholars who study digital gameplay. Recent developments in the gaming industry, with the emergence of UGC driven games, occasions the rethinking of the notion of unproductive play. In fact, Pearce (2006) coined the term “productive play” to refer to these in-game activities that resemble work settings (mainly due to their laborious and time-consuming nature).

These practices, being manifested in many different contexts (e.g. modding, MMOGs, and virtual worlds) led to the emergence of digital economies and collaborative practices that are situated both inside and outside of the context of digital games. This section elaborates on these economies.

7.1.1 Modding

The most well-known type of UGC in the gaming industry is “modding” and refers to the practice of producing “mods” (short for modifications) by modifying a commercial game (Postigo 2003). Even though the modding scene originates back to the early days of the videogames medium, it is difficult to trace its exact emergence due to the fact that “every little alteration made to the program code of any commercial entertainment software, can be treated as a mod” (Sotamaa 2004). What is certain is that it was popularised when id Software⁶⁰ granted players access to the original media files of their games, which allowed the latter to modify and replace game assets (in-game textures, sound files, player avatars, etc.) with those of their own creation (Van den Bosch et al. 2011).

Existing bodies of literature have looked into the modding phenomenon from many different perspectives, such as: the roles of those that engage in modification practices (Postigo 2007; Sotamaa 2010b); the motivations for

⁶⁰ http://www.idsoftware.com/?/age_gate

participating in the modding community (Postigo 2007; Sotamaa 2010b; Jansz & Theodorsen 2009; Sotamaa 2004); the professional prospects that can emerge by engaging with this practice (Sotamaa 2010b); the ways modding teams are organised (ibid.); and the types of mods that are created (Sotamaa 2003). Due to the fact that mods are essentially content that supplements the original version of a commercial game, they increase the game's longevity and occasionally result in financial gain on the side of the game's developer company (Postigo 2003; Postigo 2007; Poretski & Arazy 2017). Furthermore, modding takes place outside of the borders of the game, through the use of specialised tools, such as game engines, design software or scripting languages (Postigo 2007; Tavares & Roque 2007).

7.1.2 MMOGs and the emergence of game economies

Another setting that sparked the emergence of in-game activities that were assigned labour connotations is that of MMOGs (Nardi et al. 2008). Play in these games involves a significant amount of repetitive actions, such as the killing of monsters for the acquisition of rare items (which are colloquially referred to as “drops” or “loot”). Players can use these items as part of their character progression inside the context of the game or trade them with other players or vendors inside the game for game currency (e.g. gold) and items. Regardless of the in-game functions these items serve, they soon became the product of an unregulated market, as players started trading them for real-world money, an activity that is referred to as “Real Money Trading” (RMT)) (ibid.).

7.1.2.1 The work in MMOG digital economies

Castronova (2008), in his seminal work in EverQuest Online⁶¹, was the first to point out the existence of economies in MMOGs. His analysis looked into not only the virtual economies that manifest inside the context of the game and partake in how it is played but also how in-game actions can lead to the realisation of real-world digital economies. As was described above, the acquisition of any type of in-game items is one of the predominant features entailed in playing said games. These assets play a role in the game's currency, as they can either be sold to other players or in-game traders for in-game money.

⁶¹ <https://www.everquest.com/home>

Transactions such as these are legitimate, due to the fact that they are afforded by the game itself and constitute part of game's virtual economy (ibid.). Their presence in the game is an intentional design decision by the game's developers (ibid.) and partake in many sides of playing the game. For example, players would not be able to progress without (1) killing monsters, (2) acquiring gold or good loot and (3) using the acquired goods for buying new equipment.

The question that emerges is whether these virtual economies have any significance to real economies. Some would claim that virtual economies are effectively constrained to the world of the game, where they are enacted. Castronova, on the other hand, argues that as long as the content in virtual worlds is granted monetary value by the players, in-game economies and virtual loot effectively become part of the real-world economy too (ibid.). In fact, trading of virtual items for real-world money indeed takes place through auction sites like eBay or dedicated websites that specialise in this business⁶².

Essentially, what is involved in this business is for players to upload auctions of their avatars⁶³ or specific virtual goods they have in the game and selling them to the highest bidder for a specific amount of real-world money. When an auction is over, players (buyers and sellers) meet online to exchange the auctioned digital goods. This transaction solidifies the connection between virtual and real-world digital economies, by blurring the boundaries between them (ibid.). Of course, this phenomenon has led to the emergence of an unregulated market that manifests outside the borders of the game and in many cases, as discussed below, breaks its structure.

7.1.2.2 The commodity in MMOG digital economies

The discussion about virtual economies and their connection to real-world digital economies raises the question of what is the capital in the context of MMOGs. As Castronova argues (ibid.), one of the dominant forms of capital inside the social context of virtual worlds are the accumulated digital assets that partake in gameplay, such as: avatars' experience points and acquired skills,

⁶² <http://www.mmorpg-shop.com/>

⁶³ In-game representations of a player's character, which hold all the equipment and the skills the player has accumulated over the years of playing the game.

equipment, gold, and weapons. Towards the acquisition of all of these items, players invest a multitude of hours playing the game. To quote Castronova:

“The avatar’s stock of experience points, skills, and possessions is a capital stock, just like capital stocks on Earth. Possessions are like physical capital, and avatar skills and experience levels are like human capital. There, as here, investments in capital stock increase the power of the investing entity.”

In essence, the value that is attached to these virtual assets depends on the time and effort it takes for one to accumulate them. The commodity, both in the virtual economy of MMOGs and in their real-world counterparts, is based on the scarcity of these goods. As such, commonly found items are sold for small amounts of money, while rare ones will fetch huge prices that might rise up to the margins of thousands of dollars (Dibbell 2006). Of course, by themselves they have no real-world value at all. However players assign a price tag to them based on the meaning and use these items have in the societal context of the game (Lastowka & Hunter 2004). On top of that, their prices fluctuate, as items that are initially perceived as rare might end up becoming commonly available to players due to finding methods of easily acquiring them and providing them to the market (Dibbell 2006).

Dibbell (2006; 2007) goes into more detail with regard to how these economies are enacted. His interest in the setting led him to immerse himself in the business of “gold farming⁶⁴.” His accounts touch upon not only the actual activities of RMT but also on the overall structure of the market and how those who wanted to maximise their profits essentially exploited the games’ mechanics by finding ways of quickly accumulating rare in-game items and then selling them on eBay. In doing that, they were either hiring professional players who repeatedly performed the same in-game actions (e.g. killing the same monster over and over again in hopes of receiving rare drops) or by creating scripts that performed these actions automatically, without the need of any hired employees.

⁶⁴ Internet slang that refers to the repetitive killing of monsters in order to acquire rare items that are dropped by the enemies, upon being slain by the players.

This insight is further enriched by Tai and Hu (2017) who revisited the topic of Chinese gold farming 11 years after Dibbell's inaugural investigation. Their main motivation for doing so was the existing literature's lack of academic rigour (Nardi & Kow 2010), especially due to the fact that it was based on cursory investigations or journalism articles. Through their work, they provide examples of the offices, the working conditions, the roles involved in this business, and the motivations of those engaging in it. Along these lines, Zhang and Fung (2014) supplement the existing knowledge base of this business, by exploring the guild business in China, which they refer to as a "secondary industry" that sits in-between players and videogame companies. More specifically, they talk about how guilds (groups of players with a hierarchical structure, which organise events and tactics in specific MMOGs) become profitable businesses that are not only responsible for managing players and in-game actions, but also advertising new and existing MMOGs, finding subscribers for particular games, maintaining the player base for existing games, etc.

Of course, the biggest profiteers in this market are not the ones who engage in manual labour, but those who develop these scripts (called "macros") in order to acquire loot for them (Dibbell 2006). Whilst these practices brought monetary gain to those that engaged in this business, they became problematic for the players, as they soon destabilised the game's virtual economy. More specifically, acquiring rare items and escalating inside the game's ranks became a matter of not necessarily playing the game and spending time in game scenarios, but rather buying goods through the unregulated digital economy described above. On top of that, players' own gameplay was impeded by the influx of bots⁶⁵, as the latter could kill monsters and receive loot quicker and more effectively than them. These practices soon became illegitimate ways of engaging with the game (Burk 2010) and eventually led to a backlash within the community. Even the games' developers took a stance against gold farmers by banning their accounts and prohibiting any RMT (Dibbell 2007). Similar

⁶⁵ Bots constitute in-game avatars that are controlled by computer programs or macros instead of players. Bots are used mainly for automated actions, such as the repetitive killing of the same enemy.

destabilisation and backlash was also reported in the context of company-supported monetisation schemes that were integrated in Diablo 3⁶⁶ (Prax 2012; Prax 2013).

7.2 WHAT IS UNIQUE ABOUT THIS ECONOMY?

As was discussed in section 7.1.2, it is undisputable that virtual (in-game) economies extend the borders of the games they originate from and give rise to real-world digital economies. Whilst similarities can be drawn between them and Minecraft's commissioning market, it is imperative to point out where they differ, how they differ and in what ways this affects the structure of the communities around games. In doing so, this section draws out similarities and differences between Minecraft's commissioning market and the digital economies that revolve around MMOGs⁶⁷. On top of that, it discusses how predominant beliefs regarding modding can be revisited and re-examined via this thesis' study of Minecraft.

7.2.1 Comparing commodities

The key aspect of this whole business is the commodity that is being monetised inside Minecraft's commissioning market. Some might assume that this would be the actual maps that are handed to the clients. In reality, what is sold is the builders' time. Minecraft's EULA specifically prohibits the monetisation of in-game material. Because of that, those that participated in this research made it quite clear that they "do not sell blocks" but their time; the commissioning market revolves around the monetisation of the service of building in-game content and delivering this content to the clients. This means that the builds that are being created through the builders' efforts are free items that do not belong to someone in particular. The service, on the other hand, of creating these builds is something that belongs to the individual offering it, hence it can be monetised without violating Minecraft's EULA.

The creative nature of the commodity inside Minecraft's commissioning market is also revealed through the matters that clients and contractors discuss while

⁶⁶ <https://us.battle.net/d3/en/>

⁶⁷ Part of this discussion is appropriation of already published material, see: (Koutsouras et al. 2016).

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establishing the exact specifications of a build. As was discussed in chapter 4, things like the size of the build, the number of functional characteristics, as well as the inclusion of aesthetic elements result in higher price tags for a commission. These, alongside contractors' experience and reputation in the community, are parameters that define the prices individuals charge their clients in order to carry out a job.

This discussion occasions a comment with regard to the nature of the work itself and how this is linked with the commodity. In MMOGs, what is monetised has the form of virtual items that are earned through routinised activities, such as the continuous killing of specific enemies in hopes of receiving a rare item dropped by one of those slain. Value, in this case, is attached to those items mainly for the time needed to acquire them. Furthermore, these items are created by corporate environments that run these games and aim at being used for purposes related to playing. Minecraft creations, on the other hand, are not something pre-defined by companies and corporate environments, but something that stem out of the imagination, creativity, and hard work of those involved in their production. The value of the item that is at the centre of the transactional practices that take place inside the creative community is a culmination of these characteristics and hence is attached to the creators themselves (their skills and expertise in creating content), instead of the virtual items (the Minecraft maps) that are traded.

Where value is placed raises the question of what drives the demand in each of these cases. In MMOGs, as suggested by Castronova (2001), demand for virtual goods derives from the scarcity of said goods inside the game. This scarcity is an outcome of the game's design, which gives rise to a playful environment where players' time and hard effort is rewarded, while also leading to an in-game player hierarchy based on their experience and equipment. Essentially, the commodity in the digital economy that permeates these games constitutes of non-singular objects that are rare to come by. The ones that manage to find ways of acquiring most of these items are the ones that (1) set the market price for the commodity and (2) earn the most, usually in direct conflict with those that want to play the game legitimately. Dibbell even describes a cartel system that was set up by the biggest profiteers in the market, who came to an

agreement as to the prices they ask from players in order to diminish competition between them and maintain a leading status in the market (Dibbell 2006).

The value of UGC is also associated with the singularity of digital content. By nature, digital content in Minecraft cannot be singular, as there can be limitless identical copies of any item that bear the same characteristics and capacity as the original. Commissioning the work though changes the dynamics in this concept; regardless of the fact that content can have multiple instances, it remains singular because only one client gets access to it or only one player retains access to it, without sharing it with others. The ones who receive a Minecraft map by commissioning its creation acquire ownership over it, as they are the only ones who have access to it and use it as part of their business.

Regarding scarcity, in Minecraft's case, there is no scarcity of existing goods, as no goods pre-exist; demand revolves around the acquisition of maps that are created by professional players, which are subsequently used in various mini-games. The commissioning market is built around this demand and aims to satisfy it with the continuous production and provision of aesthetically-pleasing builds.

