

# Property in virtual worlds and insolvency

**GJL Prinsloo**



**orcid.org/0000-0003-3899-7654**

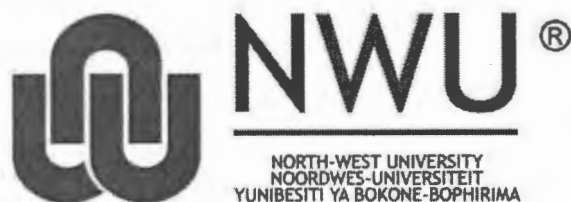
Mini-Dissertation submitted in partial fulfilment of the  
requirements for the degree *Master of Laws* in  
*Import and Export Law* at the North-West University

Supervisor: Prof W Erlank

Co-Supervisor: Prof AL Stander

Graduation May 2018

Student Number: 22812202



## KEYWORDS

Insolvency, virtual worlds, virtual property, property rights in virtual goods, end-user license agreements, property, sales of virtual goods, secondary markets

## ABSTRACT

These days, it is common for people to buy goods that only exist in cyberspace. These items have been dubbed “virtual property” by many academics, although the notion of virtual property has not been expressly accepted or denounced by the legislator.

Currently, the *status quo* is that people who purchase virtual goods within virtual worlds are granted a right to use these goods through various licensing agreements with the developers of the virtual worlds within which these goods are located. This means that the individual is not afforded the full scope of rights that would accrue to him/her would these virtual goods be classified as a manifestation of personal property.

In a vacuum these considerations do not seem to warrant much concern, however, they become more than a mere triviality when one comes to the realisation that some manifestations of virtual goods often accrue values of thousands of dollars on the secondary market. In instances where creditors are probing the virtual contents of an insolvent estate, this question becomes even more interesting.

This dissertation will consider the way the term “property” is defined in the Insolvency Act 24 of 1936 and, more specifically, whether the notion of virtual property could be recognised within the definition’s broad scope. Furthermore, it posits that the recognition of virtual property rights in the context of insolvency is not only possible, but that it would be in the interest of the creditors of the insolvent estate to do so.

## TABLE OF CONTENTS

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Virtual property defined</b>	<b>6</b>
<b>2.1</b>	<b><i>Rivalrousness</i></b>	<b>8</b>
<b>2.2</b>	<b><i>Persistence</i></b>	<b>10</b>
<b>2.3</b>	<b><i>Interconnectivity</i></b>	<b>12</b>
<b>2.4</b>	<b><i>The existence of secondary markets</i></b>	<b>14</b>
<b>2.5</b>	<b><i>Value added by users</i></b>	<b>16</b>
<b>2.6</b>	<b><i>Conclusion</i></b>	<b>17</b>
<b>3</b>	<b>Virtual property and its real-world value</b>	<b>17</b>
<b>3.1</b>	<b><i>Virtual items in single player environments and virtual worlds</i></b>	<b>19</b>
<b>3.2</b>	<b><i>Virtual worlds</i></b>	<b>20</b>
<b>3.2.1</b>	<i>World of Warcraft</i>	26
<b>3.2.2</b>	<i>Second Life</i>	32
<b>3.3</b>	<b><i>Conclusion</i></b>	<b>34</b>
<b>4</b>	<b>The law of insolvency in South Africa</b>	<b>35</b>
<b>4.1</b>	<b><i>Property which falls into the insolvent estate</i></b>	<b>37</b>
<b>4.2</b>	<b><i>Property exempt from the insolvent estate</i></b>	<b>39</b>
<b>4.2.1</b>	<i>Wearing apparel and the like</i>	39
<b>4.2.2</b>	<i>Pension benefits</i>	39
<b>4.2.3</b>	<i>Compensation for defamation or personal injury</i>	40
<b>4.2.4</b>	<i>Compensation for occupational injuries or diseases</i>	40
<b>4.2.5</b>	<i>Rights of labour tenants to land or rights in land</i>	40
<b>4.2.6</b>	<i>Shares in marital accrual</i>	40
<b>4.2.7</b>	<i>Benefits payable to miners</i>	41

4.2.8	<i>Money and assets of friendly societies</i>	41
4.2.9	<i>Unemployment insurance benefits</i>	41
4.2.10	<i>Remuneration for work done</i>	41
4.2.11	<i>Property acquired with money from the above sources</i>	42
<b>5</b>	<b>The current regulation of virtual property</b>	<b>42</b>
<b>5.1</b>	<b><i>The shortcomings of the current regulatory framework for virtual goods</i></b>	<b>47</b>
<b>6</b>	<b>Recognising property rights and interests in virtual property in cases of insolvency</b>	<b>51</b>
<b>6.1</b>	<b><i>Ownership of virtual property</i></b>	<b>51</b>
<b>6.2</b>	<b><i>Prevention of the alienation of virtual assets</i></b>	<b>52</b>
<b>7</b>	<b>Recognising rights and interests in virtual property is possible within the current legal framework</b>	<b>53</b>
<b>7.1</b>	<b><i>Recognising users' rights and interests in virtual property will naturally reach further than the insolvency context alone</i></b>	<b>55</b>
<b>8</b>	<b>Conclusion</b>	<b>57</b>

**Bibliography**

**List of Abbreviations**

## 1 Introduction

In 2004, a 22-year-old Australian, David Storey, bought a newly discovered landmass that is known today as Treasure Island. For the relatively meagre price of \$26,500 USD, Storey obtained not only the island, but a castle (unfurnished) as well as sole ownership of all the island's hunting and mining rights.<sup>1</sup> Through clever management of his mining and hunting rights, Storey was able to recoup all of his incurred expenses within a year of his initial investment and continues to enjoy monthly profit from it.<sup>2</sup>

Storey's tale may be inspiring to some. To others it might be unbelievable. Maybe he was just in the right place at the right time? Who can say? There is, however, one small factor that might cause some people to question this property tycoon's sanity: Treasure Island (castle included) does not exist – at least not in the physical realm.

Treasure Island, which is located on the fictional planet known as Calypso, is described by its creators as –

[a] large island off a newly discovered continent surrounded by deep creature infested waters [sic]. The island boasts beautiful beaches ripe for developing beachfront property, an old volcano with rumours of fierce creatures within, the outback is overrun with mutants, and an area with a high concentration of robotic miners guided by heavily armed assault robots indicates interesting mining opportunities.

It serves as a fine example of a relatively recent development in the online gaming community that is known as a "virtual world" – even with its slight mutant infestation. A virtual world can be defined as "an alternative non-physical world, in contrast to the real, physical world we live in".<sup>3</sup> This means that Treasure Island exists only as a sequence of complex codes on the servers of Project Entropia (a virtual world developed by software

---

<sup>1</sup> Lettice 2004 [http://www.theregister.co.uk/2004/12/17/tycoon\\_buys\\_non\\_existent\\_island/](http://www.theregister.co.uk/2004/12/17/tycoon_buys_non_existent_island/).

<sup>2</sup> Market Wired Press Release 2005 <http://www.marketwired.com/press-release/virtual-island-purchase-26500-recoups-investment-first-year-with-room-ongoing-profit-736156.htm>.

<sup>3</sup> Erlank 2015 *PER/PELJ* 2527.

developer MindArk).<sup>4</sup> This shocking revelation now begs the question: How did Storey acquire rights to things that do not exist in the real world? And how could he make money from these things?

Through careful market analysis, the "inhabitants" of virtual worlds (hereafter referred to as "users") and non-users alike have found that the economies of many virtual worlds are able to compete with, and in some instances even surpass, economies in the real world. The developers of these virtual worlds create digital manifestations of real-world goods, of which digital copies are then sold to digital versions of real people for real money.<sup>5</sup> In Storey's case, other users of Project Entropia paid him in virtual currency in exchange for rights that would allow their digital selves to "hunt" mutants and "mine" resources on his virtual island. He then exchanges the virtual currency that he receives as remuneration for these rights for real world currency, such as USD or ZAR.<sup>6</sup>

But why would someone ever pay real money for something that, in essence, does not physically exist?

A short answer to the above question could potentially be that the human experience has become increasingly more digitised over time. The internet has infiltrated and saturated every aspect of our daily lives to such an extent that it would be difficult to imagine the world without it. It has transformed the way we engage in transactions, accelerated our communications, and streamlined the transfer of data over great distances. For some, the internet has even provided an alternative reality

---

<sup>4</sup> Lettice 2004 [http://www.theregister.co.uk/2004/12/17/tycoon\\_buys\\_non\\_existent\\_island/](http://www.theregister.co.uk/2004/12/17/tycoon_buys_non_existent_island/).

<sup>5</sup> Market Wired Press Release 2005 <http://www.marketwired.com/press-release/virtual-island-purchase-26500-recoups-investment-first-year-with-room-ongoing-profit-736156.htm>.

<sup>6</sup> See chapter 3.2.1 below for a more detailed discussion of the real-world value of virtual items.

within which they could spend their day-to-day lives, should they choose to do so.<sup>7</sup>

Like Storey, many other human beings have ventured onto the virtual plains. Some, for example, seek to roam the plains of Azeroth and seek for their riches in *World of Warcraft*. Others seek friendships in riverside cafés in one of the many virtual suburbs of *Second Life*. Whatever their reasons, all of these people have one important thing in common: They all have interests in these virtual worlds and these interests can be directly measured in monetary value. To illustrate this seemingly illogical concept, one can look to another, slightly different, virtual world: *Eve Online*. This space-aged virtual world has developed its own economy that generates \$36 million USD per annum in real-world monetary value.<sup>8</sup> But through what nefarious means, one might ask, does real monetary value become attributed to what is, in actuality, merely a few lines of computer code located on a remote server? Explained in simple terms, the value is generated by the users of virtual worlds investing real world currency into their virtual personas.<sup>9</sup>

According to Lastowka and Hunter,<sup>10</sup> one of the most compelling characteristics of the systems of property in virtual worlds is the astonishing level of similarity that they bear to systems of property in the real-world, or, at the very least, the system of property that is known and understood in traditional Western economies. However, unlike its physical counterpart, virtual property can only exist within a collection of expensive computer hardware, known as servers, that are owned and operated by various third-party technology companies, which makes the regulation of

---

<sup>7</sup> Quadrini 2015 *Dalhousie Journal of Legal Studies* 56.

<sup>8</sup> Chayka 2013 <http://www.psmag.com/business-economics/the-real-value-of-virtual-economies-eve-world-of-warcraft-64593>.

<sup>9</sup> See 6 above.

<sup>10</sup> Lastowka and Hunter 2004 *California Law Review* 30.

the various rights and interests that could potentially manifest in relation to virtual goods a very tricky prospect.<sup>11</sup>

The fact that vast amounts of real-world capital are invested into these virtual worlds raises a variety of new and interesting legal questions when dealing with the concept of "property" in virtual worlds. Seeing as those who frequent their various virtual worlds are so willing to squander thousands on islands that they will never be able to visit in the real world, even more questions can be raised in the unfortunate event of their insolvency. Do rights of ownership of virtual property, or any other rights in virtual property, pass to the user in a virtual world? What happens to a user's virtual "assets" should their estate be sequestrated? Do these rights possess any real-world value as is commonly understood in the law of insolvency? Would a user have any claims against the developers of a virtual world in the event that they become insolvent? These are all aspects that need to be considered in a world where traditional, tangible objects are being translated into digitised versions of themselves.

The answer to the above questions can arguably be derived from the types of rights and interests that a user might have with regard to their virtual property. These rights are usually clearly defined in something that all virtual worlds have in common: A contract known as an *End User License Agreement (EULA)* or *Terms of Service (ToS)* agreement. This agreement provides for various rights relating to virtual things. Arguably, the three most common forms of these rights that are contained within an *EULA* are creditors' rights, limited real rights, and full, unrestricted ownership of the virtual property.<sup>12</sup>

Based on the above example, a strong case can be made for the relevance as well as the need for the law to recognise and regulate virtual

---

<sup>11</sup>     Quadrini 2015 Dalhousie Journal of Legal Studies 57.

<sup>12</sup>     For a more detailed discussion of the regulation of virtual property see chapter 5 below.



property in our modern age. According to Bonar-Bridges,<sup>13</sup> this need becomes especially apparent when considering the pervasive influences that the ownership of virtual property has from both economic and social standpoints.

It stands to reason that the ever-expanding online gaming community has impacted the face of the modern entertainment industry in an almost unfathomable way, leading to an ever-expanding consumer market for home online gaming. Within the last decade, scholars have witnessed exponential growth in both the legitimate and illegitimate trade of virtual goods, where trade is mostly fuelled by the popularity of online, social gaming, with estimations of the expenditure in these market segments reaching values of approximately \$235.1 billion USD by the end of 2017 – “an amount triple that of the meagre \$78.2 billion USD spent in 2011”.<sup>14</sup> This apparent appeal, according to scholars, appears to stem from the intricate social aspects that have become prevalent in modern online gaming, especially those found in the virtual worlds of massively multiplayer online role-playing games (MMORPGs).<sup>15</sup>

In the first chapter of this study, a brief introduction was provided. It provided background to the aims of the research, as well as the research question, namely how recognising rights and interests in virtual property would benefit South African insolvency practice. The second chapter will provide a brief introduction to the concept of virtual property and the different ways in which it can manifest, as well as provide suggestions regarding how to identify virtual property in its different manifestations. In the third chapter the real-world value of virtual items, as well as the manner in which they attain this value, will be explored. The concept of virtual worlds and how they differ from the conventional notion of “video games” will be highlighted, and some insights will also be given into

---

<sup>13</sup> Bonar-Bridges 2016 *Wisconsin Law Review Forward* 79-80.

<sup>14</sup> Quadri 2015 *Dalhousie Journal of Legal Studies* 57-58.

<sup>15</sup> Bonar-Bridges 2016 *Wisconsin Law Review Forward* 79-80.

possible reasons for the users' willingness to invest their real-world capital in virtual goods. The fourth chapter will focus on the nature of the law of insolvency in South Africa and focus more particularly on the property that is deemed to form part of an insolvent estate in terms of South African law, as well as the property that is explicitly exempt from the insolvent estate. The way virtual property is currently being regulated, and the effects of the terms of *EULAs* on the insolvent estate will then be discussed in chapter five, as well as a discussion regarding the suggested inability of the current regulatory measures to effectively manage virtual property and virtual property interests. Chapter six will focus on the benefits that the recognition of rights and interests in virtual property will ensure in the context of South African insolvency law. Finally, chapter seven will highlight the ways in which South African law is currently equipped to adequately deal with the recognition and protection of rights and interests in virtual property.

## **2 Virtual property defined**

As stated by Blazer,<sup>16</sup> virtual property can present itself in many different forms, including "an e-mail address, a website, a bidding agent, a video game character, or any number of other intangible, digital commodities". Various definitions for virtual property have been developed over the years, with one of the most widely accepted definitions being that of Fairfield, who attributes three distinct characteristics to virtual property that aims to distinguish it from regular code. According to Fairfield,<sup>17</sup> "virtual property is rivalrous, persistent, and interconnected code that mimics real world characteristics". Similarly, and in concurrence with Fairfield, Blazer<sup>18</sup> defines the concept of virtual property as follows:

---

<sup>16</sup> Blazer 2006 *Pierce Law Review* 137.

<sup>17</sup> Quadrini 2015 *Dalhousie Journal of Legal Studies* 60; Fairfield 2005 *Boston University Law Review* 1047.

<sup>18</sup> Blazer 2006 *Pierce Law Review* 141.