7.2.2 Digital economy contributes to Minecraft's development

A matter that was previously raised with regard to RMT of virtual goods is how it destabilises a game's economy and consequently detracts from the players' experience. This warrants further discussion, especially by putting it in contrast to how Minecraft's commissioning market plays a role in its development.

Christiansen (2014) has already talked about the vibrant modding activities that expand Minecraft's play possibilities through mini-games. As pointed out by the findings presented in the previous chapters, Minecraft servers, which run these mini-games, play a fundamental role in the success and maintenance of the parent game. Besides that though, the content that they house and subsequently offer to the players is created by the builders of the creative community, who are commissioned by the server owners for the delivery of their creative work. This extends the existing literature on the effects of monetisation practices in similar gaming environments, where it is argued that

monetising content can potentially negatively influence the player experience (Prax 2013).

Lehdonvirta (2008) explains that this might be the case due to breaking down the hierarchical achievement and progress in the game because of the exogenous acquisition of in-game items through RMT. Such digital economies go against the game's mechanics, as there is an already established and functioning virtual economy that is part of the game and partakes in players' development in its context. The real-world digital economies that capitalise over in-game virtual items self-impose themselves on how the game is structured and played.

Minecraft's case is quite different; the commissioning market emerged from the game's creative community, and it contributed to the game's current form. The community has reached the point where servers grow in tandem with the game and the commissioning market; as long as there is the need for new ways to play, there will be the need for professionally crafted Minecraft maps. As such, the way the game is developed (not just by Mojang, but also by the players) is intertwined with this market.

On top of that, Minecraft did not have a pre-existing economy that set the premises of how in-game transactions can be made. The digital economy that is discussed throughout this thesis emerged out of the need for having a constant provision of nice-looking maps and new gameplay experiences. It was a community-led initiative that was and still is, run by members. There is no direct tension or clash between those who play and those who create for money.

Prior to closing this section, Harambam et al.'s (2011) work needs to be mentioned and contextualised in the arguments that were raised in the preceded paragraphs. These authors made similar claims with regard to the problematic dichotomy of Huizinga's theorisation over play being unproductive (Huizinga 1964) and argue that a more lenient approach to the subject is necessary, as not all productive activities degrade play. More precisely, they point out four commercialisation categories, which bear different characteristics as to how monetisation practices affect players' experience:

- First order commercialisation: the game itself is the commodity and players acquire access to play only after they pay the relevant price.
- Second order commercialisation: the existence of real-world markets that capitalise gaming content, destabilise the game's virtual economy and have a negative effect on the gaming experience.
- Third order commercialisation: the tension between real-world monetary transactions and the virtual worlds of a game are bypassed by incorporating monetisation practices in the game's context.
- Fourth order commercialisation: external bodies (especially multinational companies) take over the game in pursuit of financial gain, which detracts from the gaming experience.

Whilst a legitimate problem is set out to be addressed through this work (categorisation of play activities through binary dichotomies of what is and what is not play), the authors' arguments could potentially be contradictory due to the fact that they themselves end up categorising the matter. The problem of categorisation is further discussed later on (see section 7.4).

7.2.3 Minecraft and modding

There are some interesting comparisons that can be made between the commissioning activity in Minecraft and modding culture. The community that revolves around modding shares many similarities with participatory culture, as in both of them participation and contribution to the community are valued more than actually earning a living out of the work of supplementing a "text"⁶⁸ (Jenkins 2006a; Poor 2013; Postigo 2003). This view is so strong inside this particular community that Valve's⁶⁹ recent initiative of giving monetisation privileges to those who distribute their mods through the company's platform (Steam⁷⁰) was countered by the community, which eventually led to the retraction of said initiative⁷¹. Even though there are instances of employment being occasioned through developing mods (Postigo 2007), there is the general

⁶⁸ In participatory culture, a text is a common phrase that refers to the original instance of media content, which is consumed and supplemented by the fans (Jenkins 2006b). In the context of videogame modifications, the original text would be the original version of a game.

⁶⁹ <http://www.valvesoftware.com/>

⁷⁰ <http://store.steampowered.com/>

⁷¹ <https://www.forbes.com/sites/insertcoin/2015/04/27/valve-takes-down-skyrims-paid-mod-store-after-mass-protests/#5491854b9afd>

belief that work on the construction of mods is free labour, which benefits the companies that develop games, but has no direct (if at all) monetary profit for the modders themselves (Postigo 2003).

Kücklich (2005) has coined the term “playbour” in order to refer to the notion of companies capitalising and profiting from the unwaged work of modders, since the latter create content that belongs to the former, in exchange for the right to experiment with the game’s assets. The work practices that are enacted inside Minecraft’s creative community diverge from this notion and do not bear the negative connotations assigned to it. Even though a significant part of the continuing success of the game is indeed attributed to players’ involvement in creating content for it, they (the players) have deliberately extended the modalities of play that can be supported through it and, in parallel, have found ways to financially support these preferences, develop personal skills and generate income through the commissioning market. In contrast to modding, this is something that the players themselves have endorsed, as a community, and has not been countered or prohibited by those that own the game.

Essentially, Minecraft’s commissioning market constitutes an actual digital economy, which revolves around the provision of paid services. Many participants mentioned that they do indeed give away creations for free, out of goodwill and due to their own interest in helping the creative community. However, there is a clear distinction between those that play the game for fun and those that build for money. The following sections further elaborate on emerging digital economies that Minecraft relates to.

7.2.4 Minecraft and the gig economy

The purpose of this section is to propose situating the study of Minecraft’s digital economy within the broader research agenda that looks into the gig economy. In doing so, the existing literature about crowdwork and on-demand work through applications is visited, drawing out the main characteristics of these activities and connecting them with creating and commissioning Minecraft content. This proposition is further supported by members’ own methods and terminologies they use when they refer to their work practices.

7.2.4.1 *Minecraft's relevance to the gig economy*

De Stefano (2015) compiles a definition of the gig economy by bringing together a number of academic publications and journalism articles that discuss the matter. He argues that this is an umbrella term that is colloquially linked to two specific types of labour: crowdwork (the distribution of small tasks through online services, the completion of which is carried out by individuals who get compensated for their time (Bergvall-Kåreborn & Howcroft 2014; Cherry 2010; Felstiner 2011; Oostveen et al. 2013)) and “work on-demand via apps” (real-world work activities, such as taxi driving or delivering products, which is fulfilled by individuals who acquire access to such tasks via mobile applications (Aloisi 2015; Dagnino n.d.; Greenhouse 2015; Rogers 2015)). Others have provided classifications of these types of work based on their underlying business models, diversifying sharing economy, from crowdsourcing and offline crowdsourcing (Todolí-Signes 2017).

The exact classification of work and of the economies that surround them falls outside the scope of this thesis, however it is evident that terms such as “sharing economy” and “gig economy” are used or discussed in similar contexts, while “crowdwork” and “on-demand work” are contextualised under the same research interests and investigations (Lampinen et al. 2016; Lampinen et al. 2015; Dillahunt et al. 2016)⁷². These matters are of direct relevance to the presented commissioning market, as the findings the conducted fieldwork brought to light present a novel digital economy setting that emerged out of Minecraft and shares many common features with the aforementioned settings.

Of course, on-demand work and crowdwork are, by no means, identical between themselves or with Minecraft commissions. There are clear differences between the former two and the latter one that need to be laid out. One such difference is that these services are centred on a service provided by a company (such as Uber⁷³, Amazon⁷⁴ or Deliveroo⁷⁵), while Minecraft commissions are a grassroots initiative, led by the players. This has consequences for the ways in

⁷² Due to this, the terms “sharing” and “gig” economy are used interchangeably.

⁷³ <https://www.uber.com/en-GB/>

⁷⁴ <https://www.amazon.co.uk/>

⁷⁵ <https://deliveroo.co.uk/>

which contracts between clients and contractors are set and completed. There is no centralised hub for securing that a client and a contractor have agreed upon a particular commission. It is a market that is mostly run on trust, with those involved in it expecting that the other person is going to keep their promise of delivering their end of the deal.

Even so, there are similar matters that plague all of these markets. When it comes to crowdwork, for instance, the regulation of the work depends on the companies that run the services (e.g. Amazon) (Martin et al. 2016), which puts the requesters (those that advertise jobs through the system) in an advantageous position over those that do the work (Martin et al. 2016; Irani & Silberman 2013; Gupta et al. 2014). Crowdwork environments, in particular, have been criticised of “dehumanising” work (De Stefano 2015) as workers’ labour becomes invisible to the requesters (Irani & Silberman 2013), which is also reflected on Amazon’s CEO (Jeff Bezos) description of Amazon Mechanical Turk (AMT)⁷⁶: “You’ve heard of software-as-a-service. Now, this is human-as-a-service”⁷⁷. Essentially, human labour is parallelised with routinised computational tasks; jobs that are performed by machines and require no human input. In addition to that, Irani and Silberman (ibid.) note that requesters can reject the completed work and refuse to pay workers on the premises of not being satisfied with the result. Workers’ complaints over unfair treatment usually go unheard due to the fact that there is plenty of available workforce for each job, which renders individual workers disposable. This sense of unfairness has led to the emergence of unionisation initiatives in Turkers’ community (Martin et al. 2014), as well as the design and development of tools⁷⁸ that give Turkers the ability to review and criticise requesters’ actions.

There are multiple parallels that can be drawn between such practices and Minecraft commissions. Given that AMT is a service run by Amazon, the parent company decides the exact ways in which transactions between requesters and

⁷⁶ AMT provides the affordances for the delegation of small tasks (referred to as “microtasks”) to individuals that are registered to the system. Those that perform the tasks are called Turkers, while the ones that request them are the Requesters. Each task is accompanied with a monetary reward, which constitutes the main financial revenue for those that engage in the system (Martin et al. 2014).

⁷⁷ <https://www.technologyreview.com/s/406585/jeff-bezos-of-amazoncom-on-web-services/>

⁷⁸ <https://turkopticon.ucsd.edu/>

workers are going to be arranged. In Minecraft' case though, Microsoft and Mojang have power only over the resources that are related to the game itself and the services they themselves provide. They cannot directly control or prohibit, for example, the market that emerged out of their game, as long as the services that are entailed in it do not violate the game's EULA, which protects their IP. As already discussed, one such case is selling Minecraft content in its original file format; this file format constitutes part of Mojang's property, as it bears the game's original code. Minecraft players, however, managed to bypass these limitations by monetising the service of creating content (their labour). In other words, the act of creating is paid for, as it accounts for the players' time while sharing the content with the clients is a free gesture.

This does not mean though that Minecraft commissions come without any dangers. As was raised by multiple participants and accounted for in this thesis' findings, the market is structured in such a way that the clients are the ones that have the upper hand over transactions, instead of the contractors and builders. This is the case because of the lack of centralised solutions for handling payment and the adoption of third-party technologies towards accomplishing this part of commissioning. Given that PayPal sides with those that pay money (the clients) instead of those that receive them (the contractors), Minecraft professionals find themselves in a disadvantageous position in the market, even though they are the ones that provide the creative services of content generation.

These matters resonate with CSCW's and CHI's research interests in investigating the gig economy. A series of workshop papers, for instance, articulate the need to set up the agenda for the study of the work settings that are situated in this economy, especially in terms: of the opportunities that emerge through them; potential dangers; how members collaborate and develop trust in them; understanding who the actors that engage in these markets are (Dillahunt et al. 2016; Lampinen et al. 2015; Lampinen et al. 2016; Hansson et al. 2016; Ross et al. 2010). On top of that, crowdwork is a setting where members act in a collaborative manner to cover many of their needs (e.g. securing the legitimacy of requesters and finding the best jobs) (Gray et al. 2016), much like Minecraft builders do.

Given the continuing growth of the gaming industry and the emergence of new markets and digital economies in its context (such as Minecraft's commissioning market and eSports⁷⁹), it is fair to propose the inclusion of the work that is entailed in these economies in this research agenda.

7.2.4.2 The relevance of members' methods

The proposition of incorporating the study of Minecraft's commissioning market (and other game markets that share similar characteristics) into the existing research agenda that looks into emerging or well-established digital economies (such as the gig economy) is driven not only by this thesis' position; members' methods also necessitate rethinking how game-related markets are conceptualised and studied. Members personally engage in tasks that promote their work security and bootstrap the social organisation of the commissioning market in such a way as to minimise dangers and malpractices. On top of that they bring together an assemblage of technologies and resources to make the market work, which is not feasible through the original and unmodified Minecraft, as it does not provide the affordances to support professional work.