Virtual property is persistent computer code stored on a remote source system, where one or more persons are granted certain powers to control the computer code, to the exclusion of other people. Similar to traditional property, virtual property is often rivalrous, persistent, and interconnected.

In any discussion relating to virtual property, the relevant point of reference to a virtual asset is its corresponding line of computer code.<sup>19</sup> It therefore stands to reason that, should one claim ownership of a specific article of virtual property, one is, in actuality, claiming ownership of the specific virtual article's corresponding line of computer code within the mass of coded sequences that make up the virtual world within which the aforementioned article of virtual property is located.

At its most basic level, computer code can be described as "the symbolic arrangement of data or instructions in a computer program or the set of such instructions."<sup>20</sup> This data exists as "quantities, characters, or symbols on which operations are performed by a computer, being stored and transmitted in the form of electrical signals and recorded on magnetic, optical, or mechanical recording media."<sup>21</sup> Generally, this kind of computer code can be described as being only a single degree removed from a pure idea, and one person's use of this code does not necessarily preclude another person from using the same code. As Fairfield<sup>22</sup> correctly postulates, this aforementioned manifestation of computer code is, appropriately, protected by intellectual property laws. However, within the general masses of computer code exists another kind of code which has been designed to act "more like land or chattel than ideas".<sup>23</sup>

---

<sup>19</sup> Quadriani 2015 *Dalhousie Journal of Legal Studies* 59; Abramovitch and Cummings 2007 *Canadian Journal of Law and Technology* 74.

<sup>20</sup> Vocabulary.com 2017 <https://www.vocabulary.com/dictionary/computer%20code>.

<sup>21</sup> Oxford University Press 2017 <https://en.oxforddictionaries.com/definition/data>.

<sup>22</sup> Fairfield 2005 *Boston University Law Review* 1048-1049.

<sup>23</sup> Fairfield 2005 *Boston University Law Review* 1049.

In order to assist in the identification of possible instances of virtual property, Fairfield proposes three *indicia*<sup>24</sup> that, when present, can serve as a guideline to distinguish virtual property from intellectual property. These *indicia* are 1) rivalrousness; 2) persistence; and 3) interconnectivity. In addition to Fairfield's analysis of the *indicia* of virtual property, as noted by Erlank,<sup>25</sup> Blazer<sup>26</sup> proposes two further essential elements as additional points to assist courts in their identification of virtual property: 4) the existence of secondary markets; and 5) value added by users. It is submitted that these further requirements have become a necessary supplementation to the initial *indicia*. This is due to the fact that disputes over virtual property, as well as users' interests therein, are extremely likely to incorporate "unpredictable and technologically complex circumstances that will obscure analogies to strictly inherent characteristics such as rivalry, persistence and interconnectivity".<sup>27</sup> Consequently, the behaviour of secondary markets surrounding virtual property, as well as the value that users add to their virtual property in the form of real-world investments of time and money become legitimate and important considerations, especially considering that the latter two *indicia* serve as indicators of the notable economic interests and potential value of claims that one might experience in the event of a dispute arising over rights and interests in virtual property.<sup>28</sup>

## **2.1 Rivalrousness**

Rivalrousness is "the inherent characteristic of traditional property that limits control of the property, at any given time, to one person".<sup>29</sup> An essential characteristic of property rights in the real world is that they are

---

<sup>24</sup> The word "indiciu" is defined as a sign, an indication, or a distinguishing marking; Fairfield 2005 *Boston University Law Review* 1052-1055.

<sup>25</sup> Erlank *Property in Virtual Worlds* 186; Erlank 2013 *De Jure* 771.

<sup>26</sup> Blazer 2006 *Pierce Law Review* 146

<sup>27</sup> Blazer 2006 *Pierce Law Review* 146.

<sup>28</sup> Blazer 2006 *Pierce Law Review* 142.

<sup>29</sup> Blazer 2006 *Pierce Law Review* 143; Fairfield 2005 *Boston University Law Review* 1053.

exclusive and the principle that an owner of property can “use, exclude, and transfer” rights can apply to virtual items too,<sup>30</sup> and is, according to Fairfield,<sup>31</sup> one of the requirements for a virtual item to be considered virtual property. Consequently, for a sequence of code to be considered as virtual property, the specific code must be rivalrous.<sup>32</sup> This means that the code must be designed in a way that allows users thereof to exclude other users who wish to use it. This, in effect, grants the user sole possession of, for example, an item that the specific coded sequence represents in a virtual world.<sup>33</sup>

To place this concept into perspective, a t-shirt can only be worn by one person at a time. This makes the t-shirt rivalrous. Conversely, if the owner of the t-shirt wears the t-shirt, they are currently excluding everyone else from wearing it and, despite the hilarity that may ensue should two people attempt to don the exact same garment at the exact same time, it would be both impractical and contrary to the t-shirt’s design parameters should the aforementioned be allowed to happen. Similarly, in the virtual world of Norrath,<sup>34</sup> if a user “owns” an in-game weapon, only that user can sell it to another user, and only that user’s avatar will be able to wield it, to the exclusion of all other users and avatars in the virtual world.<sup>35</sup>

Rivalrousness, however, does not necessarily equate to the uniqueness of an item. There can be various users in a World of Warcraft server who own and use shields that are, in every aspect, identical and which are created by using the exact same sequence of code. Despite the aforementioned sequences of code being identical, each user using the shield will be seen as using, and possibly owning, their own copy of the specific sequence of code that created the virtual shield. Given the user

---

<sup>30</sup> Lastowka and Hunter *California Law Review* 30-31.

<sup>31</sup> Fairfield 2005 Boston University Law Review 1054.

<sup>32</sup> Quadri 2015 Dalhousie Journal of Legal Studies 60-61; Fairfield 2005 Boston University Law Review 1053-1054.

<sup>33</sup> Fairfield 2005 Boston University Law Review 1054.

<sup>34</sup> The name of the world in Sony’s virtual world *Everquest*.

<sup>35</sup> Lastowka and Hunter *California Law Review* 31.

will be the only owner of that specific copy of the particular sequence of code, they will be able to exclude others from using it.

According to Fairfield,<sup>36</sup> rivalrousness is the main factor that allows one to differentiate between intellectual property and virtual property. Intellectual property is both intangible and non-rivalrous, and the limitation on its use arises not from rivalrousness, but from rights of exclusion which are enforceable by law.<sup>37</sup> An important point to remember, however, is that rivalry is “neither a dispositive nor absolute” identifier of virtual property, it merely functions as one of the five *indicia* of virtual property.<sup>38</sup>

## **2.2 Persistence**

Persistence is “the inherent characteristic of traditional property that maintains the property, generally unchanged, even when it’s not being used”.<sup>39</sup> Abramovitch and Cummings<sup>40</sup> describe the characteristic of persistence as follows: “Persistence is the quality of an object having longevity. The [user’s] virtual shovel remains in existence in the virtual world, and it remains the property of that [user], even after he or she logs out of the virtual world.” It therefore stands to reason, according to Fairfield, that, should one wish for code to be considered virtual property, said sequence of code must be persistent as well.<sup>41</sup>

Intangible property often comes up lacking in the category of persistence, which, it is submitted, would lead to its distinction from the classification of virtual property. An example to illustrate this concept is borrowed from Blazer,<sup>42</sup> where he states:

---

<sup>36</sup> Blazer 2006 *Pierce Law Review* 143.

<sup>37</sup> Blazer 2006 *Pierce Law Review* 143.

<sup>38</sup> Blazer 2006 *Pierce Law Review* 144.

<sup>39</sup> Blazer 2006 *Pierce Law Review* 144; Fairfield 2005 *Boston University Law Review* 1054.

<sup>40</sup> Abramovitch and Cummings 2007 *Canadian Journal of Law and Technology* 75.

<sup>41</sup> Quadrini 2015 *Dalhousie Journal of Legal Studies* 61.

<sup>42</sup> Blazer 2006 *Pierce Law Review* 144.

For example, music persists only as long as the sound continues to reach an ear. Music only becomes protectable intellectual property after it is "fixed in any tangible [i.e., persistent] medium of expression," such as an audio CD. Yet the tangible and persistent audio CD is not protectable by intellectual property *per se*. The intangible music is intellectual property, while the tangible audio CD remains personal property. Thus, intellectual property is correctly characterized as intangible and lacking persistence.

However, in Blazer's opinion,<sup>43</sup> the mere presence of persistence does not function as the be-all and end-all qualifier for the existence of protectable virtual property interests. This is because "a greater degree of persistence warrants a greater property interest".<sup>44</sup> To illustrate this point, one can make use of a form of virtual property that is very well known and is, arguably, used by the majority of the developed world every single day: an e-mail account. Given an email account's persistent nature, there is a more reasonable expectation on the part of the users for courts to protect their property interests in their e-mail addresses (which can be considered as a form of virtual property) from third-party interference.<sup>45</sup>

In contrast to the aforementioned, and to illustrate Blazer's statement regarding the varying degrees of property interests depending on the level of persistence, one can take a step back to the days of yore, to the days of the *Pac Man*<sup>46</sup> video arcade machines embellishing the floors of local arcade shops. For the more skilled gamers among the world's population, obtaining a score worthy of ranking within the "Top 10 High Scores" and having one's alias flashing in lights above the arcade machine was an achievement in and of itself. However, no reasonable patron of a video game arcade would expect their name to populate the Top 10 lists for long, as it is not unusual for an arcade machine to reset completely

---

<sup>43</sup> Blazer 2006 *Pierce Law Review* 144-145.

<sup>44</sup> Blazer 2006 *Pierce Law Review* 144.

<sup>45</sup> Blazer 2006 *Pierce Law Review* 145.

<sup>46</sup> *Pac-Man* is an arcade video game developed by the video game developer company, Namco, and was first released in Japan in May 1980 and has, since then, become one of the most iconic and quintessential video games of its time. It is also one of the highest grossing video games of all time, having generated more than \$2.5 billion USD by 1990.

whenever it is unplugged from its power source.<sup>47</sup> Blazer refers to this as a weak and legally unprotectable virtual property interest, since an almost negligible degree of persistence exists in this form.<sup>48</sup>

Quadrini<sup>49</sup> adds a further *caveat* to the requirement of persistence by stating that, for a coded sequence to be classified as virtual property, the sequence must be accessible from more than one computer. In effect, this means that the coded sequence must exist in cyberspace, usually on a third-party server, and that the code must continue to exist and function in exactly the same way, even though the user has used a different computer or device to access it.<sup>50</sup>

Should one shift one's focus to the virtual shield once again, the coded sequence that brings the shield into being on the servers of *World of Warcraft* will be persistent if it will continue to exist, even though the user has logged out of their WoW account and turned off their personal computer. This persistence means that, as soon as the user logs back into the virtual world of Azeroth, the shield will be useable once again – even if the user logs into their account from a different computer.<sup>51</sup>

### **2.3 Interconnectivity**

Interconnectivity is the “inherent characteristic of traditional property to affect or be affected by more than one person and by other property”.<sup>52</sup>

---

<sup>47</sup> The high score list on the *Pac-Man* arcade machine lacks persistence largely due to the fact that it is a singular machine, not connected to any other machine, with a single point of failure. In contrast, distributed computing systems (which spread captured data over multiple machines with multiple points of failure) would grant a greater degree of persistence; Blazer *Pierce Law Review* 145.

<sup>48</sup> Blazer 2006 *Pierce Law Review* 145.

<sup>49</sup> Quadrini 2015 *Dalhousie Journal of Legal Studies* 61; Fairfield 2005 *Boston University Law Review* 1054.

<sup>50</sup> Quadrini 2015 *Dalhousie Journal of Legal Studies* 61.

<sup>51</sup> Quadrini 2015 *Dalhousie Journal of Legal Studies* 61.

<sup>52</sup> Blazer 2006 *Pierce Law Review* 145; Fairfield 2005 *Boston University Law Review* 1054.



Blazer<sup>53</sup> uses the following example to illustrate the core concept of interconnectivity:

...a free website that only allowed users to track stock prices probably would not create viable virtual property interest in the users' accounts. If the accounts were tampered with or were to disappear entirely, users would be upset, but the violation of legitimate property interests would be minimal, given the accounts lacked any capacity to affect other property directly. In contrast, a website that allowed users to buy and sell stock may create strong virtual property interests in the users' accounts. If these accounts were tampered with, ... the consequent monetary damage could be extraordinary. *Only interconnectivity distinguishes the two examples* [own emphasis].

Objects in the real world are interconnected by nature. Multiple people in the same room can experience the same objects in arguably the same ways. These objects can also affect each other through the natural laws of physics.<sup>54</sup> Comparable to physical property, which cannot exist in a vacuum, a sequence of code must be interconnected with the world around it for it to be considered virtual property.<sup>55</sup> Accordingly, different users must experience virtual property in the same way and the virtual item must be subject to the rules that govern the virtual world within which it exists – just as physical, tangible property is subject to the various laws of physics.<sup>56</sup>

It is important to note that, akin to the two *indicia* of virtual property mentioned previously, interconnectivity is “neither dispositive<sup>57</sup> nor absolute” in determining the existence of protectable virtual property interests, with varying degrees of interconnectivity suggesting varying degrees of virtual property interests that should be protected by law.<sup>58</sup> In accordance with this concept, Blazer<sup>59</sup> proposes that the legally protectable interest that arises from the presence of the element of

---

<sup>53</sup> Blazer 2006 *Pierce Law Review* 145-146.

<sup>54</sup> Fairfield 2005 Boston University Law Review 1054.

<sup>55</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 61; Fairfield 2005 Boston University Law Review 1054.

<sup>56</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 61.

<sup>57</sup> The Miriam-Webster dictionary defines the word “dispositive” as “directed toward of effecting disposition (as of a case)”.

<sup>58</sup> Blazer 2006 *Pierce Law Review* 145.

<sup>59</sup> Blazer 2006 *Pierce Law Review* 145.

interconnectivity in virtual property is based on a user's ability to use the virtual property or to otherwise create or experience an effect on the virtual property in question.

Interconnectivity as a notion presupposes "the capability to convey or transmit virtual objects among different users. It is what allows players to trade virtual goods either in a given virtual world or in the real world".<sup>60</sup> Thus, it is the characteristic of interconnectivity that allows users to experience and share their virtual property.<sup>61</sup> This trait allows the environment within which the virtual items exist to morph and change continually with the passage of time.<sup>62</sup> Even while a user sleeps, the avatars<sup>63</sup> of other users will be interacting within the world, buying and selling items; while a user is stuck in morning traffic, other users are upgrading their virtual homes; while a user attends a board meeting, other users are changing their avatars' appearance; while a user is having dinner, entire virtual governments are being overthrown; and, by the time the user logs back into the virtual world, the entire dynamic of the virtual world has changed.<sup>64</sup>

## **2.4 The existence of secondary markets**

After identifying the existence of virtual property through the application of the aforementioned three *indicia* of virtual property to the specific intangible property in question, a particular point that courts should emphasize in determining the protectability of interests in that virtual property, as well as access and control of remotely hosted computer code that makes up the virtual property, is whether a secondary market exists

---

<sup>60</sup> Quadriani 2015 *Dalhousie Journal of Legal Studies* 61-62; Abramovitch and Cummings 2007 *Canadian Journal of Law and Technology* 75.

<sup>61</sup> Quadriani 2015 *Dalhousie Journal of Legal Studies* 62.

<sup>62</sup> Lastowka and Hunter 2004 *California Law Review* 6.

<sup>63</sup> An avatar can be defined as a representational proxy within a virtual world, which proxies usually differ from their controllers in terms of their physical attributes. The word "avatar" finds its origins in the Hindu faith and was adopted into the computer gaming context by developers Lucasfilm in their virtual world *Habitat*; Lastowka and Hunter 2004 *California Law Review* 5.

<sup>64</sup> Lastowka and Hunter 2004 *California Law Review* 6.

for the property in question.<sup>65</sup> In Blazer's opinion, the existence of a secondary market should be considered regardless of whether the trade of virtual property in this secondary market is sanctioned by the developer or not.<sup>66</sup>

This above approach is suggested pursuant to the practices that have formed regarding secondary markets for virtual goods despite these actions not being sanctioned, and in some cases prohibited, by the developers. As is the norm in a Westernised capitalist society, a number of businesses have also come to recognise that certain virtual types of virtual property has a potentially high secondary market value, which has led these businesses to create entire business models around gathering virtual commodities and trading them for real-world money on the secondary market.<sup>67</sup> As a result of these practices, Blazer propounds the view that, as a matter of policy, where a free market system causes certain items to gain value, courts should protect the value so gained – granted such protection does not infringe on other substantive rights, especially those of third parties.<sup>68</sup> However, the “protection” granted to third parties should not be too excessive, as this could, in all likelihood, stifle the growth of virtual property interests and, in the long term, do more harm than good.<sup>69</sup>

With the above being said, a familiar *caveat* rears its head: the *indicium* of the existence of secondary markets for virtual property is just that, one of the five proposed *indicia*, and its absence should not serve to preclude the existence of virtual property or preclude the virtual item in question from the legal protection that is proposed in this paper.

---

<sup>65</sup> Blazer 2006 *Pierce Law Review* 146.

<sup>66</sup> Blazer 2006 *Pierce Law Review* 146.

<sup>67</sup> See the discussion about gold farming in chapter 3.2.1 below; Blazer 2006 *Pierce Law Review* 146.

<sup>68</sup> Blazer 2006 *Pierce Law Review* 146.

<sup>69</sup> Blazer 2006 *Pierce Law Review* 146.

## 2.5 Value added by users

Users in virtual worlds may assume a property interest in virtual property by customizing their virtual property to reflect their own individuality, thereby increasing its value not only in their eyes, but also in the eyes of the virtual world's community.<sup>70</sup> It is a common occurrence for users to add value to virtual property not only through the customisation of the users' avatars and other virtual assets, but more commonly by merely using it, over time, in the manner that it was intended to be used.

Blazer<sup>71</sup> does contend, however, that the value added by users in the aforementioned manner should not be confused with the Lockean theory of property through labour.<sup>72</sup> In explaining his stance, Blazer<sup>73</sup> holds that a mere contribution to the value of "an intangible resource should not automatically entitle the contributor to a property interest in the resource – just as spraying graffiti on a building should not automatically entitle the graffiti artist to a property interest in the building". Rather, the legal protectability afforded to a user in the context of virtual property should be of such a nature that it will create a greater likelihood that other users will, at some point in time, add value to their virtual property.<sup>74</sup> To put it differently, a user of a virtual world is much more likely to personalize and improve property that they accept belongs exclusively to them,<sup>75</sup> and, by appreciating and embracing this kind of behaviour among users, "the law of property ultimately benefits all people".<sup>76</sup>

---

<sup>70</sup> Blazer 2006 *Pierce Law Review* 147.

<sup>71</sup> Blazer 2006 *Pierce Law Review* 148.

<sup>72</sup> Weber 1993 *Computer/Law Journal* 191.

<sup>73</sup> Blazer 2006 *Pierce Law Review* 148.

<sup>74</sup> Blazer 2006 *Pierce Law Review* 148.

<sup>75</sup> Blazer 2006 *Pierce Law Review* 148.

<sup>76</sup> Blazer 2006 *Pierce Law Review* 148; In the virtual property context, it is obvious to see that the encouragement of user-generated value in virtual property within virtual worlds can lead to the growth of the service and broaden its appeal to a greater user base. Some virtual worlds (Like Second Life as discussed below) rely on user-generated value as its primary selling-point.

The quintessential embodiment of user-generated value in a virtual world is the avatar that is prevalent in almost all virtual worlds within the MMORPG genre,<sup>77</sup> where the average MMORPG developer's basic business model revolves around the presumption that the user will add value to their respective accounts by spending time in-game and becoming more personally invested in their avatar, even going so far as to become addicted to the game.<sup>78</sup>

## **2.6 Conclusion**

Given the rapid pace that technology, especially internet and computing technology, is evolving at, it is next to impossible to identify every possible form that virtual property could manifest in.<sup>79</sup>

Virtual property does not only exist in MMORPGs<sup>80</sup> and is therefore not only of interest to the online gamers among us. If one accepts Fairfield's definition of virtual property, then virtual property and the regimes that we choose to govern it will have an impact on the every-day lives of billions of humans. However, due to the vast scope of goods that can be covered under the umbrella-term of "virtual property", coupled with the limited space available in this paper, the focus of this paper shall remain with the most prevalent manifestation of virtual property: virtual property that exists in virtual worlds.

## **3 Virtual property and its real-world value**

In the physical world, all objects are tangible and can thus be perceived through our five senses. Because of this, there is rarely any need to justify

---

<sup>77</sup> Blazer 2006 *Pierce Law Review* 148.

<sup>78</sup> Blazer 2006 *Pierce Law Review* 148.

<sup>79</sup> Blazer 2006 *Pierce Law Review* 149.

<sup>80</sup> Quadriini 2015 *Dalhousie Journal of Legal Studies* 62; MMORPGs are a specific genre of video games where the users in the game world interact with many other users by means of a virtual avatar as the real-world user's intermediary within a virtual environment that is maintained by a third-party service provider. Players are required to work together and use their avatars to accomplish various tasks, as well as to collect a wide array of virtual items which serve to assist the user to complete the tasks at hand more efficiently.

how and why a physical object has value, whether it be financial, sentimental, nutritional, or utilitarian.<sup>81</sup> Because of this inherent value that is attributed to physical property, there is a natural desire within all humans to possess this valuable property. This, in turn, has led to the legal development of rights of ownership that can attach to specific physical property.

Originally there were two main categories of things that a person, natural or juristic, could assert to their/its ownership over – real property (land and all things affixed to it) and chattels (all other tangible objects that ownership can be attached to in the physical world).<sup>82</sup> As the law of property was forced to mature due to the rapid advances in technology, it began to recognise the existence of intangible property, which classification applies to all property that does not have a physical (corporeal) form and these things, too, began to accumulate value.<sup>83</sup>

In Blazer's<sup>84</sup> opinion, virtual property undeniably has value. It is often traded in secondary markets, where the value of virtual items can be expressed in real-world money, and users of virtual worlds regularly add value to these items through merely making use of them.<sup>85</sup> In concurrence with this statement, Lastowka and Hunter<sup>86</sup> postulate that the various property interests in property located in virtual worlds can, and usually do, bleed over into the real world. This is because assets that are accumulated by users in virtual worlds are able to gain real-world value, and every day there are numerous virtual assets that are transferred by real human beings in exchange for real-world currency.<sup>87</sup>

---

<sup>81</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048>.

<sup>82</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 3.

<sup>83</sup> *Black's Law Dictionary* "Intangible Property".

<sup>84</sup> Blazer 2006 *Pierce Law Review* 138.

<sup>85</sup> Blazer 2006 *Pierce Law Review* 141-142.

<sup>86</sup> Lastowka and Hunter 2004 *California Law Review* 29.

<sup>87</sup> Lastowka and Hunter 2004 *California Law Review* 29.

### **3.1 Virtual items in single player environments and virtual worlds**

Although one can clearly have a vested property right over a virtual item, many virtual items will not have any real-world value. A fitting example of this phenomenon would be a virtual item that forms part of a generic “First Person Shooter” (FPS) online game. The object of an FPS game is for one user’s character to kill that of another user through the use of various weapons that are provided within the simulated gaming environment. All combat elements of this virtual battleground take place within an enclosed virtual space (meaning the players’ characters cannot move outside the bounds of a predefined battle arena). At the start of a round, the players’ characters will appear on various points within the arena and different weapons will be scattered around the battlefield. Some of these weapons are vastly superior to others, so the first player to take possession of such a weapon will be able to make use of it, which often leads to a great advantage over the other players who are playing in the same arena. However, an FPS’s battleground is impermanent and the game resets completely after every battle, so no monetary value is assigned to the aforementioned weapon. A player will lose any weapons that they have accumulated throughout the pre-defined game time at the end of every round. Accordingly, an FPS game is merely that – a game. A game that resets as soon as a player accumulates enough points to win the round, or until one turns off one’s preferred gaming machine.<sup>88</sup>

A classic computer game with its non-persistent nature is very much akin to the “mental world of a two-year-old: everything revolves around you and nothing happens when you are not present”.<sup>89</sup> The virtual worlds of MMORPGs are different, in that they are both persistent and dynamic.<sup>90</sup> This has led to many users of virtual worlds ascribing monetary value, sometimes equating to absurd amounts, to certain items within these

---

<sup>88</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 4-5.

<sup>89</sup> Lastowka and Hunter 2004 *California Law Review* 5.

<sup>90</sup> Lastowka and Hunter 2004 *California Law Review* 5.

virtual worlds. To understand this logic, one must first understand what virtual worlds are and why they have become so popular as a form of entertainment.<sup>91</sup>

### **3.2 Virtual worlds**

According to Lastowka and Hunter,<sup>92</sup> to understand the concept of virtual worlds, one must first understand the social and technological forces that have assisted their coming into being. At approximately the same time the first computer games were being developed, a different group of computer programmers were engaged in the development of a new method to allow multiple computers to communicate with each other.<sup>93</sup> Today we refer to this method of communication as the Internet, and its creation and success was tantamount in the creation and adaptation of virtual worlds.

In 1996 a new kind of program was created that combined the visual elements of a traditional computer game (the graphically depicted three-dimensional world model) with the gameplay and style of a virtual world. These “new” virtual worlds are referred to as MMORPGs.<sup>94</sup> The first commercially accessible MMORPG is called Ultima Online, a virtual world created and maintained by Sony Computer Entertainment.

According to the developers of Ultima Online, a very famous virtual world, “[a virtual world] is a place you co-inhabit with hundreds of thousands of other people simultaneously. It is persistent in that the world exists independent of your presence, and in that your actions can permanently shape the world.”<sup>95</sup> Deenihan describes modern virtual worlds as “graphical, persistent, digital universes with populations per server often numbering in the tens of thousands,”<sup>96</sup> and Lastowka and Hunter<sup>97</sup> are of

---

<sup>91</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 5.

<sup>92</sup> Lastowka and Hunter 2004 *California Law Review* 14.

<sup>93</sup> Lastowka and Hunter 2004 *California Law Review* 14.

<sup>94</sup> Lastowka and Hunter 2004 *California Law Review* 14.

<sup>95</sup> Electronic Arts 2015 *What is UO?* <https://uo.com/what-is-uo/>.

<sup>96</sup> Deenihan 2008 <http://ssrn.com/abstract=1113402> at page 3.



the opinion that “virtual worlds are places where millions of people come to play, trade, create and socialise”. Pollitzer<sup>98</sup> elaborates on the aforementioned, stating that that virtual worlds are “sophisticated pieces of software that create a three-dimensional world, and allow users to create an identity (or ‘avatar’) that can move through, and interact with, this world through the eyes of this identity”. These virtual worlds are, by definition, multi-player environments that are not solely inhabited by a single user’s avatar, but rather the avatars of every user playing the game.<sup>99</sup>

One of the greatest appeals of virtual world environments to the user is the complexity of behaviour and interaction that is possible within the virtual world environment, which complexity is, for the most part, due to the massively multi-player nature of many modern virtual worlds. This appeal can be likened to that of a social network that has been transformed into a video game,<sup>100</sup> as users interact with the virtual world environment through their avatars in many ways that are similar to the interactions that humans in the real world would have in the same scenarios. Users can work together to complete complex tasks for substantial in-game rewards or attempt to prevent other avatars from completing tasks through combat and theft.<sup>101</sup>

Because of all the stresses of modern-day living, more and more people are seeking an escape from their painfully monotonous day-to-day lives. Virtual world environments offer exactly such an escape and, due to virtual worlds becoming such a popular escape from the real world, more and more people have begun to invest increasing amounts of effort and capital into their virtual world personas.<sup>102</sup> Accordingly, a substantial market where inhabitants of these virtual worlds can exchange real-world

---

<sup>97</sup> Lastowka and Hunter 2004 *California Law Review* 3.

<sup>98</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048>.

<sup>99</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048>.

<sup>100</sup> Bonar-Bridges 2016 *Wisconsin Law Review* Forward 79.

<sup>101</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048>.

<sup>102</sup> Pollitzer 2007, <https://ssrn.com/abstract=1090048>; Castranova 2001 <https://ssrn.com/abstract=294828>.

currency for virtual world goods has emerged. This has led to some interesting economic consequences, as real people are spending real money on goods that are only useful when used in a specific virtual world environment.

According to Lastowka and Hunter,<sup>103</sup> in an ontological sense –

virtual worlds have a lot in common with Disney World. Tomorrowland, Fantasyland, and Main Street are physically real, but that physical reality is largely a faux representation of environments from science fiction, fantasy, and American history – the real and represented are blended together.

The first virtual worlds ever created were known as Multi-User Dimensions, or Multi-User Dungeons or Domains (MUDs), depending on the environment and setting of the game world being represented.<sup>104</sup> These worlds were pre-created, text-based worlds that would describe the world surrounding the player at any given time in written language, requiring the player to make use of their imagination to achieve a fully immersive experience. MUDs allowed multiple users on multiple computers to communicate with each other via text, provided they were in the same virtual room, and, as long as the server hosting the specific world remained running, the virtual world continued to exist, regardless of whether the users logged out of the world or turned off their respective computers. Due to this level of permanence, if a player were to remove an item from a room that was generated in the virtual world, the next player entering the room would not find the aforementioned item anywhere in the inventory of the contents of the room, regardless of whether the former player is still logged in to the MUD environment.

The idea of MUDs was vastly improved in 1988 by a graduate student named Pavel Curtis at Carnegie Mellon university, who made use of a new programming language to create a virtual world that he dubbed “LamdaMOO”.<sup>105</sup> What set LamdaMOO apart from other pre-designed

---

<sup>103</sup> Lastowka and Hunter 2004 *California Law Review* 8.

<sup>104</sup> Lastowka and Hunter 2004 *California Law Review* 14.

<sup>105</sup> Erlank Property in Virtual Worlds 27.

virtual worlds was that it enabled its users to create their own rooms that formed part of the original virtual world. This led to a dramatic increase in popularity of this specific MUD and the number of users grew into thousands.