Along the same lines, many members have created their own companies and engage in real-world events that promote Minecraft as a creative tool and a new form of art⁸⁰. It is common for members to refer to themselves not as "players," or "gamers," but rather as "animators," "artists," "designers," or "developers," based on their personal expertise and preference. Consequently, they perceive what they do as a form of labour that brings them money and, in many cases, helps them maintain a living, pay bills and develop professionally. Their resolve in associating their practices with professional work gave rise to the anecdotal phrase "We don't sell blocks" (Koutsouras et al. 2016), which was mentioned by multiple participants across the two years the fieldwork lasted. This sense of professionalism is also reflected on various initiatives that were undertaken by many in an effort to oppose unfair treatment and sharing of commission revenue

⁷⁹ <https://www.theguardian.com/sport/2017/jun/16/top-addiction-young-people-gaming-esports>

⁸⁰ <https://www.blockworks.uk/>

(such as unionisation and the development of records for assessing clients, as discussed throughout chapters 4, 5, and 6).

7.3 HOW WAS THIS ECONOMY MISSED?

Regardless of the fact that an extensive body of work has looked into the digital economies that revolve around MMOGs, Minecraft's invisible digital economy went unrecognised by academic enquiry until now. This thesis presents the discovery of this economy, as well as the lived-work of creating Minecraft content. This occasions the question of how such an economy was glossed over by the existing literature, even though there was a clear trajectory in studying monetisation practices in videogames.

This section aims at answering this question, by presenting the current studies in Minecraft, as well as other videogames (e.g. LittleBigPlanet⁸¹) that fall under the same category as the former, namely: sandbox games. Even though videogames of this type may differ in aesthetics and goals, they share similar gameplay modalities, especially with regard to creating, distributing, and playing with UGC.

As will be discussed in the following pages, Minecraft, in particular, has been explored primarily from a ludic perspective or as a means of investigating others subjects, instead of a field of study in itself⁸². It is argued that these explorations provide only cursory understandings of what is actually involved in creating content in Minecraft, which result in masking significant aspects of the game, such as its underlying digital economy and the cooperative work involved in “making the economy work.”

UGC – an umbrella term that covers everything that is created and uploaded in digital spaces (Lastowka 2007) – appears to have an increasing presence in the gaming industry, with the emergence of sandbox videogames that offer the

⁸¹ <http://LittleBigPlanet.playstation.com/>

⁸² There is a major strand of work that looks into Minecraft's educational applications (Ames & Burrell 2017; Short 2012; Bos et al. 2014; Schifter & Cipollone 2013). Whilst this topic needs to be acknowledged due to its wide reception from the academic community, it falls outside the direct scope of this PhD thesis and will not be discussed in further detail. As was discussed in the Introduction, the main motivation for this project is to treat Minecraft as a field of study in itself and not a resource for other academic pursuits.

affordances of creating, playing and occasionally sharing UGC as part of their gameplay experience (Ross et al. 2012; Abend & Beil 2015). These games differ from other practices of in-game content production (such as creating maps via the use of map editors, a very common practice in strategy videogames) mainly because the creation of content is not a secondary mechanic players might attend to, but rather the main gameplay modality the latter are introduced to from the very first moment they start the game. Their unique gameplay style raises questions over players' motivations, as there are no clear or prescribed rules, goals and narration to follow (Abend & Beil 2015).

Content generation is a common feature in MMOGs (such as World of Warcraft⁸³) and virtual worlds (such as Second Life⁸⁴ and There.com⁸⁵) too. Creative practices in these settings have received academic attention (Pearce 2009; Brown & Bell 2004), however creating content differs between MMOGs and UGC-driven games, as it only supplements the former's gameplay experience (Koutsouras et al. 2016). Due to the increased popularity of UGC-driven games, they became the focus of much academic enquiry, with Minecraft being in the spotlight of most of this research.

One of the earliest focuses in studying such videogames was the constituents of the gaming experience players have while immersing themselves in their digital worlds. Duncan (2011), in one of the seminal works on Minecraft, elaborates on what makes it such an appealing videogame. He emphasises the two modes of play (survival and creative) and discusses how the combination of these two leads to an enjoyable experience. One of the main points he raises is how this experience revolves around experimentation, which comes into play when players try to figure out what to craft in order to survive. The article concludes by naming Minecraft's gameplay as "emergent," a characterisation that derives from the fact that ways of playing and creating emerge as players experiment with the variety of tools they have at their disposal in-game.

⁸³ <https://worldofwarcraft.com/en-us/>

⁸⁴ <http://secondlife.com/>

⁸⁵ <https://www.prod.there.com/>

Ross et al. (2012) touch upon the notion of experimentation as part of the core gameplay experience in said games too. In examining the types of levels players create in *LittleBigPlanet*, they selected and played a number of community creations and typified them based on their gameplay genre. According to their own experience of playing various community-created levels, they argue that players initially create content that matches the games' original aesthetics and playstyle while familiarising themselves with the available creative tools and developing their competence in using them. Once doing so they start utilising said tools in creative and intuitive ways that push the games' boundaries. Along the same lines, Banks and Jason (2010), as well as Ames and Burrell (2017), elaborate on how external to the game assets (such as posts and walkthroughs on fora) constitute essential materials for playing the game, as players' actions draw upon the consultation and usage of a number of distributed resources, such as online tips and walkthroughs.

These examples hint to the distributed nature of *Minecraft*'s ecosystem. Redmond (2014) discusses this matter too, by arguing that players' involvement is of importance to *Minecraft*'s success and development. These practices are manifested in the form of forum participation, polls⁸⁶, server development, modding and obviously in-game content production. Modding has a special place in *Minecraft*'s community, as Mojang allows for the game's free alteration, as long as no original code is changed, monetised and distributed⁸⁷. This resulted in the introduction of servers by third parties that run modified versions of the game, which constitute a big part of *Minecraft*'s current state (Christiansen 2014).

More hints of the distributed nature of *Minecraft*'s creative community can be found in Ringland's overall corpus of work in this setting (Ringland, Wolf, Faucett, et al. 2016; Ringland, Wolf, Boyd, et al. 2016; Ringland et al. 2017). Ringland et al. (2017) conducted an extensive ethnography (which includes a wide variety of data resources, such as: field notes, video and audio recordings,

⁸⁶ Polls were very popular in the original version of the game, during which the developers were asking the players which features to be included with each update. (Redmond 2014; Duncan 2011)

⁸⁷ This is pointed out in the game's EULA, as was discussed in previous chapters (see section 3.3.1)

chat dialogues, interviews, forum posts, etc.) in a particular Minecraft server⁸⁸, looking into the equity prospects the system provides for youth with autism. Their work teases out a number of interesting findings with regard to how the community is structured and how Minecraft players create in-game content. More specifically, they elaborate on the references (e.g. videos on YouTube or Minecraft images found via Google searches) (Ringland et al. 2017), and the tools (Ringland, Wolf, Boyd, et al. 2016) players appropriate while building. On top of that, the significance of matters such as building trust and sharing communal digital spaces (e.g. houses inside Minecraft) in establishing a social circle inside the studied Minecraft server is touched upon (Ringland, Wolf, Faucett, et al. 2016).

Along these lines, Niemeyer and Gerber (2015) discuss how community members produce tutorials for Minecraft building, which Minecraft players consult in order to improve their creative skills. As the authors suggest, these assets are part of the “metagame” that surrounds Minecraft, which includes all these practices that revolve around developing supplementary content to the original, commercial, version of the game.

Another ethnographic investigation into the in-game practices of playing Minecraft is provided by Pellicone and Ahn (2014; 2015) who use Minecraft as a case study in rethinking the use of affinity spaces⁸⁹ (Gee 2004) in investigating digital gameplay. Their findings elucidate on the roles players take while engaging with the game (such as server administrators), which are based on their expertise (Pellicone & Ahn 2014). In addition to that, the researchers found that Skype was used as the main means of forming connections between players, discussing the game, sharing knowledge and playing (Pellicone & Ahn 2015).

Finally, a number of researchers have looked into how studying Minecraft can inform the design of co-creative technologies or productivity software (such as CAD systems). For instance, French et al. (2016) conducted an online survey with the aim of finding out how Minecraft players collaborate in-game. The

⁸⁸ <http://www.autcraft.com/>

⁸⁹ Affinity spaces are physical or digital places where people of diverse backgrounds might come together and interact out of shared interests or goals (Gee 2004).

outcome of their survey points out some of the collaborative matters players attend to while creating content in Minecraft, such as managing teams, delegating tasks, scheduling and planning.

This is also supported by Walsh et al. (2015), who used a game similar to Minecraft (KidCraft) as part of a number of workshops they conducted with children in order to explore how a digital game can function as a design tool in co-located and distributed settings. The researchers found out that being able to communicate with others was a valuable asset to the players, especially due to the distributed nature of the setting. In addition to that, a number of collaborative aspects emerged, ranging from asking technical questions regarding in-game building, to the distribution of tasks towards the completion of a common project. The authors also note some further findings with regard to UGC production that were of importance to the players, such as claiming ownership over their creations and the increased availability online persistent worlds afford with regard to joining sessions with other players in remote areas.

These bodies of work pave the way in forming an initial understanding of Minecraft's creative community and the work of creating in-game content. By either studying the ludic aspects of playing Minecraft or treating it as a setting that fosters interactions relevant to other fields of study, they manage to provide fragments that partake in the practices members attend to while building UGC. It is quite clear that there is a general consensus towards the distributed nature of this work, as the various resources and technologies that come into play are recognised by the literature.

Even so, these understandings remain only fragments of the actual lived-work of crafting Minecraft content. Various features of the work might be recognised, but how these features are enacted in situ and how the overarching activities are coordinated between the actors are matters that have been glossed over. As a result, the "invisible work" (Star & Strauss 1999) that takes place behind the scenes and leads to the organisational accomplishments pointed out by the aforementioned researchers is missed, alongside the phenomena that accompany them. To quote Suchman (1995):

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“Not only do representations of work involve perspectives and interests, but work has a tendency to disappear at a distance, such that the further removed we are from the work of others, the more simplified, often stereotyped, our view of their work becomes.”

The notion of invisible work was originally coined by Star and Strauss (1999) in order to refer to activities that are not regarded as work, even though their conduct demands a considerable amount of time and effort. One of the examples Star and Strauss draw upon while explicating this notion is that of house workers, whose labour was reported being unrecognised or treated as inconsequential by their employers. Treating someone’s work as invisible does not only have repercussions on the recognisability and support of how workers carry out their duties and responsibilities but also on the violation of their rights.

Star and Strauss (ibid.) stress that the recognition of a set of practices as work depends on the perspective of those that observe them. Workers are likely to construe what they do as work. However, for outsiders, workers’ tasks might be deemed as trivial routine activities that do not bear any labour connotations. This coincides with Suchman’s quote above and more specifically with her comment on “perspectives and interests” (Suchman 1995). If researchers set out to explore a setting with particular “perspectives and interests” in mind, then the representations they are going to develop are likely to resonate with these “perspectives and interests” instead of the actual lived-in work of the setting.

These points raise an ethical dilemma for academics who study a work setting (or playful settings that foster professional potential). Enquiries that distance themselves from the members’ point of view are highly likely to produce understandings that do not adequately account for what members actually do, leading to “idealisations or typifications” (ibid.) of working practices enacted in the setting.

By taking a step back and trying to look at and comprehend the work of UGC production from a distance, the cited work provides a picture that is quite different from the one this thesis exhibits. Even those that closely examined UGC practices by immersing themselves in the field treat Minecraft (and similar

games) as a means to an end; a resource for pursuing distinct academic goals. As such, much of the mundane day-to-day tasks involved in *doing* in-game content production are left unattended. The work they describe is rather simplistic; it may include individuated actions such as team formation, appropriation of referential materials and use of third-party tools (such as Skype). However, the interdependence of these activities and technologies in managing and accomplishing the work is not explored. On the contrary, these activities are presented as if they take place and are carried out in a strictly sequential and many times inconsequential order.

Ringland's work (Ringland, Wolf, Faucett, et al. 2016; Ringland, Wolf, Boyd, et al. 2016; Ringland et al. 2017), for instance, points to a number of features involved in creating content that this thesis claims are significant organisational matters. One such feature is the appropriation of referential materials during crafting content (see chapter 5). While these materials are indeed mentioned by the researchers, how they are appropriated is missed, as the researchers simply state that players consult them when it comes to building in Minecraft.

The fieldwork that was carried out as part of this thesis further acknowledges these activities but also elucidates on their significance in the overall job of crafting content. It is shown that they are not simple actions that are enacted once in a while, when players have to get inspiration, find someone to help them in their creative practices or when they have technical difficulties. On the contrary, they constitute individuated jobs of work that are part of the arc of work of creating Minecraft content. They are enacted in separate fields of work, either outside Minecraft (as is the case in searching for referential materials using Google or for tutorials on YouTube) or in distinct worlds inside the game, which bear different uses and accommodate a variety of needs.