Many commentators such as Mayer-Schonberger and Crowley,<sup>106</sup> as well as Pollitzer,<sup>107</sup> herald LamdaMOO as being instrumental in laying the foundations for the “four critical elements of a virtual world”, which Politzer<sup>108</sup> believes are essential in creating an “environment where players assign real world value to virtual items”:

(1) Persistence: the ability of participants to return to a shared virtual space after an arbitrary time offline and shape their online activities into long term projects. ... (2) Teleology: Orienting the lives of the avatars around some end, either the accomplishment of assigned tasks, or the user driven construction of a virtual world. (3) Malleability: the ability of participants to modify the world. (4) Verisimilitude: the ability of the program to create an experience sufficiently resembling reality to enable users to see themselves in the virtual world.<sup>109</sup>

Through the passing of time since the release of Ultima Online, the computing power that has become available to the average person for home and recreational use has increased exponentially, allowing for newer, more detailed and graphically demanding virtual worlds to be released into the ever-expanding consumer market for home digital entertainment. Millions of people are adopting the “unreality” that is provided in virtual worlds, most of them by investing considerable amounts of real-world capital for the privilege of having their avatars inhabit them.<sup>110</sup> This has precipitated millions in revenue to flow into the treasure chests of the companies that develop and own these virtual worlds.<sup>111</sup>

In this growing market, two MMORPG titles, namely “Second Life” and “World of Warcraft” have become so successful that they have become

---

<sup>106</sup> Mayer-Schonberger and Crowley 2006 *Northwestern University Law Review* 1785.

<sup>107</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 7.

<sup>108</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 7.

<sup>109</sup> Mayer-Schonberger and Crowley 2006 *Northwestern University Law Review* 1786.

<sup>110</sup> Lastowka and Hunter 2004 *California Law Review* 8.

<sup>111</sup> Lastowka and Hunter 2004 *California Law Review* 8.

synonymous with the culture surrounding virtual worlds and the users that “inhabit” them. However, before discussing the value that the aforementioned two titles have contributed to the virtual property debate, it is worth mentioning another important virtual world that helped shape the current era of the genre – a game called “Everquest”.

Everquest is an MMORPG that is set in the virtual world of Norrath, a medieval fantasy realm of knights, princesses and wizards. Everquest’s claim to fame is twofold: Firstly, it was the largest virtual world of its time with a subscriber base of over 450 000 users;<sup>112</sup> and secondly, the social and economic behaviours of the “inhabitants” of Norrath were the subject of various in-depth studies. In particular, two of these studies undertaken in the world of Norrath are of importance to this dissertation, namely a study undertaken by anthropologist Yee<sup>113</sup> on the seriousness with which users of the virtual world approach their online interactions and virtual lives, and, directly related to the aforementioned, a study undertaken by Castranova<sup>114</sup> on the value that users of the virtual world are willing to assign to their in-game virtual property.<sup>115</sup>

The former study undertaken by Yee primarily focussed on the amount of time that users spend within the virtual confines of Norrath, as well as their reasons for doing so. The results of the study were more revealing than expected, and led to the conclusion that, for some of the users, Everquest is not “just a game”.<sup>116</sup> Some users were spending an average of 22.71 hours per week logged into Everquest’s servers, with about 10% of users spending more than 40 hours per week in-game, and a further 2% of users trading-in their real-world lives to spend as much as 60 hours per week

---

<sup>112</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 8; Lastowka and Hunter 2004 *California Law Review* 26.

<sup>113</sup> Yee 2006 <http://www.nickyee.com>.

<sup>114</sup> Castranova 2001 <https://ssrn.com/abstract=294828>.

<sup>115</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 9.

<sup>116</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 9.

roaming the plains of Norrath.<sup>117</sup> A separate study found that 22% of its “inhabitants” considered Norrath as their primary place of residence, further stating that, if it were possible, they would spend all of their time there.<sup>118</sup> Furthermore, 40% of the study’s participants indicated that, should they be able to earn sufficient wages in Norrath, then they would “quit their jobs or studies on earth”.<sup>119</sup>

The latter study by Castranova revealed even more astonishing results: The currency used in Norrath<sup>120</sup> was highly liquid, with a high enough frequency of exchanges taking place between the real world and the virtual world of Norrath to assign an exchange rate to the currency – which exchange rate, at the time, made it worth more than the Italian Lira or Japanese Yen. Even more eye-opening was the revelation that the theoretical GNP of Norrath was greater than that of Bulgaria, generating a value of approximately \$3.42 USD per hour.<sup>121</sup> Castranova’s<sup>122</sup> explanation for this phenomenon states that –

economists believe that it is the practical actions of people, and not abstract arguments, that determine the social value of things. One does not study the labour market because work is holy and ethical; one does it because the conditions of work mean a great deal to a large number of ordinary people. By the same reasoning, economists and other social scientists will become more interested in Norrath and similar virtual worlds as they realise that such places have begun to mean a great deal to large numbers of ordinary people.

---

<sup>117</sup> Yee 2006 <http://www.nickyee.com>; Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 9; Lastowka and Hunter 2004 *California Law Review* 5.

<sup>118</sup> Castranova 2001 <https://ssrn.com/abstract=294828>; Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 9; Lastowka and Hunter 2004 *California Law Review* 9.

<sup>119</sup> Lastowka and Hunter *California Law Review* 9; Castranova 2001 <https://ssrn.com/abstract=294828> 23

<sup>120</sup> The Norrathian currency is counted in “Platinum Pieces”, with an exchange rate (at the time of Castranova’s survey) of .0125 Platinum Pieces to the US Dollar; Castranova 2001 <https://ssrn.com/abstract=294828>; Pollitzer 2007 <https://ssrn.com/abstract=1090048> 9.

<sup>121</sup> Castranova 2001 <https://ssrn.com/abstract=294828> 35.

<sup>122</sup> Castranova 2001 <https://ssrn.com/abstract=294828> 7; Lastowka and Hunter 2004 *California Law Review* 9.

Based on the above, it is submitted that there is evidence of the seriousness with which a great number of the users of Everquest view their time spent within the virtual world of Norrath, generating value at a rate comparable to smaller, real-world economies whilst taking solace from being immersed in a graphically rendered, online, virtual platform of their choosing. Lastowka and Hunter<sup>123</sup> also support this conclusion, stating that “for numerous reasons, virtual worlds, and the social interactions that occur within them, constitute an important social development that deserves careful investigation”.

Now that an understanding of the basis for the existence of virtual worlds and the value they hold for many people has been formed, attention can now be given to the mechanics of how real-world value is created within these virtual worlds. To do so, the focus of this paper will shift once more to the two most popular virtual world titles; Second Life and World of Warcraft.

### 3.2.1 *World of Warcraft*

World of Warcraft (WoW) is an MMORPG which was released in 2004 by Blizzard Entertainment. WoW has become one of the most popular MMORPGs of all time, with a subscriber base of more than one hundred million users by the end of 2014.<sup>124</sup> WoW is set in a medieval fantasy genre with a very familiar, Tolkien-esque feeling. Set in the virtual world of Azeroth, the user manifests themselves within the virtual realm through an avatar<sup>125</sup> which the user creates by combining their choice of one of a selection of various races<sup>126</sup> with one of a range of pre-defined classes.<sup>127</sup>

---

<sup>123</sup> Lastowka and Hunter 2004 *California Law Review* 7.

<sup>124</sup> Bonar-Bridges 2016 *Wisconsin Law Review Forward* 80; Blizzard Entertainment 2014 <https://us.battle.net/forums/en/wow/topic/11423692859>.

<sup>125</sup> An avatar is defined as a digital representation of the user within the virtual world.

<sup>126</sup> A player can choose one of 13 races (Humans, Dwarves, Tauren, Elves, Undead, etc.) to determine their starting position of the game, as well as the appearance of their avatar; Blizzard Entertainment 2017 <https://worldofwarcraft.com/en-us/game/races>

Azeroth is also inhabited by various non-playable characters (NPCs), also known as “bots”,<sup>128</sup> whose activities and interactions are pre-determined by the computer program. Although these NPCs look somewhat similar to the users’ avatars, they are normally confined to a specific area and perform very limited, pre-defined functions. The two NPC functions that are of importance for this dissertation are those of the quest-giving NPCs<sup>129</sup> and the merchant NPCs.<sup>130</sup>

In Pollitzer’s<sup>131</sup> study of the virtual world dynamics of WoW, he explains the mechanics of the game through his description of the very first quest that a user’s avatar is given upon its entry into Azeroth:

There is an NPC immediately in front of him [the user’s avatar] with a bright yellow exclamation point over its head. This indicates that it has an available quest. When the [user] talks to the NPC, the NPC informs the player “we’ve been having trouble with wolves”, and requests that the [user] kill ten wolves and return with the teeth as proof... When a player attacks one of the wolves and kills it, two things happen. The player gains experience, which makes him more powerful, and the player gains the ability to take any items, (known in the game as “loot”) that appear on the body of the wolf.

The items collected from the slain wolf can then be returned to the quest-giving NPC in exchange for a monetary reward. The various items can also be sold to other vendors in the game. This basic gameplay mechanic does not change significantly throughout the progression of the game, except for the fact that, as a user’s avatar becomes more powerful, the user can challenge more powerful foes and collect more valuable loot.<sup>132</sup>

---

<sup>127</sup> A player can choose one of 12 different classes (Warrior, Priest, Warlock, Hunter, etc.) which will determine the unique talents that the user’s avatar will possess; Blizzard Entertainment 2017 <https://worldofwarcraft.com/en-us/game/classes>

<sup>128</sup> The term “bot” is a contracted form for the word “robot” and is used to describe any character in a game that is not controlled by a user.

<sup>129</sup> Quest giving NPCs require players to perform certain tasks in exchange for a reward in the form of money, experience, in-game items, or a combination of the three.

<sup>130</sup> Merchant NPCs act as trading posts where users can buy and sell certain in-game goods.

<sup>131</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> 11.

<sup>132</sup> Loot can be defined as the items that are dropped by a defeated NPC foe within the virtual world of Azeroth that serve as “rewards” to the user; Pollitzer 2007 <https://ssrn.com/abstract=1090048> 11-12.

In addition to the basic gameplay there exists a second, more intricate level of activity in the world of Azeroth – economic activity, or, the means by which in-game wealth is generated. Each user's avatar is able to learn two professions that will aid their character in either gathering the "natural" resources scattered around the virtual world, or to use these resources to create more refined goods. A classic example of the former is the mining skill, which grants the user the ability to collect ore from wherever it is generated in the world. That ore can then be traded with a character who has proficiency in blacksmithing, which allows them to use the ore to craft a range of weapons and armour. Given the fact that a single avatar can only learn a maximum of two professions, it will be impossible for it to create all the items that the user may require to progress in the game on its own. This means that the user will have to purchase the items that his avatar cannot create from other avatars in the world, which leads to the creation of an in-game economy where players can buy, sell or trade various goods for the in-game currency of "gold pieces".<sup>133</sup>

Users, through their avatars, are able to engage in the in-game economy in one of two ways. The first way a user can do so is by selling any item that they find during their quests to an NPC merchant, or to buy goods from the NPC merchant. However, through the game's design, these NPC merchants buy goods from users at well below "market" rates and very rarely have goods of any significant value for sale. This led to the development of the second manner in which users are able to engage in the virtual economy of Azeroth – trading with each other for various goods and in-game currency. Where a user's transactions with NPCs are governed by the game's code, these transactions are subject only to the laws of supply and demand and can lead to players asking, and paying, ridiculous amounts of gold pieces for rare and in-demand items that are

---

<sup>133</sup> Gold pieces can be further subdivided into silver pieces and copper pieces.



put up for sale. This means that users will have to spend their hard-earned gold pieces to acquire the finest and most powerful in-game items.

Even though virtual items in WoW have in-game value to the users that immerse themselves within its virtual landscapes, one does require the investment of some scarce real-world commodity in the creation of these virtual items for them to accumulate real-world value.<sup>134</sup> In Pollitzer's<sup>135</sup> opinion, this commodity is the time that user spends in acquiring or creating these virtual items.

Since the programming code of WoW provides for all of the basic resources on Azeroth to regenerate over a set period of time, the only necessary investment required of the user to obtain them is an investment of the time that it will take for the user to harvest the requisite resources. These harvested resources can then be provided to users whose avatars have trained skills in particular manufacturing professions which allow them to craft powerful items. Alternatively, players can invest their time in scouting the lands and completing quests, receiving powerful and valuable items as rewards upon their completion. However, in either of these instances, the user will have to invest "hundreds of hours of game play time" in order to gain anything of considerable value.<sup>136</sup> Furthermore, to ensure that the game remains competitive, these rare and valuable items that are sought after by all players are kept artificially scarce by the game's code, thereby allowing them to maintain their value due to their high demand and scarce supply, leading to some very rare and powerful items being sold for hundreds of thousands of gold pieces.<sup>137</sup> But in the same fashion as the rare and powerful items in the world of Azeroth, gold pieces also do not grow on virtual trees – they too require a significant

---

<sup>134</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> 13.

<sup>135</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> 13.

<sup>136</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> 14.

<sup>137</sup> Pollitzer refers to the sale of an item known as "Dos Santos' Famous Hunting Rifle" which was sold for 5000 gold pieces in an in-game auction house; Pollitzer 2007 <https://ssrn.com/abstract=1090048> 14.

investment of a user's time in order to collect a worth-while pile of money. But, where there is a will, there will always be a way, and through the boundless ingenuity of real-world businessmen a means was devised to monetise the painstakingly repetitive tasks required to amass large amounts of in-game currency, leading to the creation of the humble "farmer".

In gaming vernacular, a "farmer" is a user that spends vast amounts of time in-game, performing repetitive tasks that will, eventually, lead to a large stockpile of in-game resources and currency.<sup>138</sup> These farming activities are usually outsourced to workers in developing countries or Chinese labour camps in order to keep the costs of labour as low as possible.<sup>139</sup> Castranova<sup>140</sup> has referred to this kind of "farming" as "click slavery" based on the methods involved to collect any meaningful amount of gold pieces,<sup>141</sup> which process is also referred to as "gold farming".

Generally speaking, all users will inevitably have to engage in some in-game "farming" activity or another in order to amass the large amounts of gold pieces necessary to buy more powerful in-game items, however not all users are equally willing to invest the hours that it will take to collect the sometimes-exorbitant amounts of resources that they require. This has led to the founding of various "black market" companies that employ workers to "farm" in-game resources, which resources are then sold to other users for real-world currency.<sup>142</sup> Commonly referring to themselves as "MMO Service Companies", in-game currency for various MMORPGs and other virtual worlds are available to anyone willing to pay the asking price.

---

<sup>138</sup> Erlank 2013 De Jure 773; Harbinja 2014 <http://ssrn.com/abstract=2540476>

<sup>139</sup> Vincent 2011 [https://www.theguardian.com/world/2011/may/25/china-prisoners-internet-gaming-scam?CMP=share\\_btn\\_tw](https://www.theguardian.com/world/2011/may/25/china-prisoners-internet-gaming-scam?CMP=share_btn_tw).

<sup>140</sup> Castranova 2001 <https://ssrn.com/abstract=294828> 35.

<sup>141</sup> When farming, the farmer is required to locate various resources within the virtual world, gather them by clicking on them, return to a central point where these goods can be sold (or transformed into something more useful to be sold at a higher price), and repeat *ad nauseam*.

<sup>142</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> 15; Bonar-Bridges 2016 *Wisconsin Law Review Forward* 80.