On top of that, the literature presents the setting as an environment that fosters collaboration. Even though this thesis does not contrast this argument, it needs to be acknowledged and taken into consideration that collaboration in this context is rather fragmented. As mentioned above, many of the tools members use are not simply resources; they constitute sites of work that come into play due to the actors' need to perform individuated activities that are interdependent

with each other towards the production of UGC. The original version of the game provides only rudimentary affordances towards collaboration, such as the in-game chat interface and the ability to build alongside others. Besides that, verbal communication, delegation of tasks, scheduling, accessing, appropriating and storing external resources, the development of modifications, team formation, etc. take place through supplementary systems (e.g. Trello, Skype, and fora). Essentially, members bootstrap their community by bringing together an assemblage of different settings and resources in order to support their work. Collaboration is vital in achieving Minecraft's organisation, but it is also a necessity that demands a significant amount of work in order to make it happen (which is another observation this thesis adds to the existing literature).

All of these points constitute the preamble to what follows. The digital economy that resides inside Minecraft's creative community goes completely unrecognised by the existing literature, due to the latter's focus on ludic pursuits, treating Minecraft as a site for attending other research goals, and on cursory investigations of what players do. The only acknowledgement of the potential in these games in terms of the emergence of monetisation systems comes from Sotamaa (Sotamaa 2010a), who hypothesised such development through his work on LittleBigPlanet.

The following section expands on how theorisation (the predominant analytic approach in game studies) can lead to a misreading of "the phenomena" and what the potential consequences of that are.

7.4 THEORETICAL MISREADING

This section claims that current game studies theorisation over the relationship between work and play keeps a distance from what members do in their daily routine, as part of their work in Minecraft or similar games that foster monetisation practices. Rather than investigating members' methods, there is the tendency to categorise players' actions and superimpose meaning on them. It is proposed that a more pragmatic approach (informed by ethnomethodology's programme) to studying the field of emerging digital economies in videogames is necessary (see section 7.5).

This argument is unpacked in two steps. Firstly, a discussion of how the emergence of work activities in videogames has been explored from a game studies perspective is presented. This segues into a number of key examples, which show how existing literature glosses over the phenomena entailed in content production in Minecraft's creative community, as well as the broader topic of studying work in playful settings.

7.4.1 Productive play

In the early days of studying virtual worlds, Pearce (2006) became aware of the productive practices that are enacted inside them and coined the term "productive play" to describe this phenomenon. She was one of the first to argue that the predominant belief that play is unproductive changes with the passing of time since player production is becoming a "viable business model" for game developers, as it can clearly lead to playful and enjoyable experiences. Yee (2006) also comments on the topic of play practices that resemble work by mainly referring to the routinised activities players engage within MMOGs, such as: looting for particular in-game items, synthesising different types of materials for the creation of weaponry, farming experience points, etc.

Nardi et al. (2008) expanded on the notion of productive play by presenting a variety of ways in which virtual worlds can be used in order to facilitate work-like activities. The activities they draw upon are either external to the game (e.g. the creation of wikis, guides, tutorials, mods, etc.) or internal (creation of content by using the affordances provided by the game). According to them, what makes these activities work-like is the effort and the analytical thinking that is entailed in enacting them (e.g. the methodical maintenance of a guide and the development of a mod).

Most importantly though, they stress the necessity to treat play and work not as "binary opposites" but rather with regard to "how it is framed in a situated cultural context" (as discussed by Goffman (1974)). In other words, what matters is not whether play and work are two distinct and mutually exclusive practices, but how they are conceptualised and enacted inside the societal context they take place. Ultimately, they propose that if playful activities can indeed foster productivity, designers of distributed work settings might need to

inform their designs by taking a closer look at how these virtual game settings are structured.

In addressing this call to understand what the characteristics of playful settings that lead to productive endeavours are, one must first investigate what players do inside these settings. The very first pieces of enquiry (see: Castronova (2001; 2008) and Dibbell (2006; 2007) as discussed in 7.1.2) did indeed manage to convey some of these aspects, especially with regard to the mundane activities players attend to on a day-to-day basis (e.g. in-game looting, auctioning virtual goods on eBay, creating and managing macros, etc.). These efforts were further enriched by recent studies that tried to compose a more rounded picture of the secondary markets that revolve around monetisation and productive practices in game contexts (see: (Tai & Hu 2017; Zhang & Fung 2014) as discussed in 7.1.2).

These works clearly point to a market that is based on a fragmented infrastructure that consists of an assemblage of discrete resources and systems (e.g. the game, eBay, websites, local computer systems for running macros, etc.). Furthermore, this market is rather unsecure, as those that are involved in it face the constant risk of their business getting closed down after being chased by the companies that own and run the game (Dibbell 2007). Whilst there are clear differences between the markets that are situated in (and around) MMOGs and Minecraft (as discussed in 7.1.2), both of them share similar characteristics in terms of being geographically dispersed and stemming from the game's structure and community.

On top of that, both of these markets depend on cooperative work, as there are multiple actors involved in both markets who need to coordinate between each other. In the Chinese gold farming industry, it is not only the ones who perform the in-game activities of looting that are part of the market. There are also a number of other bodies, such as those that own companies that provide the infrastructure (e.g. computers and game accounts) for professional players to be able to play the game and routinely perform in-game tasks. Alongside that, there are the buyers (those that play for leisure) who buy virtual items for real-world

money. This thesis makes it evident that there is a similar arrangement of actors in Minecraft's commissioning market too (see section 3.3.2).

As Schmidt and Bannon argue (Schmidt & Bannon 1992), in distributed settings such as the ones discussed here, it is imperative to investigate the nature of cooperative work in order to understand how the settings are organised and how things get done. In understanding cooperative work, academic enquiry should focus on how actors *articulate* their work to each other, which will be further discussed in the next chapter.

Whilst the cited work does indeed point towards this direction, there is an emerging body of literature that diverges from the mundane activities players do to how scholars interpret players' actions. The following section presents a number of examples that display the tendency towards interpreting the enacted phenomena, instead of closely examining how work activities are manifested in games such as Minecraft.

7.4.2 What is misread

As discussed up to this point, existing literature in game studies paves the way for understanding what is involved in UGC practices in the context of videogames, especially by exploring this subject from a ludic perspective. However, it glosses over the lived work of content production by not attending to (1) what players do and (2) how they actually carry out their tasks. As a result, the underlying phenomena in content production are lost, which makes them liable to misreading over the nature and the complexity of the involved work.

A few exemplary cases are mentioned here, showing how academic interpretations misread the work of crafting in Minecraft.

7.4.2.1 Example 1: Minecraft as a neoliberal setting

Dooghan's (2016) analysis on Minecraft's gameplay focuses solely on providing a subjective account of what Minecraft symbolises. He refers to Minecraft as a neoliberal environment, in which players construct their own utopias through their personal manual labour. He describes this labour as a "repetitive activity in the game," which is fun but "uncompensated and autotelic." Whilst he does acknowledge the laborious nature of Minecraft's

gameplay, it is quite clear that his analysis misses the day-to-day activities and practices players attend to while managing their work. Labelling in-game content production as “laborious” is not enough in order to describe what is entailed in it and developing an understanding of matters such as what players achieve and what value they attach to their creations. In fact, it reduces their labour to something that is repetitive and unimportant, which is also supported by his claim that:

“Minecraft has no markets – emergent behaviour in multiplayer games notwithstanding.”

This is a clear misreading of the potential and the emerging phenomena that are manifested inside Minecraft. Even though this article was published in 2016 (years after this PhD project was initiated), it does not just miss the existence of such an important side (as this thesis claims) of the game’s current form, but also completely dismisses the potential for professional activities and secondary markets to form.

Of course, it is not necessary for everyone to be aware of this market and to investigate it. The problem lies in a more general sense; such a theoretical approach to studying videogames poses the risk of completely missing not only the particularities that make the economy work (e.g. assembling a working infrastructure through the adoption of distinct technologies), but even overarching matters that are of significance to the community (e.g. the underlying digital economy and the division of labour). As this thesis reveals, Minecraft’s commissioning market is indeed a profitable site for many that provides plenty of opportunities for ambitious players to become professionals, build a portfolio of artwork and develop technical skills that are transferable to other creative industries. Besides that though, it is a highly unregulated and fragmented setting that demands attention, awareness, and personal effort in order to make it work, all of which add an overhead cost in producing Minecraft content.

7.4.2.2 Example 2: External activities framed as “metagaming”

Another consideration that needs to be taken into account is the way in which researchers categorise and refer to the phenomena involved in creating content.

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An example that illustrates this can be found in Niemeyer and Gerber's (2015) work, where they refer to the activities of consulting and creating walkthroughs and tutorials for crafting content as part of the "metagame" of playing Minecraft. Part of this metagame revolves around the creation and adoption of "paratexts." In their work, they cite Apperley & Beavis (2011) in order to pronounce the importance of paratexts as part of creating in Minecraft. More specifically, the latter say that paratext "refers to both the texts and the surrounding material that frame text consumption, which in turn can shape the readers' experiences with the text, as well as give meaning to the act of reading" (ibid.).

Whilst it is true that there are activities that take place outside the context of the game (such as terraforming, see section 5.2), labelling them as being part of a "metagame" does not do them justice and fails to describe their significance in the development and sustaining of the game's current form and structure. On the contrary, it aligns them with fan production (Jenkins 2006b) and gives them ludic connotations, which potentially leads to missing the complexity of this business.

This type of theorisation suits the cultural studies (where it originates from), especially due to the fact that it refers to the creation of *narrative* materials that *supplement* an original text. Their adoption and application in studying games such as Minecraft though becomes problematic due to the simple fact that there is *no original text* to supplement. Minecraft has no narrative, so analytical frameworks such as these do not manage to encapsulate what takes place in the game. Consequently, they cannot lead to the production of a comprehensive understanding as to how the cooperative work that is entailed in creating either internal or external to the game material is carried out.

This thesis' objective is not to contrast cultural studies scholars. However, the aforementioned assertion comes in direct discord with the findings presented in the previous chapters and, more importantly, with the analytical stance adopted while doing fieldwork. Essentially, what takes place externally is interdependent to in-game actions; it is not one or the other that leads to the production of in-game content, but the meshing of these individuated activities.

In categorising activities that partake in game contexts and assigning them meaning that is not in-line with how members perceive and enact them, they are deprived of their significance in the overall social milieu of content production.

7.4.2.3 Example 3: Missing the wide spectrum of Minecraft's gameplay

Minecraft's gameplay modalities constitute another matter that needs attention. There have been efforts in developing an understanding of what they are (Duncan 2011) and what is involved in producing them (Christiansen 2014). More specifically, Duncan elaborates on the interplay between survival and creating content, while Christiansen recognises the significance of modding in producing new ways of playing the game. Even so, *doing* modding is treated as invisible work that takes place in the background.

This thesis presents a different picture; that of the complex, cooperative work that is entailed in producing these gameplay experiences. By focusing on *how* they are created, it is revealed that the emergence of new Minecraft mini-games does not turn upon one singular activity (that of modding) but rather on a number of interdependent work practices, which involve: finding appropriate professionals to do the work; negotiating commission specifications; delegating tasks; building; evaluation cycles; etc. (as discussed in chapters 4, 5, and 6).

7.4.2.4 Example 4: Categorising monetisation prospects

This example, which shows the potential problems theorisation might bring in the study of play and work, comes from Harambam et al. (2011). In this publication, the authors suggest a new conceptualisation of monetisation practices in playful settings as detracting from the gaming experience. As previously discussed (see section 7.2.2) they end up providing four types of commercialisation that offer a wider spectrum with regard to how the gaming experience changes through content monetisation. These categories are self-contradictory though. To quote the authors:

“While second-order commercialisation poses a threat to World of Warcraft's virtual game world, Second Life manages to escape this fate by radically incorporating commercialism as part of the game. Or rather, it managed to do so initially because Second Life's resolute implosion of

play, work and trade has evoked unforeseen consequences in due course that do actually threaten the spirit of free play.”

While the authors – rightly – aimed at delivering an alternate account as to whether the activities that partake in playful settings should be dichotomised into either work (as in labour) or play (as in ludic), there are multiple problems with their approach. They do acknowledge the fact that play can indeed lead to the production of monetary value and propose that there should be a more lenient approach to investigating how monetisation affects the gaming experience. However, they contradict themselves by providing another categorisation of the potential outcomes of commercialisation practices in videogames. In doing so, they create a classification system, which is undeniably wider than the aforementioned binary conception. However, it still supplies a strict number of cases as to how monetisation can affect a game’s social structure.

7.4.2.5 Example 5: Theorising the nature of work in videogames

A recent short paper by Dippel and Fizek (2016) introduces a new conceptualisation of the topic of productive play. Whilst their work does not look into Minecraft in particular, it is worth mentioning it as it is situated inside the broader field of monetisation practices through videogames, a topic that Minecraft’s commissioning market relates to. According to these authors, there are many instances where work activities permeate play. In an effort to better conceptualise them, they propose the concept of interference:

“In order to encompass the overlay of the work-play relationship, we are proposing the concept of interference, borrowing a term originally used in Physics to denote the superposition of waves. The proposed work/play interference allows us to describe a transformative character of phenomena, and delineates the relation between supposedly non-productive playful activities and productive work-related behaviours. It illustrates the dissolving distinction between the two qualities, and surpasses a strictly dualistic mode of thinking.”

Their proposition revolves around the inadequacy of prevailing game studies theories to encapsulate and articulate the relationship between play and work. More specifically, they place it alongside prevailing game theories (such as gamification (Deterding et al. 2011) and ludification (Raessens 2006)) that look into how playful activities are becoming commonplace in various non-playful contexts, such as politics, education, war, etc.

Their call to further explore how play enters a work setting (or how work activities permeate playful settings, e.g. videogames) is definitely promising, especially due to the fact that such complex cooperative work is manifested. This proposition can even align with calls for extending CSCW's research agenda from the study of workplaces to settings that revolve around leisure (Crabtree et al. 2005). However, the language adopted and used to describe the phenomena does not do justice to the emergence of such activities. Besides the fact that an analytical orientation is not clear (what will be studied? based on what grounds are work and play framed?), terms so alien to work settings (e.g. interference) cannot delineate what is done in the doing of working inside a playful setting.

In fact, this paper occasions the question of whether the predominant theoretical approach employed by game studies scholars is appropriate for the study of work activities that are enacted inside ludic contexts. Is it really necessary to label social action and theorise over the "interference" between play and work? Does it really matter if work activities "corrupt" (Caillois & Barash 1961) play? This chapter's final section tries to answer these questions by contrasting academic interpretations with explications of the phenomena.

7.5 INTERPRETATION VS EXPLICATION

What becomes apparent through the discussion in the previous section is the tendency to categorise social action and to impose interpretations of what players do. A case was made regarding the applied analytical approaches, which take a step back and investigate the phenomena from a distance, theorising what players do by attaching labels to the outcomes of their actions. This leads to the creation of abstract notions that set out to holistically describe the social settings under investigation; ludic spaces where work practices are enacted. This thesis

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argues that this stance can become problematic, as such analytics are not interested in what the work is and how players attend to it. This results in losing the phenomena that are involved in the doing of the work, as they are treated as banal matters that warrant no explication.

More importantly, the terms used in describing the work, as presented in the examples cited above, are expressions that members themselves would not be able to relate to or would not use in describing what they do. For instance, those that participated in this research never expressed the opinion that their effort is uncompensated. Similarly, there were no accounts regarding any tension between “work” and “play;” for them, their actions were part of their own effort to make pocket money or even a living out of the affordances provided by the setting. For them, the game was not simply “a game;” it was transformed into a platform that provided the means to sustain a viable business, form professional connections with others, collaborate, and develop both personally and professionally. Academic interpretations that set aside the exploration of members’ own methods treat these ludic settings as a means to an end (resources for examining various academic pursuits) instead of a field of study in itself that warrants understanding, unpacking and support.

This discussion is reminiscent of Suchman’s exemplary paper on the political implications that come with the categorisation of social actions (Suchman 1993). In a paper named “Do Categories Have Politics,” she elaborates on the problematic nature of categorisation as an analytical stance, especially in the context of systems’ design. She draws upon Sacks’ Membership Categorisation Devices (MCDs) (Sacks 1972a; Sacks 1972b) to illustrate how categories imposed by bodies external to the setting can be considered intrusive by the members, who use their own categories to organise, recognise and signify membership in a group. When systems’ design is based on categorisation schemes provided by others than the ones who do the work, members end up abiding by how their work is conceptualised, instead of how it is actually carried out. Consequently, the systems they end up using as part of their daily routine do not actually serve their needs.

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Whilst Suchman's comments stand as criticism over the application of speech act theory, her arguments are applicable to any work setting and to any method of enquiry that glosses over members' methods. In fact, this criticism resonates well with the case explored through this thesis. It might not be speech act theory the one that is applied by various academics that study Minecraft and similar UGC-driven games. However theories of work and play seem to paint a picture that is significantly different from the one provided by this thesis. Essentially, either theories of social interactions endanger the phenomena, by reducing them to glosses that miss the nuances and the plentiful situated meanings different actions might have under different circumstances in a particular context (Suchman 1993).

By assigning specific labels and formulating definitions of what members do without engaging with them, an analytical disposition is created, which informs the ways in which members' actions are interpreted. Effectively, the theorisation of play and work leads to the preservation of a *theoretical myopia* over what players actually do and how they do it. This only propagates the problem of rendering work *invisible* (Star & Strauss 1999) and investigating any setting based on "perspectives and interests" (Suchman 1995) that predispose academic investigations in producing "idealisations or typifications" (ibid.) of the setting, which have little (if anything) to do with the work itself.

What is important is not labelling the phenomena as "work" or "play" but rather what is practically accomplished through these activities. It is clear that Minecraft professionals *play* in the game, as *creating content* is one of the many *play* modalities Minecraft affords. This does not mean that what they do is not work. Play and work, in this setting, are not two mutually exclusive activities; they are one and the same, as is the case in many professions: professional football players *play* football; professional poker players *play* poker; professional tennis players *play* tennis; etc.

It should be raised that if game studies' enquiry is to continue in the business of classifying social action (and in this thesis' context classifications of play, labour and the effects these have in game settings), it should do so by focusing on explicating how members categorise their actions and how they organise

their work setting. This is related to Sack's Membership Categorisation Devices (MCDs), as discussed in chapter 2. To make this point clearer, it is necessary to revisit the classic example used by Sacks in explicating MCDs: "The baby cried. The mommy picked it up" (Sacks 1992a). While there is no indication of the relationship between the one who picks up the baby and the baby itself, what people understand when they hear this phrase is that it is the baby's actual mother that picks it up. This is due to the "tying rules" that members use in order to connect the categories "baby" and "mommy."

Whilst the application of MCDs is tied to an Ethnomethodological – Conversation Analysis approach of conducting sociological research, this thesis argues that there are valuable methodological lessons to be learnt from them. MCDs and their relevance to members' methods provide an *endogenous* account of how members of a setting conceptualise their own work and how they attend to their business. As was discussed in chapter 2, there is a clear argument to be made about *endogenous reflexivity* (how members of any setting make their work accountable to each other through their own methods) and *academic reflexivity* (how academic accounts interpret members' methods based on their "perspectives and interests"). Academic reflexivity leads to the production of academic accounts that do not manage to capture the lived work of a setting and raise a number of problematic scenarios due to that (plenty of which have been discussed in this chapter, but also raised by Crabtree et al. (2009) and Button et al. (2015)).

If the study of gameplay actions and, more specifically, work practices through play in videogame settings is to be an accurate field of study, it is necessary to produce accounts that will reflect members' own categorisations. Insights that are not understandable by and relatable to the members are understandings that could potentially foster academic discussions that will diverge from what members actually do. If, for instance, game designers are interested in what prospects they can elicit from designing and developing games that revolve around UGC, then consulting academic literature that talks about the "interference of work and play" (Dippel & Fizek 2016), "ludification of culture" (Raessens 2006) or Minecraft as a "neoliberal" (Dooghan 2016) setting will probably address neither theirs or the players' needs. Even more so, designers

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who want to make videogames that provide monetisation potential to players have the ethical responsibility of attending not only to the positive aspects of the markets they facilitate to develop, but also of protecting players from any mishaps, such as the ones discussed in this thesis (see section 6.1.3.1).

Chapter 8

8 DESIGN IMPLICATIONS

This thesis discovered the invisible digital economy that resides inside Minecraft's creative community. On top of that, it reveals "the work to make the Minecraft economy work:" the practices, activities, and tasks members attend to in creating UGC. It becomes evident that this economy rests on a division of labour, which is enacted inside a distributed setting as geographically dispersed actors make use of an assemblage of resources and systems that extend Minecraft's borders.

This is a novel viewpoint on Minecraft's setting; instead of providing interpretations of members' work, it explicates "what is done in the doing" of creating Minecraft content through the use of thick descriptions. Explication enables design intervention as it makes work visible rather than (at best) draws on it as an un-explicated resource and glosses over it.

In doing so, it was found that Minecraft's ecosystem is rather fragmented, with members bootstrapping the setting's infrastructure through the use of bespoke **accountability systems**. This chapter presents these systems by referring to what is achieved through them. In addition to that, it points to a number of matters that **need support** in Minecraft's commissioning market.

8.1 THE WORK TO MAKE TECHNOLOGY WORK

A longstanding body of literature has explored the workplace, with studies ranging from air traffic control (Hughes et al. 1992), to London Underground (Heath & Luff 1991), hospitals (Lynch 1984), etc. The common denominator in all these examples is the shared interest of presenting the situational character of action in work settings and explicating how they are socially organised (Heath et al. 2000). Even more interestingly, these understandings were reached through a naturalistic approach in studying work. Researchers visited the

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workplace, immersed themselves into it, and conducted ethnographic fieldwork that aimed at unpacking the naturally occurring phenomena in the *doing* of the work.

These studies diverged from the predominant approach in HCI research, which explored technology usage from a cognitive perspective. Following a cognitive approach, interactions with technologies were investigated not in the settings where people work, co-operate, and live their lives. On the contrary, they were brought to the lab and were tested, by appointing pre-defined scenarios of used and giving participants tasks that had to be performed. Suchman argues that what is missed through such an approach is the contextual intricacies of *how* technology is used in a real-world situation (2007). Suchman also expands on the fact that work inside a setting does not only draw upon pre-designated tasks and processes but rather on the situational character resources, tools, plans, scripts, rules, etc. acquire in order to meet the requirements that arise through contingencies. She further asserts that experimental studies cannot capture the reasoning behind users' actions, as it is intertwined with the circumstances where technological artefacts are put to use. Essentially, her position demonstrates that in understanding technology in any setting, it is imperative to study *how* it becomes an essential feature in *doing* any of the underlying activities that are entailed in the work of the setting.

Suchman's critique led to a number of workplace studies that do not only enumerate the various technologies and resources used as part of the work, but rather focus on how the work is brought about through the use and appropriation of these resources. More specifically, the focus of academic enquiry became the understanding and explication of the practical accomplishments inside the workplace, by examining "the practices and procedures, the socially organised competencies, in and through which participants themselves use tools and technologies in the emergent production and co-ordination of social action and activities" (Heath et al. 2000).

There are numerous projects that exhibit the rich understanding that can be achieved through such a naturalistic approach to studying the workplace. A set of examples that are of particular interest date way back to the 1990s and

explore the use of paper-based resources in a number of different settings. Harper (1998), for instance, performed an ethnographic study on the International Monetary Fund, which shed light on how the research projects, organised and run by the institution, resulted in the production of long reports that included relevant details and information of various countries' economical state. These documents constituted the main resource that informed subsequent policy making decisions and actions for addressing any issues relevant to each country's state. On a similar manner, but on different work spaces, Button & Sharrock (1994) looked into the use of both physical and digital document resources as a means of coordinating and delegating work tasks in large projects that revolve around software development.

One of the most interesting points this exemplary list of papers raises is how assumptions about the workplace can be proven wrong, or how digital systems can actually undermine members' work if not grounded on an accurate understanding of the in-situ use of resources. For instance, Heath and Luff (1996) explored how information systems designed to support doctors actually affected their work. They found out that systems with affordances that were not in-line with the ways in which doctors used paper-based resources actually damaged their (the doctors) efficiency. More specifically, they restricted their flexibility in terms of addressing contingent scenarios not supported by the system. Another study by Sellen & Harper (1997) unpacks the overall affordances and roles paper-based documents have, connecting these with the reasons behind the continuing use of such resources in the workplace. Their work on the International Monetary Fund (IMF) illustrates how the action of sharing a report physically communicates the report's importance, as well as reassures that it report will actually reach its target. Additionally, it amplifies a more personal relationship between those that work together in a project, and gives them the opportunity to articulate any details that are not directly available in the report itself.

Whilst all these studies focus on one particular type of resource (paper documents), what is displayed through them is the powerful insight researchers can distil through an empirical approach in studying the workplace. Furthermore, it is showcased *how* paper-based resources are used in-situ, what

affordances they provide, and what is *interactionally achieved* through them. Goodwin and Goodwin (1996) further elaborate on the importance of understanding how individuals achieve their goals through the use of resource. They argue that “instead of a master overview, one finds multiple, diverse local perspectives, each constituted through the combination of a specific array of tasks, an ensemble of tools for performing those tasks” (ibid.). This argument fits into the overall critique of researching co-ordination from a cognitive perspective, as it asserts that overviews or general theoretical understandings do not manage to capture the practical accomplishment of individuated tasks, as they are carried out by the individuals that constitute the workforce of an organisation.