Currently, the “Service Provider” MMOGAH<sup>143</sup> sells gold pieces for a price of approximately \$8 USD for 50 000 gold pieces. Putting this into perspective, extremely rare in-game items commonly sell for upward of 500 000 gold pieces each. This means that these items can easily reach a real-world value of \$80 USD a piece, with some of the rarest and most powerful items having reached in-game sales prices of more than 2 million gold pieces. Moreover, since many powerful avatars are equipped with at least five of these powerful items, the amounts of real-world value that can be found in high-level WoW accounts can potentially become very large, with the so-called “secondary market” for these virtual goods having become a \$1 billion-per-year economy.<sup>144</sup>

It is of great importance to note that none of these transactions, commonly referred to as “black market” transactions, are recognised by Blizzard Entertainment, the creators of World of Warcraft, stating in the WoW Terms of Use that:

You agree that you have no right or title in or to any such content, including the virtual goods or currency appearing or originating in the Game, or any other attributes associated with the Account or stored on the Service. Blizzard does not recognise any virtual property transfers executed outside of the Game or the purported sale, gift or trade in the “real world” of anything related to the Game. Accordingly, you may not sell items for “real” money or otherwise exchange items for value outside of the Game.<sup>145</sup>

Accordingly, it is clear that the large amounts of “real world” currency being traded for in-game gold pieces is a blatant violation of Blizzard’s Terms of Use, which can potentially lead to Blizzard suspending, modifying, terminating, or deleting the user’s account, with or without notice to the user.<sup>146</sup> Should Blizzard choose to exercise its rights in terms of these provisions, it could, in all likelihood, lead to a situation where virtual goods worth thousands of dollars are forfeited by the user for any

---

<sup>143</sup> See: MMOGAH at [www.mmogah.com](http://www.mmogah.com).

<sup>144</sup> Bonar-Bridges 2016 Wisconsin Law Review Forward 81.

<sup>145</sup> Blizzard Entertainment 2017 [http://eu.blizzard.com/en-gb/company/legal/wow\\_tou.html](http://eu.blizzard.com/en-gb/company/legal/wow_tou.html) at par 8.

<sup>146</sup> Blizzard Entertainment 2017 [http://eu.blizzard.com/en-gb/company/legal/wow\\_tou.html](http://eu.blizzard.com/en-gb/company/legal/wow_tou.html) at par 9.

potential reason, leading to large losses of the real-world value that was contained in these virtual goods.

### 3.2.2 *Second Life*

In contrast to Blizzard Entertainment's approach to the regulation of ownership of virtual property in WoW, Linden Research Inc. has taken a different approach in their virtual world environment known as "Second Life". Where WoW is still, in the classical sense of the word, an online game, it can be argued that Second Life is not a game at all, but rather a simulation of real life (hence its name) – its only likeness to a video game being the visual similarities that it shares with other computer games due to the virtual environment being graphically represented.

In Second Life, the user's main motive is not to achieve ultimate supremacy by defeating all of their in-game foes in mortal combat, but rather to develop the in-game community in conjunction with the other users. In creating Second Life, Linden has developed a virtual world that was designed to function as a parallel to the real world, allowing the users of the virtual world to interact with each other in ways that are similar to how they would interact in the real world. In addition, akin to WoW, users are able to earn in-game wealth through various means. However, unlike WoW, the generation of wealth can only be achieved by contributing something useful or sought-after to the in-game community.<sup>147</sup>

Another contrast between WoW and Second Life, which is of importance for this dissertation, is that, where Blizzard Entertainment does not recognise the real-world value of in-game virtual items, Linden not only recognises the potential value of virtual items in Second Life, the value of these items is used to encourage users to actively take part in the game. Furthermore, by stating in their promotional materials that "thousands of [Second Life] residents are making part or all of their real life [sic] income

---

<sup>147</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 17.

from their Second Life businesses,” Linden is using their approach to the ownership of virtual property to encourage new users to sign up and join Second Life too.<sup>148</sup> Linden explicitly states in its Terms of Service that Second Life users may retain their intellectual property rights in the items that they create in-game<sup>149</sup> and, due to the popularity of this concept, a book has even been written that teaches users how to become successful Second Life entrepreneurs.<sup>150</sup>

A user’s avatar in Second Life is human in form, however, the user has various options available to themselves to customise their avatar’s appearance. When the user logs in to the virtual world for the first time, their avatar will appear in an area known as the “main grid” and the user will be prompted to start exploring the virtual world around their avatar. Almost all of the in-game content in the Second Life virtual world is created by its users. This is achieved with the help of simple design and coding tools that are provided to the users by Linden which allows them to create anything they can imagine, from articles of clothing to entire new sections of the Second Life world.<sup>151</sup>

Linden’s reasoning behind this approach is to allow users to make use of the virtual world of Second Life in any way that they can conceive, with one of the most attractive prospects, of course, being the real-world money that users can make by selling their virtual items that they have created in-game to other users. Even some real-world companies have dabbled with the innovative prospect of selling virtual versions of their items to Second Life users for real-world money.<sup>152</sup>

---

<sup>148</sup> Naone 2007 <https://www.technologyreview.com/s/408373/money-trouble-in-second-life/>; Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 17.

<sup>149</sup> Linden Research, Inc. 2017 <https://www.lindenlab.com/legal/second-life-terms-and-conditions#> at par 1.2.

<sup>150</sup> Terdiman 2007 <https://www.cnet.com/uk/news/book-excerpt-the-entrepreneurs-guide-to-second-life/>.

<sup>151</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 18.

<sup>152</sup> Boss 2007 <http://www.nytimes.com/2007/09/09/business/yourmoney/09second.html>; Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 18.

According to Pollitzer,<sup>153</sup> Linden's broad recognition of virtual property rights has caused them to face a number of interesting legal quandaries. First, many questions have been asked over the exact status of the Linden Dollar, the in-game currency in Second Life, which is freely exchangeable for US Dollars through online currency exchanges.<sup>154</sup> Second, and mostly due to the aforementioned issue, many governments have started exploring the possibilities of taxing the income that users generate in Second Life, mostly due to the ease with which it can be converted to real-world currency.<sup>155</sup>

### **3.3 Conclusion**

In this chapter it has been established that virtual worlds are "graphical, persistent, digital universes with populations per server often numbering in the tens of thousands,"<sup>156</sup> where "millions of people come to play, trade, create and socialize".<sup>157</sup> Virtual worlds are manifested through sophisticated software that allows a virtual, three-dimensional world to be rendered. The users within virtual worlds can create an identity (or 'avatar') which can move through, and interact with, the virtual world at the user's behest.

Further, it was shown that virtual items gain real-world value by trading them for real-world currency on the secondary market. It was also proved that, despite this form of trading often being frowned upon or forbidden by the developers of certain virtual worlds, it has not deterred the growth of a multi-million dollar "grey-market" virtual property industry.

---

<sup>153</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 19.

<sup>154</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 19; An example of a virtual currency exchange is VirWoX which can be accessed at <https://www.virwox.com>.

<sup>155</sup> Pollitzer 2007 <https://ssrn.com/abstract=1090048> at page 19; Kadochnikov 2013 <http://www.hypergridbusiness.com/2013/04/could-linden-dollars-become-real-money/>.

<sup>156</sup> Deenihan 2008 <http://ssrn.com/abstract=1113402> at page 3.

<sup>157</sup> Lastowka and Hunter 2004 *California Law Review* 3.

Now that a case has been made for the existence of virtual property, as well as the considerable value that could be contained therein, one can proceed to determine whether this value will form part of a virtual world user's insolvent estate in the unfortunate event of their sequestration.

#### **4 The law of insolvency in South Africa**

The previous chapter has made it apparent that users of virtual worlds are more than willing to spend vast amounts of real-world currency to obtain virtual items. This is mainly because of the perceived real-world value that these virtual items have as a result of recognised, as well as “black market” trading in virtual goods for real-world money. Theoretically, transactions of this nature could lead to over-zealous users spending too much of their real-world money in their chosen virtual worlds and, as a result, become unable to fulfil their real-world obligations to real-world creditors, ultimately leading to the user becoming insolvent.

Bearing in mind the above, it is also important to consider the fact that the amount of real-world capital that is tucked away in virtual world assets is not as meagre as one might believe. Various virtual property millionaires such as Ailin “Anshe Chung” Graef<sup>158</sup> and Jon “Neverdie” Jacobs<sup>159</sup> have made veritable fortunes through the savvy trading of virtual property. These two instances are prime examples of how technology has created new ways of generating income and obtaining valuable property. It therefore stands to reason that the law, and more specifically the law of insolvency, must adapt to accommodate these changes for the benefit of

---

<sup>158</sup> Graef, more commonly known by her *alias* Anshe Chung, is a schoolteacher-turned-real-estate tycoon who made amassed a stockpile of virtual property that is reportedly worth a converted value of more than \$1 million USD; Parloff 2006 <http://fortune.com/2006/11/27/anshe-chung-first-virtual-millionaire/>; Boyes 2006 <https://www.gamespot.com/articles/second-life-realtor-makes-1-million/1100-6162315/>.

<sup>159</sup> Jacobs sold a virtual asteroid called “Club Neverdie”, located in the virtual world of *Entropia* (developed by Swedish developer *MindArk*) for \$635 000 USD after initially purchasing it for \$100 000 USD. Jacobs developed his virtual property to such an extent that it was earning him roughly \$200 000 USD *per annum* in revenue; Saenz 2010 <https://singularityhub.com/2010/11/21/man-sells-virtual-real-estate-in-online-game-for-635000-wtf-video/#sm.00000cjh5kjxhdy211q9xay4j31rp>.

the creditors of an insolvent estate, or else run the risk of losing out on millions of Rand in value that can be found in virtual property.

Legally speaking, a debtor will be deemed to be insolvent if his liabilities, fairly estimated, exceed his assets, fairly valued.<sup>160</sup> However, the aforementioned test in itself is insufficient for a debtor to be treated as an insolvent for legal purposes. For the debtor to be truly insolvent, the debtor's estate will have to be formally sequestered by a court of law, and only at such an instance where a sequestration order has been obtained, will the insolvent's estate be divested.<sup>161</sup>

In general, the purpose of obtaining a sequestration order against the insolvent estate of a debtor is to ensure the "orderly and equitable distribution of a debtor's assets where they are insufficient to meet the claims of all his creditors."<sup>162</sup> As held by Innes J in *Walker v Syfret NO*,<sup>163</sup> the underlying principle in granting a sequestration order against an insolvent's estate is:

... to ensure a due distribution of assets among creditors in the order of their preference. ... The sequestration order crystallises the insolvent's position; the hand of the law is laid upon the estate, and at once the rights of the general body of creditors have to be taken into consideration. No transaction can thereafter be entered into with regard to estate matters by a single creditor to the prejudice of the general body. The claim of each creditor must be dealt with as it existed at the issue of the order.

In his judgement delivered in *Investec Bank and Another v Mutemeri and Another*,<sup>164</sup> Trengrove AJ, in concurrence with the above, held that the purpose and effect of a sequestration order are "merely to bring about a convergence of the claims in an insolvent estate to ensure that it is wound up in an orderly fashion and that the creditors are treated equally."

---

<sup>160</sup> *Ex parte Harmse* 2005 (1) SA 323 (N) 325; *Venter v Volkskas Ltd* 1973 (3) SA 175 (T) 179.

<sup>161</sup> S20(1)(a) of the *Insolvency Act* 24 of 1936.

<sup>162</sup> Sharrock, Van Der Linde and Smith *Hockley's Insolvency Law* 4.  
<sup>163</sup> 1911 AD 141 166.

<sup>164</sup> *Investec Bank Limited and Another v Mutemeri and Another* 2010 (1) SA 265 (GSJ).



An important point to note is that the law of insolvency exists primarily for the creditors of an insolvent estate's benefit.<sup>165</sup> Accordingly, this would mean that a sequestration order will not be granted if the result of same would consume the majority of the assets belonging to the estate and therefore, according to Sharrock, Van Der Linde and Smith,<sup>166</sup> a court will only make an order of sequestration "if the expected result will be an appreciable dividend for creditors." It can, therefore, be naturally accepted that the value of the dividend that a creditor will receive, should a debtor's estate be sequestrated, is directly proportional to the value of the assets that the debtor's estate is comprised of – the more assets in the estate, the greater the value.

#### **4.1 Property which falls into the insolvent estate**

As seen from the above discussion, the main consideration that a court will make in its assessment on whether a debtor's estate is to be sequestrated is determining whether such sequestration will lead to an appreciable dividend being paid out to the creditors of the insolvent estate, which dividend's value is directly proportional to the total value of the assets comprising the debtor's estate – ergo, the more assets the estate is comprised of, the greater the value of the dividend payable to the creditors. According to Evans,<sup>167</sup> it is fundamental to the general policy in South African insolvency law that "the maximum quantity of assets be recovered and included in the insolvent estate," as this would be to the greatest advantage of the creditors.

According to *Bartelsmann ea*,<sup>168</sup> the estate of an insolvent is comprised of "all property, movable and immovable, including the proceeds of property in the hands of a sheriff under a writ of attachment, owned by him at the

---

<sup>165</sup> *Ex parte Pillay; Mayet v Pillay* 1955 (2) SA 309 (N) 311; Sharrock, Van Der Linde and Smith *Hockley's insolvency Law* 4.

<sup>166</sup> Sharrock, Van Der Linde, Smith *Hockley's insolvency Law* 4.

<sup>167</sup> Evans 2011 *PER/PELJ* 39.

<sup>168</sup> *Bartelsmann ea Mars The Law of Insolvency in South Africa* 182.

date of sequestration, and all property acquired by the insolvent, or accruing to him during sequestration". This description is directly in line with the very broad definition of "property" provided in s 2 of the *Insolvency Act*,<sup>169</sup> which provides that "property" means movable or immovable property, regardless of where it is situated in the Republic, including any contingent interests in property but excluding the contingent interests of a *fideicommissary* heir. In the same section, "immovable property" is defined as "land and every right or interest in land or minerals which is registrable in a deeds registry within the Republic", and "movable property" means "every kind of property and every right or interest which is not immovable property",<sup>170</sup> including incorporeal rights.<sup>171</sup> Even though assets belonging to the insolvent which may not be situated within the Republic are not explicitly included in the definition of "property" contained in the Act, if the debtor is domiciled within the jurisdictional area of the court, a sequestration order handed down by the court will divest them of all their movable property, wherever it may be situated.<sup>172</sup>

The description of goods that are considered as the "property" of the insolvent estate provided by the legislator is extremely broad to say the least, and it allows for a strong argument to be made in favour of the fact that the legislator's intention was to include almost all things considered as property and owned by the insolvent, or which the insolvent has a proprietary interest in, to form part of the insolvent's estate, thereby maximising the theoretical dividends payable to the creditors of the insolvent estate. However, the *Insolvency Act*<sup>173</sup> does not expressly distinguish between assets that are included and assets that are excluded from the insolvent estate. Therefore, due to the broad scope of things that

---

<sup>169</sup> Insolvency Act 24 of 1936.

<sup>170</sup> Section 2 of the *Insolvency Act* 24 of 1936; Sharrock, Van Der Linde and Smith *Hockley's Insolvency Law* 71.

<sup>171</sup> *Bank of Lisbon and South Africa Ltd v The Master* 1987 (1) SA 276 (A) at 290I; *Bartelsmann ea Mars* The Law of Insolvency in South Africa 182.

<sup>172</sup> *Bekker NO v Kotze and others* 1996 (4) SA 1293.

<sup>173</sup> Act 24 of 1936.

can fall within the definition provided by the legislator, provision has to be made for certain goods that will not form part of the insolvent estate.<sup>174</sup>

## **4.2 Property exempt from the insolvent estate**

To fully understand the broad spectrum of goods that are considered to form a part of a debtor's estate for purposes of insolvency, one would do well to consider which assets the legislator deems not to form part of an insolvent estate. This would assist one in accurately gauging the prospective value of the assets contained in the estate, and ultimately, in appreciating the full benefit that these assets would provide to the creditors. This step is necessary due to the vast scope of goods that seem to be included through the open-ended language used by the legislator within the Act's definition of "property".