These examples demonstrate how the work in these (and in fact in any) settings could be rendered invisible by providing overviews of human conduct instead of engaging with the day-to-day activities of those that actually do the work. Such overviews cannot manage to explicate how work practices are brought about, let alone the underlying division of labour in the workplace. Heath and Luff (1992; 1996), for instance, describe how emergencies in the London Underground require a number of distinct expertise to cooperate in addressing the matter at hand, without necessarily being able to actively discuss courses of action, explicate their actions to one another, and coordinate: ‘personnel rely upon a tacit and indigenous body of practices and procedures through which they produce tasks or activities whilst simultaneously participating in the actions and activities of others’ (Heath et al. 2000). Tasks and activities become implicitly visible across those that collaborate in the workplace through words, resources, actions, phrases, sentences, etc. that bear a commonly shared situational meaning.

This poses the practical question of how cooperative work can be studied, understood, and explicated. The next session aims at addressing this by drawing upon Schmidt and Bannon’s (1992) work on this subject.

8.2 TAKING CSCW SERIOUSLY

In order to support cooperative work through computer systems, it is first necessary to understand the nature of this work, as it is enacted in the setting of interest. As Schmidt and Bannon (1992) put it:

“[...] the drive of CSCW should be directed towards designing systems embodying an ever deepening understanding of the nature of cooperative work forms and practices.”

Questions that are usually addressed towards achieving this goal revolve around the individuated activities members of the setting are responsible for, how these activities are interlinked, how members coordinate between each other towards the production of their common goal, how they account for their progress, and what systems they use in this process.

Whilst these questions might lead to the formation of an initial understanding as to how various activities are managed in the setting, unpacking and explicating cooperative work is intertwined with the understanding of another notion that is inherent to it: that of *interdependence* in work. As suggested by Schmidt and Bannon (ibid.), interdependence in work emerges when actors have to share the same resources in doing their work. The authors make it specific that interdependence differs from *mutual dependence* in work in the sense that the latter requires positive synergy between the actors, while the former might be perceived as a nuisance; something that requires a set of activities in order to be addressed.

More specifically, mutual dependence refers to the scenario where a number of actors are working together towards the production of the same goal, without their individuated work practices becoming an obstacle in each other's way (Schmidt 1991; Schmidt 1994). Their work can either be discrete, with each one of the actors working on their own tasks, which are combined towards a common result at the end of the work practice or they can collaborate by working on the same tasks, activities or practices. The important detail

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regarding mutual dependence is that it does not put any restrictions with regard to waiting for someone else to complete their tasks.

Interdependence, on the other hand, refers to the scenarios where actors cannot perform the work they are assigned to without relying on others. An example that illustrates the significance of interdependence in a work setting is that of multiple manufacturing companies participating in the manufacture of a particular product, with each one of these companies being responsible for the provision of specific resources that will be combined in the making of a product. The final outcome depends on the timely delivery of each of its constituent parts; failure in doing so will have a negative impact on the overarching production line.

Interdependence in work occasions the emergence of “secondary activities of mediating and controlling” (Schmidt & Bannon 1992) the relationships between actors as well as the coordinating activities that take place between them. More specifically, it becomes necessary to break down work practices into activities and tasks, to allocate these to separate actors and to make sure that there are systems for these actors to coordinate between each other, to track their progress and to account for their actions.

The inclusion of these activities in the work setting and the distribution of work across multiple actors with diverse expertise makes cooperative work inherently *distributed*. This is further pronounced in scenarios where work does not take place in a singular site, but rather in multiple sites that might also be geographically dispersed. This arrangement necessitates *articulation work* (Schmidt 1994); a “supra-type of work” (Strauss 1985) that includes a set of activities members attend to in order to inform those they work with of their progress and the state of the shared assets. These activities are separate from the individuated work practices members do as part of their duties and responsibilities, hence add extra steps in the conduct of their everyday tasks. On top of that, they might have to learn how to use new systems, how to fill specific forms or even to become accustomed to the accountability ladder that is part of the organisation they are working for. All of these result in the addition of an

overhead cost in successfully completing any task in the workplace (Schmidt 1990).

This discussion occasions the question of how the nature of cooperative work can be studied, analysed, and explicated in order to understand the underlying interdependencies of work in a work setting. As a solution to this problem, Schmidt and Bannon (1992) propose the adoption of Strauss' division of labour and articulation work (Strauss 1985; Strauss 1988).

Strauss argues that in every division of labour, members need to account for their work (what they do, how they do it, when they finish their tasks, in what capacity they function, etc.) to those they work with, namely: subordinates, managers or even the ones that are of the same rank (Strauss 1985). As was discussed in this thesis' methodology chapter, a pertinent feature of any division of labour is the arc of work; "the totality of the tasks" (ibid.) that are entailed in working on a particular project. This arc involves tasks, "clusters of tasks" and discrete "segments" that are carried out "sequentially and simultaneously" towards the making of the product the project revolves around. These set of activities though are carried out by different actors and teams that work together in the workplace. Through articulation work, individual actors' work meshes together and their progress becomes visible to the rest of the organisation they are part of.

"Articulation work amounts to the following: First, the meshing of the often numerous tasks, clusters of tasks, and segments of the total arc. Second, the meshing of efforts of various unit-workers (individuals, departments, etc.). Third, the meshing of actors with their various types of work and implicated tasks." (ibid.)

Based on this reasoning, accountability is not a secondary activity that actors are encouraged but are not required to attend to. On the contrary, it is an inherent feature of any arc of work, necessary for its successful accomplishment. In accounting for the aforementioned matters, actors employ the use of "accountability systems" (ibid.), which can range from physical and digital resources, such as computer systems, checklists, sketches, etc. Strauss in

particular talks about “formal systems of reporting” (ibid.) that might be part of the accountability procedure officially employed by an organisation.

Whilst accountability is indeed an inherent feature of any arc of work, how accountability is carried out differs from a work setting to another. Due to that, in unpacking accountability, it is necessary to attend to the situational methods of accountability employed by members of the setting under investigation. In doing so, it is not only the accountability systems themselves that need to be teased out but also: who uses them; what is accounted for through them; how they make the actors’ work visible to one another; how (and if) they are shared between actors; and where they are situated in the “accountability ladder” (ibid.).

In Minecraft’s case, in particular, the spatial distribution of the work occasions the need for such coordination between clients, contractors and builders as a necessary step towards the production of a Minecraft map. The following section presents the accountability systems that were revealed through the conducted fieldwork.

8.3 ACCOUNTABILITY SYSTEMS

As mentioned above, a number of accountability systems are used in doing articulation work during creating Minecraft content. This section first presents these systems in order to show how work is coordinated between actors in the currently fragmented Minecraft ecology. It then elaborates on how future CSCW systems can support articulation work and facilitate the conduct of various tasks in the arc of work.

8.3.1 Current accountability systems

This section enumerates these accountability systems, by grouping them based on the tasks that are articulated through them.

8.3.1.1 Articulating finding contractors and builders

This is an essential step clients attend to as part of commissioning a Minecraft map⁹⁰. In order to find contractors, clients need to refer to the resources provided by the former for promotional purposes. More specifically, clients visit contractors' **forum threads or personal websites** for the purpose of checking: (1) their availability in accepting commissions; (2) their previous work, which is exhibited in the form of static pictures of already completed and delivered products; and (3) the amount of money they charge for their services.

These details are taken into account by the clients when deciding which contractors to approach about commissioning their project (see section 4.2). Another resource that is of importance for them though is the comments left by other actors who had previously worked with those contractors. Essentially, these comments constitute small reviews that touch upon any kind of experience previous clients had with those contractors. Clients' final judgement on which contractors to contact is influenced by these comments, as they prove whether contractors can actually (1) deliver high-quality work and (2) are trustworthy and reliable.

8.3.1.2 Articulating determining build's specifications

This task revolves around the specification of the exact details the build under commission should meet. These details usually include both functional (e.g. build size) and aesthetic (e.g. build's theme and colours) characteristics and are necessary for initiating the building process (see section 5.4).

Skype. In articulating the build's specifications, referential materials are exchanged through Skype or any other systems used for communication purposes. These digital resources depict other Minecraft builds clients and contractors use as examples of how they conceptualise the build under commission. Even though referential materials usually represent Minecraft builds, they can also be textual references to servers, builds or thematic styles (e.g. "futuristic cities"). There were also occurrences where such materials were

⁹⁰ This step can also be performed by contractors in the contingent scenario of having to subcontract the commission to builders that do not belong in their building teams. In this case, they have to follow the procedure described here.

actual in-game content, such as prototypes clients shared with contractors in order to be the basis upon which builders would work on the commission.

Image processing software. Besides sharing referential materials, clients and contractors might also use Photoshop or any other image processing tools to annotate specific aspects of the exchanged resources. In doing so, they point out the exact details the other party needs to pay attention to. For instance, clients might highlight the areas in a Minecraft map where new builds need to be incorporated.

8.3.1.3 Articulating assigning task(s) to builder(s)

When a project is commissioned to a contractor, its constituent building tasks need to be assigned to one or more builders. Doing so turns upon the builders' availability and expertise. Contractors employ the following accountability systems in tracking builders' workload and assign tasks accordingly.

Schedules. These are textual documents saved online either as Excel spreadsheets or Google Docs. The information stored in schedules is related to who is assigned to each of the building tasks the project constitutes of. This particular resource is only accessible by those that are responsible for assigning tasks to builders (project managers or contractors).

Trello cards. These resources are situated inside Trello boards; dedicated work settings that members of a team or union have access to. All builders and projects have their own Trello card and project assignment is carried out through the association of one builder card to one project card. In unions, members themselves are the ones who associate their cards with that of a project. In building teams though it is the contractors who decide who is going to work on what project by associating builder cards to projects cards (see section 4.3.2).

8.3.1.4 Articulating assembling and storing resources for building

A significant amount of work revolves around assembling the necessary resources for building in-game content. These resources range from in-game builds that members had created in the past, to artwork and various other visual resources that they discover by searching on the internet or accessing Minecraft worlds owned by others.

Depending on the type of each resource, different systems are employed in accessing and storing them. For instance, when contractors receive visual referential materials from clients, an action that takes place through the established means of communication (e.g. Skype), they have to store them either locally or on systems that are capable of accommodating further distribution of said resources. This is necessary as contractors will then have to relay the materials that are part of the commission's specifications to the builders that will do the work. Some of the reported ways of doing so are via **Trello**, **Dropbox** or **Google Docs**, all of which constitute online systems where more than one member can be given access (see section 4.2.3.1).

In-game assets are stored in **dedicated Minecraft worlds** that are used by individual builders or teams (see section 5.1.1.1). These worlds constitute repositories that are visited by builders every time they want to use a particular build they or other members of their team created in the past. The fieldwork revealed that this is a scenario that occurs frequently. For instance, a participant in this research was using trees created by another builder he was collaborating within multiple projects.

8.3.1.5 *Articulating tracking progress*

Builders need to account for their progress to the project's contractor and to the other builders that might be assigned to it. This job of work is even more prominent in large-scale projects where building tasks are interdependent and the involved builders have to share the same resources or work inside the same Minecraft worlds. The accountability systems that are employed in order to track progress are the following.

Trello cards. When Trello cards are used as part of the documentation of each project, the commission's specifications might be attached to it, as well as a checklist of all the building tasks the project consists of. In articulating for their progress, builders update the project's Trello card by ticking off items from the checklists or leaving comments regarding their actions (see section 4.3.3).

Plans and screenshots. Sketches and concept art, which constitute the outcome of the planning phase (see section 5.1.1), are another type of accountability system used by the builders in order to account for their progress. This particular

resource informs the work practice of crafting content, as builders base their builds on the layouts they develop during planning. However it was revealed that plans and screenshots are occasionally shared between contractors and clients prior to the initiation of building in-game content in order to make sure that the project is on the right track. This task is carried out via the established means of communication (e.g. Skype).

In-game annotation. Whilst the aforementioned accountability systems are external to the game, there are cases where members keep in-game notes of what remains to be done or the work that was previously conducted. These annotations, taking place directly in the Minecraft worlds used by members for building content, serve the purposes of (1) informing team members of progress conducted in their absence and (2) annotating future work.

8.3.1.6 Articulating managing payments

The handling of payments is a subject that attracts a lot of attention in this community, as Minecraft itself provides no built-in system for receiving or distributing money. Due to the lack of such a system, members ended up using intermediary solutions, such as PayPal or dedicated escrow systems. In order to distribute the right amount of money to the builders involved in a project, contractors need to keep track of who is assigned to which project. Doing so turns upon the following accountability systems.