### **4.2.1 Wearing apparel and the like**

In terms of section 82(6) of the *Insolvency Act*<sup>175</sup> an insolvent may retain any wearing apparel and bedding for his own use, as well as any household furniture and other "means of substance" as the creditors may determine by resolution.<sup>176</sup>

### **4.2.2 Pension benefits**

Any pension to which the insolvent is entitled for services rendered by them is excluded from the insolvent estate.<sup>177</sup> There are various other statutory measures that render protection to the insolvent's pension, of which the most important, in the opinion of Sharrock, Van Der Linde and Smith,<sup>178</sup> is section 3 of the *General Pensions Act*.<sup>179</sup>

---

<sup>174</sup> Evans 2011 *PER/PELJ* 39.

<sup>175</sup> Act 24 of 1936.

<sup>176</sup> Sharrock, Van Der Linde and Smith *Hockley's Insolvency Law* 72.

<sup>177</sup> Section 23(7) of the *Insolvency Act* 24 of 1936.

<sup>178</sup> Sharrock, Van Der Linde and Smith *Hockley's Insolvency Law* 73.

<sup>179</sup> Act 29 of 1979.

#### 4.2.3 Compensation for defamation or personal injury

By virtue of section 23(8) of the *Insolvency Act*,<sup>180</sup> compensation received by the insolvent for any loss or damage resulting from defamation or personal injury that they may have suffered, whether before or after the sequestration of their estate, is exempt from the insolvent estate and can be recovered by the insolvent for their own benefit.<sup>181</sup>

#### 4.2.4 Compensation for occupational injuries or diseases

According to Sharrock, Van Der Linde and Smith,<sup>182</sup> compensation that becomes payable, or which has already been paid, to the insolvent pursuant to the provisions of the *Compensation for Occupational Injuries and Diseases Act*<sup>183</sup> would be excluded from the insolvent estate. This form of compensation will be excluded based on the grounds that it is compensation for “loss or damage suffered as a result of personal injury” as described above.<sup>184</sup>

#### 4.2.5 Rights of labour tenants to land or rights in land

If the insolvent is entitled to apply for land or a right in land to be awarded to them under the *Land Reform (Labour Tenants) Act*,<sup>185</sup> such a right will not form part of their insolvent estate.<sup>186</sup>

#### 4.2.6 Shares in marital accrual

In the event that the insolvent is married, and their marriage is subject to the accrual system, the insolvent’s right to share in the accrual of the joint estate will not form part of the insolvent’s estate.<sup>187</sup>

---

<sup>180</sup> Act 14 of 1936.

<sup>181</sup> Sharrock, Van Der Linde and Smith *Hockley’s Insolvency Law* 73.

<sup>182</sup> Sharrock, Van Der Linde and Smith *Hockley’s Insolvency Law* 74.

<sup>183</sup> Act 130 of 1993.

<sup>184</sup> Sharrock, Van Der Linde and Smith *Hockley’s Insolvency Law* 74.

<sup>185</sup> Act 3 of 1996.

<sup>186</sup> Sharrock, Van Der Linde and Smith *Hockley’s Insolvency Law* 77, Section 39(c) of the *Land Reform (Labour Tenants) Act* 3 of 1996.

#### 4.2.7 *Benefits payable to miners*

Where the insolvent is a miner and is, by virtue thereof, entitled to a gratuity, a benefit, or money that is paid to the miner in respect of such, such aforementioned gratuity, benefit, or moneys will not form part of their insolvent estate.<sup>188</sup>

#### 4.2.8 *Money and assets of friendly societies*

Where monies become due to an insolvent as benefits of a friendly society, where the insolvent had resigned from the friendly society after having been a member of said society for at least 4 years, such monies will not form part of their insolvent estate.<sup>189</sup>

#### 4.2.9 *Unemployment insurance benefits*

Where the insolvent is entitled to benefits under the *Unemployment Insurance Act*,<sup>190</sup> such benefits can neither be assigned nor attached by an order of court, except in terms of an order that relates to the maintenance of the insolvent's dependents.<sup>191</sup> Whether this means that such benefits do not form part of the insolvent estate, however, is not completely certain.<sup>192</sup>

#### 4.2.10 *Remuneration for work done*

Remuneration received by the insolvent for work done or for professional services rendered by them after the date of sequestration does not form part of the insolvent estate.<sup>193</sup> Section 23(5) of the *Insolvency Act*<sup>194</sup>

---

<sup>187</sup> Section 3(2) of the *Matrimonial Property Act* 88 of 1984; Sharrock, Van Der Linde and Smith *Hockley's Insolvency Law* 76.

<sup>188</sup> Section 131(1) of the *Occupational Diseases in Mines and Works Act* 78 of 1973; Sharrock, Van Der Linde and Smith *Hockley's Insolvency Law* 74.

<sup>189</sup> Section 48A(1) of the *Friendly Societies Act* 25 of 1956; Sharrock, Van Der Linde and Smith *Hockley's Insolvency Law* 77.  
<sup>190</sup> Act 63 of 2001.

<sup>191</sup> Sharrock, Van Der Linde and Smith *Hockley's Insolvency Law* 74.

<sup>192</sup> Sharrock, Van Der Linde and Smith *Hockley's Insolvency Law* 74.

<sup>193</sup> Section 23(9) of the *Insolvency Act* 24 of 1936.

<sup>194</sup> Act 24 of 1936.

qualifies this provision by adding that “the trustee [of the insolvent estate] is entitled to any moneys which the insolvent has received (or will receive) in the course of his profession ... which, in the opinion of the Master, are not necessary for the support of the insolvent and his dependants.”<sup>195</sup> This means that the remuneration that the insolvent receives as compensation for work done after having been sequestered will vest in them until such a time as the Master expresses that a portion thereof is unnecessary to support the insolvent or their dependents.<sup>196</sup>

#### *4.2.11 Property acquired with money from the above sources*

Any property acquired by the insolvent with moneys from the above sources will *prima facie* not form part of the insolvent estate and remains the property of the insolvent. It shall remain the property of the insolvent in the absence of an opinion by the Master to the contrary.<sup>197</sup>

### **5 The current regulation of virtual property**

As stated above,<sup>198</sup> a virtual world’s fundamental building blocks are the computer code used to create it. Essentially, this code is a list of instructions that dictates the who, what, where, when, and how of the virtual world.<sup>199</sup> The method of programming leaves absolutely no room for interpretation of the code and the laws of what can and cannot be done are, in every sense of the word, binary. The basic rules of the virtual world are hard-coded into the basic programming framework of the virtual world, collectively forming a body of virtual world law.<sup>200</sup> According to Erlank,<sup>201</sup> the code is, in this sense, similar to the fundamental laws of nature, as they are “unchangeable (by the avatar), inevitable (for the avatar) and not

---

<sup>195</sup> Sharrock, Van Der Linde and Smith *Hockley’s Insolvency Law* 72.

<sup>196</sup> Sharrock, Van Der Linde and Smith *Hockley’s Insolvency Law* 72; *Ex parte Van Rensburg* 1946 OPD 64 70.

<sup>197</sup> Sharrock, Van Der Linde and Smith *Hockley’s Insolvency Law* 77; *Ex parte Fowler* 1937 TPD 353.

<sup>198</sup> At chapter 3.

<sup>199</sup> Erlank *Property in Virtual Worlds* 65.

<sup>200</sup> Erlank *Property in Virtual Worlds* 65.

<sup>201</sup> Erlank *Property in Virtual Worlds* 65.

open for negotiation or interpretation (by the players [users])". This means that these laws do not need to be enforced by any external influences.<sup>202</sup>

However, due to the fact that the coded sequences contained in the source codes that create virtual worlds can only be used to control the manner in which the virtual world environment and its users' avatars interact with each other, the developers of virtual worlds and their service providers make use of "contract to govern what occurs supplementary to the workings of the virtual world".<sup>203</sup>

As explained in chapter 2 above,<sup>204</sup> the code that creates virtual property can only exist within a collection of expensive computer hardware, known as servers, that are owned and operated by various third-party technology companies.<sup>205</sup> This means that there are competing interests that are present in the discussion around property regimes for virtual property: first, a user's property interest in "a rivalrous, interconnected, and persistent line of code"; and secondly, the rights of the user to access the aforementioned line of code located on a third-party service provider's servers and, consequentially, the limitation of the certain rights of the virtual world's developer and other third party service providers.<sup>206</sup> The existence of these competing interests means that the regulation of the rights and interests in virtual property becomes a balancing act between the rights of the purported "owners" of these virtual property rights – the users of the respective virtual worlds – and the developers that keep the proverbial lights of the virtual world from going out by creating and maintaining the base code of the virtual world and to whose effort the existence of the virtual property can, in most cases,<sup>207</sup> be contributed.<sup>208</sup>

---

<sup>202</sup> Erlank Property in Virtual Worlds 65.

<sup>203</sup> Quadrini 2015 *Dalhousie Journal of Legal Studies* 64; Abramovich and Cummings 2007 *Canadian Journal of Law and Technology* 76.

<sup>204</sup> See chapter 2 above.

<sup>205</sup> Quadrini 2015 *Dalhousie Journal of Legal Studies* 57.

<sup>206</sup> Quadrini 2015 *Dalhousie Journal of Legal Studies* 79-80.

<sup>207</sup> Unless the virtual property is user-created as in *Second Life*.

<sup>208</sup> Quadrini 2015 *Dalhousie Journal of Legal Studies* 57.

Virtual property is governed by a mixture of copyright law and the law of contract, with copyright law being the main form of “protection for computer programs and other works in digital form.”<sup>209</sup> This means that the basic laws that will apply to the segments of code that create the graphical representation of any virtual world is the law of intellectual property, which “[creates] a right to exclude on the part of the intellectual property holder that can be exercised to eliminate emergent virtual property rights.”<sup>210</sup> However, where the concept of virtual property, as well as the rights and interests in and to it, are concerned, EULAs and ToS agreements are the main form of governance.<sup>211</sup>

According to Quadrini,<sup>212</sup> EULAs and ToS agreements encompass “features of proper [use] and decorum that cannot be easily written into computer code,” which allows developers and service providers to put the relationship between themselves and the users of the respective virtual worlds down in writing. They are used to govern the users’ subscription to their chosen virtual world, as well as the economy of the virtual world, and, due to these agreements being “clickwrap”<sup>213</sup> agreements, all users within the virtual world are assumed to have read and understood the contents of these agreements.<sup>214</sup>

In reality, however, very few, if any, users pay any heed to the contents of EULAs and ToS agreements, and the only reason the terms and conditions are blindly accepted by users so willingly is because of the fact that users’ licences to use and enjoy their choice of virtual worlds can be

---

<sup>209</sup> Quadrini 2015 *Dalhousie Journal of Legal Studies* 64.

<sup>210</sup> Quadrini 2015 *Dalhousie Journal of Legal Studies* 64; Fairfield 2005 *Boston University Law Review* 1082.

<sup>211</sup> Blazer 2006 *Pierce Law Review* 137.

<sup>212</sup> Quadrini 2015 *Dalhousie Journal of Legal Studies* 64; Abramovich and Cummings 2007 *Canadian Journal of Law and Technology* 76.

<sup>213</sup> Clickwrap agreements are standard Boilerplate agreements that earn their names from the fact that a user is required to click on an “I accept” button in a dialogue box in order to gain entrance into the virtual world.

<sup>214</sup> Bonar-Bridges 2016 *Wisconsin Law Review* Forward 81.



revoked if they do not, resulting in the users forfeiting all of their in-game assets.<sup>215</sup>

Given the broad field of application of the terms and conditions contained in EULAs and ToS agreements, many of the relationships between the developers of virtual worlds and the users within those worlds are governed by these all-powerful agreements.<sup>216</sup> Many of these agreements, if not the overwhelming majority of them, brand a user's in-game virtual property as the intellectual property of the virtual world's developer which is subsequently licensed to the user. In doing so, it would seem that these clickwrap agreements are purposefully designed to minimise any liability of the service provider by stifling the creation of any property interests in in-game virtual items in favour of the user. Despite this fact, the majority of users do not familiarise themselves with the contents of these protracted EULAs and TOS that apply to their respective virtual worlds and, because of this, they deal with any issues regarding virtual property as though they have a vested property interest in the specific virtual item in question. This is one of the many reasons why users invest large sums of money in their respective virtual worlds whilst being completely unaware of the current real-world legal implications of such decisions, especially in relation to the user's ultimately acknowledged property interest in their virtual items (or the possible lack thereof). This leads to the question whether it is in the public interest for the law to tolerate the use of these agreements "that prevent the formation of property rights first instance any more than we can tolerate other consensual restraints on alienation."<sup>217</sup>

In general, the class of interest that a user will receive in his/her virtual property will be a license to use and enjoy the virtual property that the user has accumulated within the virtual world. This license is revocable at the instance of the developer for any one of a great number of reasons

---

<sup>215</sup> Bonar-Bridges 2016 Wisconsin Law Review Forward 82.

<sup>216</sup> Bonar-Bridges 2016 Wisconsin Law Review Forward 80.

<sup>217</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 64; Fairfield 2005 Boston University Law Review 1083.

stipulated in the EULA or ToS agreement.<sup>218</sup> Quadrini<sup>219</sup> is of the opinion that the reason for developers' use of this "licensed-but-not-sold" concept is for the EULAs and ToS agreements to limit and even eliminate users' ownership of virtual goods within virtual worlds, and primarily turning into a "shrewd attempt by [service providers] to ... eliminate ownership and knock out the market for used digital goods before it has a chance to establish itself."

On the other hand, where a certain *modus operandi* becomes prevalent, one will always be able to find an exception. As discussed above,<sup>220</sup> the developers of Second Life have followed a radically different approach in dealing with user accounts and the licensing of virtual property. While Linden Labs does grant the users of Second Life a limited license to access the virtual world, and more specifically virtual real estate, the specific license is described as a –

...graphical representation of three-dimensional virtual world space. Linden Lab [Second Life's developer] may or may not charge fees for the right to acquire, transfer or access Virtual Land, and these fees may change at any time. When you acquire Virtual Land, Linden Lab hereby grants you a limited license ("Virtual Land License") [sic] to access and use the features of the Service associated with the virtual unit(s) of space corresponding to the identifiers of the Virtual Land within the Service as designated by Linden Lab.<sup>221</sup>

Therefore, it can be seen that Second Life users, in contrast with the WoW users, do obtain some rights in respect of their virtual property that they create and/or obtain within the Second Life virtual world. However, as will be discussed below, the approach that is followed by developers in using intellectual property laws and contract to limit, and in some cases

---

<sup>218</sup> Quadrini 2015 *Dalhousie Journal of Legal Studies* 65; Slaughter 2008 Yale Law School Legal Scholarship Repository 29.

<sup>219</sup> Quadrini 2015 *Dalhousie Journal of Legal Studies* 57; Peckham 2012 <http://techland.time.com/2012/06/26/redigi-lets-you-resell-used-digital-music-but-is-it-legal>.

<sup>220</sup> At chapter 3.2.2 above.

<sup>221</sup> Linden Research, Inc. 2017 <https://www.lindenlab.com/legal/second-life-terms-and-conditions#>.

eliminate, rights and interests that users may have in virtual property is untenable in our modern society.

### ***5.1 The shortcomings of the current regulatory framework for virtual goods***

Currently, virtual property is regulated by means of a combination of intellectual property laws and contract.<sup>222</sup> It is submitted, however, that this method of regulation is inappropriate, mainly due to the vast differences between virtual property and intellectual property.

The key difference between virtual property and intellectual property stems from the rivalrous nature that is attributed to virtual property. Although intellectual property and copyright laws protect “no particular object owned by a particular person”, but instead grants “a right to prevent the replication of a particular abstract information pattern (e.g. the sequence of words in a book),” a virtual property right is an interest in a particular piece/sequence of copyrighted code, which code in itself is the manifestation of the intellectual property interest of its creator and which is subject to “exclusive possession and market alienation”.<sup>223</sup>

What this means is that the code that is vital to the existence of virtual property creates a “complementary, yet separate” interest from the intellectual property rights that vest in the creator of the coded sequence. Fairfield<sup>224</sup> explains this phenomenon as follows:

We understand instinctually and logically that ownership of a thing is always separate from ownership of the intellectual property embedded in a thing. Ownership of a book is not ownership of the intellectual property of the novel that the author wrote. The book purchaser owns the physical book, nothing more. Ownership of a CD is not ownership of the intellectual property in the music. The music purchaser owns that copy of the music, nothing more.

---

<sup>222</sup> See chapter 5 above.

<sup>223</sup> Quadriini 2015 *Dalhousie Journal of Legal Studies* 67-68.

<sup>224</sup> Fairfield 2005 *Boston University Law Review* 1096.

Through the use of Fairfield's analogy, Quadrini<sup>225</sup> postulates that it is possible for virtual property to have a dualistic nature which would allow for "both property and intellectual property interests to co-exist". To illustrate this concept within the context of property located in virtual worlds, it can be alleged that the service provider (such as Blizzard in WoW or Linden Labs in Second Life) will retain their intellectual property rights and copyright in the specific order of the characters in the various sequences of code that generate specific items of virtual property, whereas the end-user will have a distinct property interest in the rivalrous code sequence that forms the basis of their specific virtual item.

Although the nature of the various interests that users are bestowed with will differ from developer to developer, one thing almost always remains constant: the developers' use of licensing through EULAs and TOS allows them to retain control over the various virtual items' source codes.<sup>226</sup> This means that developers make use of the aforementioned agreements to curb a user's ability to alienate in-game virtual property, among other things, by preventing users from "transferring, selling, or trading" virtual property that they have "purchased" from developers.<sup>227</sup> An example of these terms can be found in the terms of use for WoW, where Blizzard Entertainment states that:

Blizzard owns, has licensed, or otherwise has rights to all of the content that appears in the Game. [...] Blizzard does not recognise any purported transfers of virtual property outside of the Game, or the purported sale, gift or trade in the "real world" of anything that appears or originates in the Game. Accordingly, you may not sell in-game items or currency for "real" money or exchange those items or currency for value outside of the game.<sup>228</sup>

EULAs and TOS almost uniquely characterise in-game virtual items as the intellectual property of the developer, whilst at the same time granting

---

<sup>225</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 68; Fairfield 2005 Boston University Law Review 1096.

<sup>226</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 66.

<sup>227</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 66.

<sup>228</sup> Blizzard Entertainment 2017 [http://eu.blizzard.com/en-gb/company/legal/wow\\_tou.html](http://eu.blizzard.com/en-gb/company/legal/wow_tou.html).

users a revocable license to make use of the virtual world and its contents as a service that the developer provides to the user. Should a user diverge from the terms contained in the aforementioned agreements, heavy penalties can be imposed by developers, who are granted ample discretion and power through these agreements to protect their interests.<sup>229</sup>

Through these EULAs and ToS, developers make use of various intellectual property law and contractual provisions to ensure that the user is left with as little rights and interests in their virtual property as is legally possible.<sup>230</sup> Peckham<sup>231</sup> describes these agreements, in conjunction with the "licensed-but-not-sold" approach that developers follow in respect of users' virtual property interests, as a "shrewd attempt by [developers] to... eliminate ownership and knock out the market for used digital goods before it has a chance to establish itself". Furthermore, these EULAs and TOS agreements regularly contain near air-tight arbitration clauses which prevent users from challenging the equitability of these agreements in a court of law.<sup>232</sup>

For users of virtual worlds to gain the full benefit of their virtual assets, the recognition of virtual property rights is paramount. In this regard, Blazer<sup>233</sup> suggests a "form over function" approach to the classification of virtual property. This means that, even though the EULA or TOS of a virtual world stipulates that the in-game assets "are not virtual property", it should not be the determinative factor; "just as a disclaimer stating that 'this is not a security' cannot magically change the nature of company stock".<sup>234</sup>

---

<sup>229</sup> Quadriini 2015 *Dalhousie Journal of Legal Studies* 66.

<sup>230</sup> Quadriini 2015 *Dalhousie Journal of Legal Studies* 57.

<sup>231</sup> Peckham 2012 <http://techland.time.com/2012/06/26/redigi-lets-you-resell-used-digital-music-but-is-it-legal>.

<sup>232</sup> Quadriini 2015 *Dalhousie Journal of Legal Studies* 57.

<sup>233</sup> Blazer 2006 *Pierce Law Review* 150.

<sup>234</sup> Blazer 2006 *Pierce Law Review* 150.

Bonar-Bridges<sup>235</sup> is of the opinion that EULAs and TOS agreements are not the proper way to govern virtual property and the interests that it creates, calling these contractual measures by developers a "poor shield for users of these alternate realities – especially in situations where players have large monetary investments". It is also the view of many legal scholars<sup>236</sup> that, due to the rivalrous nature of virtual property, its characterisation as intellectual property by EULAs and ToS agreements is inappropriate.<sup>237</sup> Even though the contractual regime of intellectual property rights in virtual property has become a common industry standard, "virtual property rights are actually a very poor match for intellectual property law,"<sup>238</sup> and leave very much to be desired from an insolvency perspective.

In Blazer's opinion, however, the current legal *status quo* pertaining to property rights and interests in virtual property poses a great risk to users that transact in virtual property amongst each other.<sup>239</sup> However, the existence of this risk cannot be attributed solely to the perceived malice of software developers, as these risks exist "paradoxically in part due to the efforts of service providers [and developers] to ensure the quality of their services".<sup>240</sup> But regardless of the intentions at play, the uncertainty within the field of virtual property law raises numerous questions regarding the conscionability of certain clauses contained within the average EULA and ToS agreement and the ways in which these clauses purport to undermine the enforceability of a user's property interests in their virtual property.<sup>241</sup>

---

<sup>235</sup> Bonar-Bridges 2016 Wisconsin Law Review Forward 80.

<sup>236</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 67-68; Fairfield 2005 Boston University Law Review 1096; Bonar-Bridges 2016 Wisconsin Law Review Forward 80.

<sup>237</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 67.

<sup>238</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 67.

<sup>239</sup> Blazer 2006 *Pierce Law Review* 137.

<sup>240</sup> Blazer 2006 *Pierce Law Review* 137.

<sup>241</sup> Blazer 2006 *Pierce Law Review* 138.

## **6 Recognising property rights and interests in virtual property in cases of insolvency**

Recognition of the rights and interests that users have with regard to virtual property is important for the law of insolvency, especially where one considers the requirement that the maximum quantity of assets should be recovered and included in the insolvent estate. This goal can be achieved in the following ways: first, by merely recognising a user's rights and interests in virtual property; and, secondly, through using the measures already provided in the *Insolvency Act*<sup>242</sup> to ensure that an insolvent user does not alienate their virtual property to the detriment of the creditors of the insolvent estate.

### **6.1 Ownership of virtual property**

As stated above,<sup>243</sup> the estate of an insolvent is comprised of "all property, movable and immovable, including the proceeds of property in the hands of a sheriff under a writ of attachment, owned by him at the date of sequestration, and all property acquired by the insolvent, or accruing to him during sequestration". Given the fact that virtual property is not explicitly exempt from the insolvent estate,<sup>244</sup> the recognition of an insolvent user's property rights and interests in virtual property will ensure that all of the user's virtual property, as defined above,<sup>245</sup> will form part of the insolvent estate.

Conversely, if an insolvent has any property that belongs to another person in his possession, the owner has a duty to notify the trustee (or other person) of the fact that he is the owner before the property is sold.<sup>246</sup> Hypothetically, this is the position that a developer or service provider will

---

<sup>242</sup> Act 24 of 1936.

<sup>243</sup> At chapter 4.1 above.

<sup>244</sup> See the discussion at chapter 4.2 above.

<sup>245</sup> At chapter 2 above.

<sup>246</sup> Section 36(5) of the *Insolvency Act* 24 of 1936; Bartelsmann ea 204; *Corporate Liquidators (Pty) Ltd v Wiggill* (2006) All SA 439 (T).

find themselves in, given the terms and conditions contained in the majority of EULAs and ToS agreements.<sup>247</sup> Even if the developer does not inform the trustee timeously and the virtual goods are sold in execution *bona fide*, the developer will be able to claim the proceeds of the sale from the insolvent estate and thereby reduce the value of the insolvent estate.<sup>248</sup>

## **6.2 Prevention of the alienation of virtual assets**

As soon as a debtor's estate has been sequestrated by a court, a reduction in status is imposed on the debtor,<sup>249</sup> most notably in respect of their contractual capacity. The *Insolvency Act*<sup>250</sup> does not deprive the debtor of their contractual capacity completely, however, to protect the interests of their creditors, the Act does impose certain restrictions on the debtor's ability to contract. An example of this restriction which is of importance to this dissertation is the prohibition placed on the debtor from enter into a contract which disposes of, or purports to dispose of, any property in his insolvent estate.<sup>251</sup>

The effect of the aforementioned prohibition is simple – should the insolvent enter into a contract which purports to dispose of property which has been deemed to form part of the insolvent estate, the contract will be voidable at the option of the trustee of the insolvent estate. This would mean that, should the insolvent's virtual assets not be recognised as "property" in South African law, the insolvent will be free to act in respect of his virtual assets in any way they wish, thereby depriving their creditors

---

<sup>247</sup> See the discussion at chapter 5.1 above where it is shown that developers of virtual worlds merely grant users a "limited license" to use and enjoy virtual property, whilst the developer maintains all rights to and interests in the virtual property found in the virtual world.

<sup>248</sup> Section 36(6) of the *Insolvency Act* 24 of 1936.

<sup>249</sup> *Spencer v Standard Building Society* 1931 TPD 481.

<sup>250</sup> Act 24 of 1936.

<sup>251</sup> Sharrock, Van Der Linde and Smith *Hockley's Insolvency Law* 63; *Insolvency Act* 24 of 1936.



of the potential value that these assets would have contributed to the insolvent estate.

Conversely, should the insolvent's ownership of his virtual-world assets be recognised by law, a restriction can be placed on the insolvent to prevent them from alienating same, allowing the trustee of the insolvent estate to liquidate the virtual goods for the eventual benefit of the creditors of the insolvent estate. This potential benefit, as discussed above,<sup>252</sup> could allow for previously unrecognised assets of great value to be included in the insolvent estate of a user of a virtual world, especially when considering the value of virtual goods belonging to individuals such as Ailin Graef<sup>253</sup> and Jon Jacobs.<sup>254</sup>

## **7 Recognising rights and interests in virtual property is possible within the current legal framework**

Despite the fact that the current South African legal framework can easily, and with little to no disruption of the current legal *status quo*, recognise rights and interests in virtual property, the current legal approach to the recognition and protection of these rights and interests in virtual property is lagging behind the times. It is, therefore, submitted that the non-recognition of rights and interests in property in virtual worlds has become socially and economically unviable, especially in light of the above discussions. This is mostly due to the demonstrated growing importance of virtual environments in the modern era, in conjunction with the belief of users of these virtual worlds that they have vested interests in their virtual property, which leads them to spend vast amounts of time and real-world resources to accumulate virtual assets. In addition, developers of virtual

---

<sup>252</sup> See chapter 4 above.

<sup>253</sup> See chapter 4 above; Parloff 2006 <http://fortune.com/2006/11/27/anshe-chung-first-virtual-millionaire/>; Boyes 2006 <https://www.gamespot.com/articles/second-life-realtor-makes-1-million/1100-6162315/>.

<sup>254</sup> See chapter 4 above; Saenz 2010 <https://singularityhub.com/2010/11/21/man-sells-virtual-real-estate-in-online-game-for-635000-wtf-video/#sm.00000cjh5kjxhdy211q9xay4j31rp>.

worlds create virtual assets with the main intention of having the "look and feel" of their comparable real-world counterparts.<sup>255</sup>

Regardless of this fact, the recognition of individuals' property interests in virtual property, according to Quadrini,<sup>256</sup> would be a legal positivist construct. This positivist approach makes it easier to develop a uniform approach to the concept of virtual property given that this view entails a larger collection of "entitlements created by law",<sup>257</sup> of which the utilitarianist approach and personality theory would best illustrate the need that exists for the recognition of virtual property interests.<sup>258</sup>

Furthermore, the mere fact that virtual property is incorporeal and intangible in nature does not preclude it from being considered property in the eyes of the law.<sup>259</sup> Even at common law level, property is defined as "everything which is the subject of ownership, corporeal or incorporeal, tangible or intangible, visible or invisible, real or personal".<sup>260</sup> What is of particular interest is the fact that the common law has, for a long time, recognised property interests in intangible goods, especially in the form of financial instruments like bank accounts, bonds and stocks.<sup>261</sup> What makes the comparison between property rights in virtual property and property rights in intangible property even more fitting is the fact that financial markets are themselves becoming increasingly digitised, slowly replacing the use of physical money with lines of computer code.<sup>262</sup>

The fact that the code that forms the basis of all virtual property is stored on servers often owned and managed by third party service providers

---

<sup>255</sup> Fairfield 2005 Boston University Law Review 1050.

<sup>256</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 68; Horowitz 2007 Harvard Journal of Law and Technology 454-457.

<sup>257</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 68; Horowitz 2007 Harvard Journal of Law and Technology 454-457.

<sup>258</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 68; Horowitz 2007 Harvard Journal of Law and Technology 454-457.

<sup>259</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 80.

<sup>260</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 80.

<sup>261</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 80.

<sup>262</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 80; Fairfield 2005 Boston University Law Review 1057.

should also not preclude the formation of a user's property interest in their virtual property. In illustration of this point, Quadrini<sup>263</sup> states that "[j]ust as the servers themselves can be owned by one party and placed in a building owned by another, different parties can own virtual property and the hard drive to which it is affixed".

At the very least, the recognition of proprietary interests in virtual property will serve to protect the traditional Western understanding of the law of property as it stands today. If the argument that virtual property should be distinguished from intellectual property is accepted, then, according to Quadrini,<sup>264</sup> a variety of ways exist to organise the laws that govern virtual property. However, given the fact that, as previously discussed, virtual property is designed to emulate real-world property,<sup>265</sup> making use of the traditional laws that apply to property will arguably best protect the parties' reasonable expectations.<sup>266</sup>

### ***7.1 Recognising users' rights and interests in virtual property will naturally reach further than the insolvency context alone***

Recognising users' rights and interests in virtual property in the context of insolvency can, it is submitted, provide a much-needed breakthrough for the recognition and protection of virtual property rights in other spheres of South African law as well.

Recognising a user's property rights and interests in virtual property will allow for the market for virtual goods to move from the shadows into the light, allowing for more stringent regulation of the trade in these goods, as well as the imposition of the one thing that all governments love: taxes. Regulation will provide protection for buyers and sellers in these transactions, mostly because the parties will be able to enter into sales

---

<sup>263</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 81.