Schedules. Part of the information that is stored in schedules are the builders involved in a particular project, as well as the amount of work each of them conducted. Based on this information, those responsible for scheduling calculate the amount of money each of the builders involved is entitled to. An example that was indicated by a participant involved a point system that rewarded builders with a score for each of the builds they had constructed (see section 6.2.2.2). Their final payment was calculated based on the score they had accumulated.

Trello cards. In the case where Trello cards are used for tracking down who is assigned to which project, contractors delineate who needs to receive the money for a project based on the project cards the builders are associated with.

It needs to be mentioned that using PayPal or escrow systems requires the provision of particular information regarding the commission. When contractors request payments via PayPal, they have to create an invoice, which includes: (1) the amount of money requested for the commission; (2) the client's contact details (email address); and (3) the build under commission. Escrow systems, on the other hand, require both contractors and clients to relay what they are responsible for (build and money, respectively) to the system prior to finalising the financial transaction.

8.3.1.7 Articulating scamming occurrences

Scamming incidents can happen during building or after the final product is delivered to the clients. It was revealed that it is a matter of great import in the community and a number of accountability systems are employed by members in order to protect themselves from getting scammed, raise awareness regarding the identity of the scammer and avoid future scams by the same individual.

Blacklist. It is a record that holds the name, aliases, and affiliations of known scammers. This online document, distributed publicly to any member of Minecraft's creative community and stored in Google Docs, is maintained by contractors. Every time a scam occurs, those who got scammed submit an application for including the scammer in the blacklist, by providing proof of scam and the relevant details mentioned above.

It is also an accountability system that is occasionally used by contractors when clients they had not worked with in the past approach them in order to commission a new build.

Payment dispute procedures. These disputes are provided by the systems adopted by the members for handling payment (PayPal or escrow systems). Essentially, when a client attempts to scam a contractor by refusing to pay for the provided services, the latter can raise a dispute through these systems and demand for the payment to be handed to them.

Tweets. Every time there is a new entry in the blacklist, the union that hosts the record in their Google Docs account tweets about it by providing a summary of

the scam and of the client that performed it. Alongside that, they include a link to the blacklist.

8.3.1.8 Articulating promoting

Another important matter, related to the previous one, for Minecraft contractors and builders is making their presence visible to those that might be interested in commissioning builds or working with them. This thesis reveals that a number of systems are appropriated for accomplishing this task, namely: **fora**, **personal websites**, and **Twitter**. Regardless of the fact that both builders and contractors use the same systems for managing their visibility to the community, it became evident that each of them aimed to achieve a number of distinct matters.

- Builders usually present examples of the work they themselves have produced in order to showcase what they are capable of. On top of that, they provide supplementary information with regard to how they work, the time it takes them to finish particular builds, the money they ask for or their specialisation. Whilst this information accounts for the builders' abilities, comments in threads left by various actors (e.g. clients, contractors or even other builders) that collaborated with said builders in the past come as verification of the builders' abilities.
- Similarly, contractors use the same means for advertising the work they are associated with: the outcome of their building teams or the work they subcontract to others. This is a crucial detail, as contractors' public image benefits from the builders' labour. Since they are the ones that acquire the commissions in the first place (see section 4.2), they have the right to use the produced Minecraft builds as their own promotional materials. Although the builders' names are usually acknowledged, this act falls under the goodwill of the contractor. On top of that, builders' promotion is only indirect, as their names are only mentioned in the builds' descriptions, instead of being directly associated with them.

8.3.2 Future CSCW systems support

It becomes evident that Minecraft's digital economy is based on a fragmented infrastructure; given that the game itself does not provide the affordances for carrying out a number of work practices entailed in the arc of work, members

employ the aforementioned accountability systems in order to articulate their work. These examples of accountability systems are not part of a unified solution though. On the contrary, many of them constitute exclusive members' methods, employed by discrete teams or individuals in order to account for their work to their clients or coordinate with those they collaborate with. This occasions the need to articulate not only the work itself but also the market's infrastructure.

The following examples raise a number of design considerations as to how Minecraft's fragmented infrastructure could be supported by CSCW systems. These considerations could be of interest to game designers and developers who are interested in expanding Minecraft in a number of ways, such as: supporting cooperative work; assist the various steps of the commissioning and building process; provide safety measures for paying the involved parties when commissioning builds; tracking progress of ongoing projects; and storing and reusing different types of resources.

8.3.2.1 Finding contractors and builders

This particular job of work might be repeated multiple times by the clients, as they do not always find the most suitable contractor straight away. Searching for contractors might involve going through many forum threads, checking many comments, evaluating a plethora of portfolios and trying to establish communication with numerous contractors. On top of that, when they try to reach out to a contractor, an action that takes place through Skype or forum messages, it is not certain that the latter will accept the commission. Clients that participated in this project talked about occasions when their propositions were rejected due to the fact that contractors did not trust them or did not have the time to undertake more projects.

This discussion signifies the importance of articulating expertise and reputation in the community, as well as accounting for availability. It takes time for both the contractors and the clients to manage the aforementioned resources in order to accomplish their goals. For instance, clients have to read multiple comments and descriptions in order to establish an understanding of the contractors' skills. Many of these comments are unrelated to what they are looking for, as it is not

necessary for all commenters to be referring to previous experiences with the contractors. Due to that, clients have to spend extra time in filtering out the information that is not useful to them.

Contractors, on the other hand, need to update their status and their forum threads by writing new descriptions, uploading new pictures and attaching them to their threads. Not doing so might deter the influx of new clients and have a negative impact on their business.

8.3.2.2 Determining build's specifications

It was revealed that current methods for managing this task revolve around the appropriation and exchange of referential materials that account for what needs to be done. Through these exchanges, both clients and contractors negotiate the exact specifications of the commission (see section 4.2).

Future CSCW systems should focus on assisting these exchanges by providing to both parties the means of pointing out these specifications. This would involve a number of compulsory steps, such as the provision of the build's type and its exact size (in blocks). More importantly though, a number of supplementary steps and functionalities should be supported for the collaborative identification of the build's characteristics.

Firstly, both clients and contractors should be capable of relaying visual assets of different file formats, ranging from images to Minecraft world files. It was noticed that description or clarification always followed the exchanges of these files, so any systems support should also provide such a possibility. Members, for instance, could have the ability to annotate directly on the visual resources they share or provide textual descriptions of their requests.

Affordances for making this a bilateral process are also necessary, as contractors might need to tease out further detail from clients' requests. As such, a channel of communication between the two is essential, which would provide both the capability of discussing, leaving comments and updating the provided information or requesting more details. Based on that, these details have to be saveable and editable, as determining specifications can take more than a few hours to finish, especially due to the time differences between actors.

Once the specifications are finalised and both parties have reached an agreement, the commission should be documented so that contractors can pass it on to a number of builders. However, the aforementioned channel of communication should be maintained for future requests, as both parties might want to provide or request further clarification, or even refer back to these communications at the end of the process in instances of scamming.

8.3.2.3 Assigning task(s) to builder(s)

This particular task is managed differently in building teams and unions. In the context of building teams, assigning tasks to builders is based on the latter's availability and expertise. As such, future systems support should provide project managers or contractors, who are responsible for this job of work, with the following information:

- The areas where each builder specialises, which will facilitate the managers' decision on choosing the right type of builder for the corresponding job. For example, if they receive a commission that includes a terraforming task, they should be capable of discerning which of the available builders specialises in terraforming.
- The number of building tasks each builder is assigned to. This information is crucial for contractors and project managers as it is used for judging whether more work can be assigned to a builder.

On top of that, these systems should hold all the relevant information (the functional and aesthetic characteristics that were pinpointed during contracting, see section 4.2) for each commission and make them available to the builders that are assigned to it.

In the context of unions, there are no contractors or managers that oversee the workload of union members; it is the members themselves that claim a particular project by associating their name to it. As such, CSCW support should focus on facilitating how claiming a job is done, by: (1) allowing contractors to share a job to those that are part of a union; (2) enabling union members to claim any project they want; and (3) providing union members with all the information relevant to the project's specifications. This information is summarised in the following list:

Chapter 8: Design Implications

- The deadline for delivering the project;
- The project's documentation, ranging from textual descriptions of the build under commission, to referential materials, build size and any other type of functional and aesthetic characteristics;
- The contact details of the person that the claimant is accountable to (client or contractor);
- The reward.

Another matter that was revealed to be of significance in unions was monitoring assignments in case someone would not deliver the claimed commission on time. In this case, the union's managing team needs to be capable of: (1) tracking down those who did not fulfil their duty of building by the predesignated deadline; and (2) penalising them by lifting their right to claim a number of commissions in the future (see section 5.5.1).

8.3.2.4 Assembling and storing resources for building

Accessing any of these types of materials takes time and effort, as all the involved members need to be accustomed to where they are stored in order to find them. On top of that, due to the fact that these resources are found in sites of work that differ from the one where building takes place, builders cannot maintain their position in the game world they are using for a specific project and access the aforementioned resources at the same time. On the contrary, they have to switch from one work site to another dynamically, by pausing their creative practices. To minimise this constant switch, it was observed that builders gather all the relevant in-game referential materials around the building site prior to initiating work on a building block. This, however, does not apply to external resources (e.g. pictures found in Google) as they are not accessible via the game's interface.

Design support could address some of this overhead cost by offering solutions to minimise this constant switching between the various sites of work. On top of that, ways of storing in-game builds could further be designed and developed by focusing on:

- Tagging builds;

- Storing them in pre-designated areas;
- Integrating them in the site of work without having to manually search for them (a task that was reported being a laborious one, see section 5.4.4.2).

8.3.2.5 Tracking progress

Progress is accounted for in two distinct scenarios: (1) when clients need to be informed of the commission's status; and (2) when more than one builder work on the same project, in which case each of those involved in it needs to be up to date with regard to changes to the site of work.

Reporting to clients. It was revealed that this job of work can either take place on a formal basis with predesignated deadlines, which is usually the case in large-scale projects, or on random occurrences, when clients ask for an update on the builder's progress. In both cases, a persistent channel of communication between clients and contractors is necessary. This channel should provide the affordances for sharing textual and visual resources that depict the work conducted by the builders, e.g.: screenshots of Minecraft creations or sketches and layouts that depict future work (see section 5.1).

Most importantly, this channel needs to be secure in order to avoid any unintentional scamming. As was raised by a number of participants, reporting is done through screenshots of builds instead of sharing the actual builds or inviting clients inside the Minecraft worlds where building takes place, in order to avoid the possibility of clients downloading the product under construction. This raises the concern of establishing a secure channel of communication through which contractors and builders can safely account for their progress without having to worry about taking such precautions.

Formal reporting is found mainly in large-scale projects where multiple builders are assigned to individuated building tasks that are interdependent with each other. In these cases, project managers might be employed in order to make sure that each individual builder is on track to deliver their part on time. The tasks they need to be able to perform are the following:

Chapter 8: Design Implications

- Add, update and access the information related to a project's specifications;
- Break a project down into constituent parts;
- Assign each of these parts to one or more builders;
- Track the completion rate of each of these parts;
- Include the deadline for delivering each of these parts;
- Share this information with all those that are responsible for building the project.

This information should partially be visible to the builders too, as they need to report for their own progress to the contractors. Even though they should not be able to alter existing information, they should be capable of noting which of the assigned building tasks have been completed and relay relevant proof (screenshots) to the contractors.

Informing builders of any changes to the site of work. The fieldwork revealed that when many builders work on the same project, and share the same Minecraft world and resources, they need to coordinate with each other with regard to the progress that was done in each other's absence. Specifically, they need to be aware of the exact changes that were made in the in-game site of work, e.g.:

- The areas other builders worked on;
- The blocks that were added, removed or swapped;
- The inclusion of new builds or even Minecraft worlds (product of terraforming, see section 5.2) into an existing project.

It is important for each of the builders to be up-to-date with regard to these aspects as many decisions that are taken during building in-game content do not have to do with the commission's specifications, but rather with the personal artistic taste of those involved in content creation. Consequently, it is possible that particular additions made by individual builders will not be universally accepted by the rest of the team. Due to these cases, future support should provide the means of informing builders of any such changes in the site of work.

Another matter that was observed was that of incidental reporting, which was occasioned when more than one builders happened to be online simultaneously (see section 5.2.3.2). In such cases, builders personally informed others of their work and requested feedback. This is an important feature of collaborative work, which points to the necessity of having a unanimous decision regarding particular building cases. Given that the setting itself is inherently distributed and many builders work on different time zones, it is essential for CSCW systems to support such reporting, as meeting other builders incidentally turns upon chance. For instance, affordances for demarcating the areas that need to be evaluated, are work-in-progress or have been changed and need confirmation by the rest of the team could be provided.

8.3.2.6 *Managing payments*

Supporting this task should address the handling of the payments, as well as calculating the exact amount of money each of those involved in a project is eligible to.

Handling payments. CSCW systems should provide the means for all actors that participate in a commission (clients, contractors, and builders) to send, manage or receive the payment that corresponds to the commission. More specifically, clients should be capable of sending payments to or receive requests for payments from the contractors. Along these lines, contractors should be capable of receiving or requesting money from the clients and distributing payments to builders.

Calculating involved builders' payment. Future systems should also provide the affordances for tracking the involvement of each builder and calculating payments according to the amount of time they invested in the business. The fieldwork revealed that this job of work is conducted in a rather informal manner in most cases, with contractors either discussing with the builders the amount of money they need to receive or manually keeping track of who did what. On enhancing this task, design should focus on:

- Keeping track of the builds each builder has created for a particular project;

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- Assigning monetary value to the builds and determining the amount of money that corresponds to each builder based on that;
- Distributing the money to all the builders that were involved in a project based on the above criteria.

Of course, not all commissions are the same. There are situations where only one builder is assigned to one build, which has a predesignated reward attached to it. In these cases, builders should be entitled to what they are assigned to.

Finally, a crucial matter that was pointed out by a number of participants was that of visibility of payments. Many contractors and builders argued that team managers withheld money for covering the running costs of their business. Future systems support should have this visibility at the heart of any design choice.

8.3.2.7 Protecting against scamming

Two of the matters discussed above are in direct relevance to protecting against scamming: establishing a secure channel of communication between contractors and clients, and providing formal systems for carrying out payments.

Currently, preventing scams draws upon the distributed record of all known scammers; the blacklist. Such a precautionary measure relies on contractors being proactive, as it falls to them to consult the blacklist prior to accepting a commission. On top of that, not all actors in the market are aware of the blacklist's existence, which raises the chances for someone to get scammed.

CSCW systems could facilitate the prevention of scams by providing a platform that would make each actor's work ethic and overall reputation visible to the rest of the community. From the preceding discussion, it becomes evident that the information that is of importance with regard to recognising a scammer is:

- Contact details of the alleged scammer;
- The type of scam;
- Proof that the scam took place, e.g. Skype logs, email exchanges, etc.;
- The scammers' affiliations, e.g. teams or servers they are working for.

Moreover, part of the fieldwork findings revolve around the importance of promotional materials in this market and the endorsements any of the actors receive by those they collaborate with (see section 6.1.4). Public profiles that hold these different types of information and present them in a coherent manner could lead to the prevention of scamming, as contractors would not accept commissions offered by clients with negative or poorly-rated profiles. This is further discussed in the following section.

8.3.2.8 Promoting

The discussion in section 8.3.1.8 illustrates that making work visible to others is quite significant, as it demands to update someone's profile, as well as receiving comments by others as proof of their abilities. These actions add a number of extra steps in the completion of a commission and in ensuring that clients will continue to approach contractors or builders. On top of that, even though there are specific fora that constitute the main hubs of the community, it is not necessary for everyone to be an active member in them. In fact, some of those that participated in this research were not actively involved in the biggest Minecraft forum, which received the most visits by clients. On the contrary, they maintained their clientele by collaborating with the same people (see section 4.2.1) or by becoming members of Minecraft building teams and unions that offered them a constant flow of customers.

On top of that, when contractors are the ones that advertise the projects produced by their builders, it falls to the latter's own personal effort and initiative to create their own promotional materials (see section 6.1.4) to further boost their visibility in the community. This becomes even more pronounced in collaborative projects, where contractors list the builders that were involved in the build, without necessarily making it specific who did what. In such a case, the builders' personal efforts, input, and skills are rendered invisible.

In supporting such activities, CSCW systems could provide the means of creating and maintaining a public profile that would include:

- The profile owners' Minecraft alias and contact details;
- Their expertise, e.g. terraforming, creating organics, building, etc.;

- Their affiliations, e.g. teams, unions, servers, etc.;
- Descriptions of their work tactics and the money they ask for various builds;
- The endorsements they received;
- Their portfolio.

These profiles could also inform finding contractors and builders as well as previously mentioned work tasks that require coordination, such as protecting against scamming and assigning tasks to builders.

8.4 TAKEAWAYS

The fieldwork findings make it evident that creating content in Minecraft is based on a fragmented sociotechnical ecology. This ecology turns upon the adoption of a number of systems used not only for creating Minecraft content, but also for doing coordination work. These systems range from online software tools to bespoke accountability systems developed by members of the setting. Whilst members manage to cover their needs through these systems, it is argued that an overhead cost is added in multiple steps of the arc of work.

It is suggested that future CSCW systems can facilitate the conduct of a number of tasks in the arc. The implications raised in this chapter could inform the design of new systems for Minecraft's commissioning market and therefore its creative community. These systems in particular would support coordination, minimise the use of distinct systems in sharing resources and automatise particular steps that require manual labour in current systems. Furthermore, the raised implications focus on reducing scam occurrences through the formalisation of the channels of communication used by members.

Lastly, it needs to be mentioned that design intervention in Minecraft's context can be either in- or external to the game. As has been raised multiple times across this thesis, Minecraft is a modifiable game; members use and develop their own tools to manage their work. In taking into consideration these suggestions, designers should judge whether systems could be integrated into the game, especially in order to minimise the switching from in-game actions to external to the game activities.

Chapter 9

9 CONCLUSIONS & FUTURE WORK

This thesis' goal was to investigate the missing *what* of Minecraft studies: what is done in the doing of content production. An ethnographic study was conducted to address this research goal. The research project spanned two years and included: immersion in the field; establishing relationships with members; acquiring access to the setting; enquiring on *what* the work is and *how* it is carried out; and producing field reports that reflect on members' methods.

The fieldwork discovered an invisible digital economy residing inside the game's creative community. This digital economy has been missed by previous studies in Minecraft, which treated the game not as a field of study in itself, but rather as a resource to address distinct research agendas. Although a number of these studies covered fragments of the work related to creating content, a significant proportion of the literature misread the setting by theorising about the enacted phenomena.

This thesis contributes to the existing knowledge base on Minecraft by first and foremost discovering this community's hidden economy. It is the first study to acknowledge this economy and to present the "work to make the Minecraft economy work:" the practices that comprise the arc of work of creating in-game content. This rich understanding re-specifies current misconceptions and misunderstandings found in the existing literature about the Minecraft community; this re-specification represents another original contribution of this thesis. Lastly, this thesis makes it evident that Minecraft's commissioning market lacks CSCW support, opening the door to the establishment of malicious activities and adding an overhead cost to the segments of the arc of work. In addressing this problem, a number of design implications are suggested based on the fieldwork's findings, which represents this thesis' third contribution.

Chapter 9: Conclusions

Whilst this thesis revealed “the work to make Minecraft’s digital economy work,” a number of topics were identified that could be explored in the future.

Firstly, the previous chapter raised a number of design implications regarding the various work practices entailed in building Minecraft content. It would be possible to design and develop interventions based on these implications in order to support what players do in the game. For instance, profiles for the involved actors could be implemented to facilitate a number of activities across the arc of work. Along these lines, systems that would protect players from scamming and formalise payment procedures might alleviate significant pain points in commissioning Minecraft maps.

Besides design interventions, there are a number of “known unknowns” that warrant further investigation. An example of one of these unknowns is the internal organisation of teams and servers. Whilst it was found that there are multiple actors that play a role in how teams are formed, and in how servers are maintained, this thesis focused on explicating how financial transactions between clients, contractors, and builders are carried out as well as on how content is created; future research should address the gap in the knowledge on team organisation and server maintenance. Suggested questions to use to inform future research include:

- How is the recruitment of new team members carried out?
- How are Minecraft servers developed and maintained?
- How is accountability addressed and managed inside a server’s organisational ladder?
- What is the players’ perspective in this business? They are the final recipients of Minecraft content, so it is essential to capture their own views in this market.

Lastly, it should be mentioned that an impact grant⁹¹ has been awarded to further investigate the matter of scamming in this business. The goal of the grant is to raise awareness about commonly-seen malicious practices by bringing together

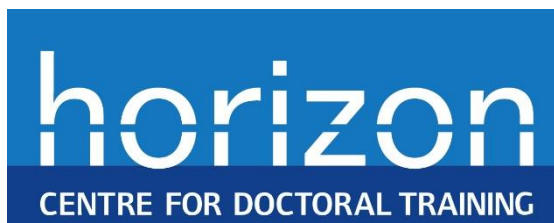
⁹¹ Supported by the Horizon Centre for Doctoral Training at the University of Nottingham (RCUK Grant No. EP/G037574/1).

Chapter 9: Conclusions

Minecraft professionals and game designers to discuss implications for designing new affordances in Minecraft or other videogames that support monetisation practices. The outcome of the grant will be exhibited via a public Minecraft server, which will be commissioned by the researcher himself.

APPENDICES

APPENDIX A: INFORMATION SHEET



Participant Information sheet

Understanding User Generated Content Production and Use

This study seeks to understand the production and use of user generated content in digital gameplay environments.

It will focus on the interactions, resources and reasoning involved in creating, using and sharing user generated content, including instances of gameplay.

If you agree to participate in the study it will involve direct observation of your ordinary interactions with user generated content and informal interviews to help us understand the 'work' involved in creating, using and sharing user generated content.

With your consent, the study will involve the collection of various types of data to help us develop a detailed understanding of content production and use. These will include video and/or audio recordings, fieldnotes, screen recordings of gameplay, and engagement in social media (such as forums and blogs).

Only the researcher will have direct access to the data. Extracts of the data will be shared with the researcher's supervisors, and may be presented at academic workshops and conferences.

Only **anonymised** data will be used in presentations and academic publications.

Appendices

The data will be stored in accordance with the 1998 Data Protection Act on a password protected computer in a secure facility. The data will only be processed by the researcher.

You may **suspend data recording** and/or **withdraw** from the study at any time during or afterwards and have your data deleted from the record. You can contact the researcher for this or any other matter at the address below.

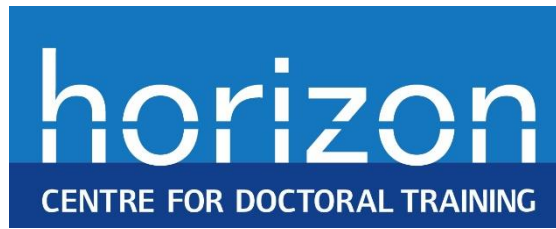
Panagiotis Koutsouras

Email: psxpk3@nottingham.ac.uk

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APPENDIX B: CONSENT FORM



CONSENT FORM

Understanding the Production and Use of User Generated Content

Objectives of the research: The research seeks to understand the production and use of user generated content. It will involve observation of the interactions involved in creating and using user generated content, including the resources and reasoning involved, and actual occasions of gameplay.

Data to be captured: To support subsequent analysis of the ‘work’ involved in creating and using user generated content the researcher would like to record data including notes, audio or video recordings and screen recordings.

Please tick the boxes below to indicate your consent (if none is given, data will not be gathered or used):

Field notes Audio Video Screen recording Social media

*Please note that your identity will **not** be disclosed by the researcher and the anonymity of all participants will be **guaranteed** to preserve their privacy.*

Use of the data: The data will be used by the researcher, Panagiotis Koutsouras, and his supervisors Dr. Andy Crabtree and Dr. Sarah Martindale to develop a detailed empirical understanding of the work involved in creating and using user generated content. Anonymised data will also be used in research reports (including the researchers PhD dissertation), academic presentations and scientific publications.

Reuse of the data: If the data is used in subsequent research projects, consent for reuse will first be sought by the researcher.

Appendices

Who has access to the data: Direct access to the data is limited to the researcher Panagiotis Koutsouras; non-anonymised extracts will be shared with his supervisors, Andy Crabtree and Sarah Martindale.

Storage of the data: Data collected will be securely stored on University of Nottingham password and firewall protected network drives and in accordance with the Data Protection Act 1998.

Your rights: Participants are free to withdraw from the research at any time without explanation and any personal data will be erased. Participants have the right to request that personal data be destroyed at any time. The researcher can be contacted on:

Panagiotis Koutsouras

Email: psxpk3@nottingham.ac.uk

Telephone number: 0044 (0) 7769626583

Horizon DTC
School of Computer Science,
University of Nottingham,
Jubilee Campus,
Wollaton Road,
Nottingham NG8 1BB,
United Kingdom

Consent Agreement (please tick as appropriate)

Participants must be aged 16 or older; all participants *must* sign this consent form.

- I have read and understand the attached information sheet, which includes information about the data to be recorded.
- I understand that I can withdraw at any time by contacting the researcher at the address provided in the information sheet, and my personal data will be erased from the records.

Appendices

- o I confirm that I am over the age of 16.
- o I agree that my anonymised data can be used in research reports.
- o I agree that my anonymised data can be used for presentation and publication purposes.

Participant's Details:

Address: _____

Name: _____

Signature: _____

Date: _____

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