<sup>264</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 81.

<sup>265</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 90; Lastowka and Hunter 2004 California Law Review 33.

<sup>266</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 90, Lastowka and Hunter 2004 California Law Review 33.

agreements without the fear of developers unilaterally terminating their subscriptions and causing them to lose the value of their virtual property within that virtual world. According to Quadrini, the parties will also benefit from “the certainty of a conventional dispute resolution process” that flows from the standard legal interests that that are enjoyed by all property owners.<sup>267</sup>

The main benefit that the legal recognition of property interests in virtual property is that it will grant the users of virtual worlds new, legally enshrined rights against developers and third parties. It will also allow for users to use their virtual property as security, as well as allowing users’ virtual property to form part of the users’ estates, the value of which to become available to the users’ creditors in instances of the users’ insolvency, or to pass to the users’ heirs in the event of their deaths.<sup>268</sup>

However, it is submitted that, as discussed in chapter 2 above, the property rights that are afforded to users of virtual worlds cannot be “homogeneous across the spectrum of virtual property”.<sup>269</sup> Certain factors such as the specific type of virtual property’s likeness to real-world property, as well as its secondary market value should be taken into consideration when determining the scope of the rights and interests that the law will recognise.

In Quadrini’s opinion,<sup>270</sup> a user’s expectation with regards to the recognition and protection of their rights and interests in their virtual property is based on the specific virtual item’s ability to mimic and replace its real-world equivalent. For example:

when a user purchases an e-book, he or she should receive a permanent property interest because users expect to continue to have access to the

---

<sup>267</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 93.

<sup>268</sup> For an in-depth discussion regarding the far-reaching nature of the recognition of rights and interests in virtual property, see Erlank W 2013 *Books, Apps, Movies and Music – Ownership of Virtual Property in the Digital Library* available at <https://doi-org.nwulib.nwu.ac.za/10.1515/eplj-2013-0014>.

<sup>269</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 93-94.

<sup>270</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 93-94.

information contained in an e-book once it is stored in their virtual library. It is reasonably foreseeable that users could build a library of rivalrous code that grows to contain gigabytes of information. By contrast, a user may only expect to maintain ownership of property in virtual worlds for as long as the game is in service. After all, a sword in World of Warcraft has no practical use or value outside of the virtual environment.<sup>271</sup>

In recognising users' rights and interests in virtual property, an obligation will be placed on developers and third-party service providers to respect the users' virtual property interests. This duty will stem from the property right that the user holds in respect of his/her virtual goods, as well as from the "accessory rights that are crucial to the virtual property's existence and that the user would have over the service provider's hard drives and certain other non-virtual property".<sup>272</sup> By setting out the obligations that developers and service providers have within the framework of traditional property law, developers, service providers, and users alike will be provided with "a clear and comprehensive regime to manage their competing property interests".<sup>273</sup>

## 8 Conclusion

Virtual property is "persistent computer code stored on a remote source system, where one or more persons are granted certain powers to control the computer code, to the exclusion of other people" and can be identified through its five *indicia*, namely: 1) rivalrousness; 2) persistence; 3) interconnectivity. 4) the existence of secondary markets; and 5) value added by users. Virtual property exists within virtual worlds and generates real-world value through the (sometimes unsanctioned) secondary market trade of virtual goods.

Currently, virtual property is regulated through a mixture of intellectual property law and contract, however, it has been shown that these methods of regulation are insufficient to fully protect the rights and interests of all possible parties involved in the accumulation and trade of virtual property.

---

<sup>271</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 93-94.

<sup>272</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 94.

<sup>273</sup> Quadrini 2015 Dalhousie Journal of Legal Studies 94.

It has been shown that it will be to the benefit of an insolvent user's estate if rights and interests in virtual property are recognised in South African law, especially given the fact that such recognition would assist in generating the maximum possible value in the insolvent estate, to the ultimate benefit of the creditors of the estate.

Both the solvent and insolvent estates of virtual world users worldwide are losing out on the millions of dollars that are locked up in virtual goods, mostly due to the fact that the users' rights and interests in their virtual property are not recognised and protected by law.

This dissertation has shown that it is an economic reality that virtual property will be created, traded, and – despite developers' attempts at prohibition and deterrence – bought and sold in secondary markets, just like real-world property.<sup>274</sup> The secondary market has become a reliable place for users of virtual worlds to trade their real-world money for virtual goods and vice versa, leading to a practice that could, if it remains unprotected by law, result in the loss of considerable amounts of capital in the event of the insolvency of individuals that have invested large sums of real-world currency in their virtual personas.

---

<sup>274</sup> Blazer 2006 *Pierce Law Review* 147.

## BIBLIOGRAPHY

### *Literature*

Abramovitch and Cummings 2007 *Canadian Journal of Law and Technology*

Abramovitch SH and Cummings DL "Virtual Property, Real Law: The Regulation of Property in Video Games" 2007 *Canadian Journal of Law and Technology* 73-81

Bartelsmann *et al.* *The Law of Insolvency in South Africa*

Bartelsmann *et al.* *The Law of Insolvency in South Africa* 9<sup>th</sup> ed (Juta Cape Town 2008)

Blazer 2006 *Pierce Law Review*

Blazer C "The Five Indicia of Virtual Property" 2006 *Pierce Law Review* 137-161

Bonar-Bridges 2016 *Wisconsin Law Review Forward*

Bonar-Bridges J "Regulating Virtual Property with EULAs" 2016 *Wisconsin Law Review Forward* 79-91

Erlank 2013 *De Jure*

Erlank W "Acquisition of ownership inside virtual worlds" 2013 *De Jure* 770-782

Erlank 2015 *PER/PELJ*

Erlank W "Introduction to Virtual Property: *Lex Virtualis Ipsa Loquitur*" 2015 *PER/PELJ* 2525-2559

Erlank *Property in Virtual Worlds*

Erlank W *Property in Virtual Worlds* (LLD-dissertation Stellenbosch University 2012)

Fairfield 2005 *Boston University Law Review*

Fairfield JAT "Virtual Property" 2005 *Boston University Law Review* 1047-1102

Horowitz 2007 *Harvard Journal of Law and Technology*

Horowitz SJ "Competing Lockean Claims to Virtual Property" 2007  
*Harvard Journal of Law and Technology* 443-458

Lametti 2011 *University of Toronto Law Journal*

Lametti D 2011 "The Concept of Property: Relations through  
Objects of Social Wealth" *University of Toronto Law Journal* 325-  
378

Lastowka and Hunter 2004 *California Law Review*

Lastowka FG and Hunter D "The Laws of the Virtual Worlds" 2004  
*California Law Review* 1-74

Mayer-Schonberger and Crowley 2006 *Northwestern University Law  
Review*

Mayer-Schonberger V and Crowley J "Napster's Second Life?: The  
Regulatory Challenges of Virtual Worlds" 2006 *Northwestern  
University Law Review* 1775-1826

Quadrini 2015 *Dalhousie Journal of Legal Studies*

Quadrini M 2015 "Caveat Cloudster: Why Traditional Common and  
Civil Property Law Should Apply to Virtual Property and How it Will  
Change the Legal Realities of the Internet" *Dalhousie Journal of  
Legal Studies* 55-99

Sharrock, Van Der Linde and Smith *Hockley's Insolvency Law*

Sharrock R, Van Der Linde K and Smith A *Hockley's Insolvency  
Law* 9<sup>th</sup> ed (Juta Cape Town 2012)

Slaughter 2008 *Yale Law School Legal Scholarship Repository*

Slaughter JB "Virtual Worlds: Between Contract and Property" 2008  
*Yale Law School Legal Scholarship Repository* 1-75

Weber 1993 *Computer/Law Journal*



Weber GS "The New Medium of Expression: Introducing Virtual Reality and Anticipating Copyright Issues" 1993 *Computer/Law Journal* 175-194

### **Case law**

*Bank of Lisbon and South Africa Ltd v The Master* 1987 (1) SA 276 (A)

*Bekker NO v Kotze and others* 1996 (4) SA 1293

*Corporate Liquidators (Pty) Ltd v Wiggill* (2006) 4 All SA 439 (T)

*Ex parte Fowler* 1937 TPD 353

*Ex parte Harmse* 2005 (1) SA 323 (N) 325

*Ex parte Pillay; Mayet v Pillay* 1955 (2) SA 309 (N) 311

*Ex parte Van Rensburg* 1946 OPD 64 70

*Investec Bank Limited and Another v Mutemeri and Another* 2010 (1) SA 265 (GSJ)

*Spencer v Standard Building Society* 1931 TPD 481 484

*Van Zyl NNO v Turner NNO* 1998 (2) SA 236 (C)

*Venter v Volkskas Ltd* 1973 (3) SA 175 (T) 179

### **Legislation**

*Compensation for Occupational Injuries and Diseases Act* 130 of 1993

*Friendly Societies Act* 25 of 1956

*General Pensions Act* 29 of 1979

*Insolvency Act* 24 of 1936

*Land Reform (Labour Tenants) Act* 3 of 1996

*Matrimonial Property Act* 88 of 1984

*Occupational Diseases in Mines and Works Act* 78 of 1973

*Unemployment Insurance Act 63 of 2001*

**Internet sources**

Blizzard Entertainment 2014

<https://us.battle.net/forums/en/wow/topic/11423692859>

Blizzard Entertainment 2014 *World of Warcraft: Azeroth by the Numbers* <https://us.battle.net/forums/en/wow/topic/11423692859> accessed 14 May 2017

Blizzard Entertainment 2017 <https://worldofwarcraft.com/en-us/game/classes>

Blizzard Entertainment 2017 *Classes* <https://worldofwarcraft.com/en-us/game/races> accessed 29 September 2017

Blizzard Entertainment 2017 <https://worldofwarcraft.com/en-us/game/races>

Blizzard Entertainment 2017 *Races* <https://worldofwarcraft.com/en-us/game/races> accessed 29 September 2017

Blizzard Entertainment 2017 [http://eu.blizzard.com/en-gb/company/legal/wow\\_tou.html](http://eu.blizzard.com/en-gb/company/legal/wow_tou.html)

Blizzard Entertainment 2017 *World of Warcraft Terms of Use* [http://eu.blizzard.com/en-gb/company/legal/wow\\_tou.html](http://eu.blizzard.com/en-gb/company/legal/wow_tou.html) accessed 27 June 2016

Bloomberg 2017

<http://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=8623083>

Bloomberg 2017 *Company Overview of Internet Gaming Entertainment, Ltd.* <http://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=8623083> accessed 12 March 2017

Boss

2007

<http://www.nytimes.com/2007/09/09/business/yourmoney/09second.html>

Boss S 2007 *Even in a Virtual World, 'Stuff' Matters*

<http://www.nytimes.com/2007/09/09/business/yourmoney/09second.html> accessed 8 October 2017

Boyes 2006 <https://www.gamespot.com/articles/second-life-realtor-makes-1-million/1100-6162315/>

Boyes E 2006 *Second Life realtor makes \$1 million*

<https://www.gamespot.com/articles/second-life-realtor-makes-1-million/1100-162315/> accessed 29 November 2017

Castronova 2001 <https://ssrn.com/abstract=294828>

Castronova E 2001 *Virtual Worlds: A First-Hand Account of Market and Society on the Cyberian Frontier*

<https://ssrn.com/abstract=294828> accessed 20 September 2017

Chayka 2013 <http://www.psmag.com/business-economics/the-real-value-of-virtual-economies-eve-world-of-warcraft-64593>

Chayka K 2013 *The Very Real Value of Gaming's Virtual Economies* <http://www.psmag.com/business-economics/the-real-value-of-virtual-economies-eve-world-of-warcraft-64593>

accessed 4 August 2017

Deenihan 2008 <http://ssrn.com/abstract=1113402>

Deenihan P 2008 *Leave Those Orcs Alone: Property Rights in Virtual Worlds* <http://ssrn.com/abstract=1113402>

accessed 18 November 2016

Electronic Arts 2015 <https://uo.com/what-is-uo/>

Electronic Arts 2015 *What is UO?* <https://uo.com/what-is-uo/>

Harbinja 2014 <http://ssrn.com/abstract=2540476>

Harbinja E 2014 *Virtual Worlds – A Legal Post-Mortem Account*

<http://ssrn.com/abstract=2540476> accessed 29 November 2017

IHS 2014 <http://news.ihsmarket.com/press-release/design-supply-chain/cloud-related-spending-businesses-triple-2011-2017>

IHS 2014 *Cloud-Related Spending by Businesses to Triple from 2011 to 2017* <http://news.ihsmarket.com/press-release/design-supply-chain/cloud-related-spending-businesses-triple-2011-2017>  
accessed 18 March 2017

Kadochnikov 2013 <http://www.hypergridbusiness.com/2013/04/could-linden-dollars-become-real-money/>

Kadochnikov A 2013 *Could Linden Dollars become real money?*  
<http://www.hypergridbusiness.com/2013/04/could-linden-dollars-become-real-money/> accessed 27 October 2017

Lettice 2004 [http://www.theregister.co.uk/2004/12/17/tycoon\\_buys\\_non\\_existent\\_island/](http://www.theregister.co.uk/2004/12/17/tycoon_buys_non_existent_island/)

Lettice R 2004 *Property tycoon buys fantasy island*  
[http://www.theregister.co.uk/2004/12/17/tycoon\\_buys\\_non\\_existent\\_island/](http://www.theregister.co.uk/2004/12/17/tycoon_buys_non_existent_island/) accessed 24 June 2016

Linden Research, Inc. 2017 <https://www.lindenlab.com/legal/second-life-terms-and-conditions#>

Linden Research, Inc. 2017 *Second Life Terms and Conditions*  
<https://www.lindenlab.com/legal/second-life-terms-and-conditions#>  
accessed 24 September 2016

Market Wired Press Release 2005 <http://www.marketwired.com/press-release/virtual-island-purchase-26500-recoups-investment-first-year-with-room-ongoing-profit-736156.htm>

Market Wired Press Release 2005 *Virtual Island Purchase of \$26,500 Recoups Investment in First Year with Room for Ongoing Profit* <http://www.marketwired.com/press-release/virtual-island-purchase-26500-recoups-investment-first-year-with-room-ongoing-profit-736156.htm> accessed 14 April 2016

Naone 2007 <https://www.technologyreview.com/s/408373/money-trouble-in-second-life/>

Naone E 2007 *Money Trouble in Second Life*  
<https://www.technologyreview.com/s/408373/money-trouble-in-second-life/> accessed 11 October 2017

Oxford University Press 2017  
<https://en.oxforddictionaries.com/definition/data>

Oxford University Press 2017 *Data*  
<https://en.oxforddictionaries.com/definition/data> accessed 29 October 2017

Parloff 2006 <http://fortune.com/2006/11/27/anshe-chung-first-virtual-millionaire/>

Parloff R 2006 *Ansche Chung: First Virtual Millionaire*  
<http://fortune.com/2006/11/27/anshe-chung-first-virtual-millionaire/>  
accessed 19 November 2017

Peckham 2012 <http://techland.time.com/2012/06/26/redigi-lets-you-resell-used-digital-music-but-is-it-legal>

Peckham M 2012 *ReDigi Lets You Resell Used Digital Music, But Is It Legal?* <http://techland.time.com/2012/06/26/redigi-lets-you-resell-used-digital-music-but-is-it-legal> accessed 18 March 2017

Pollitzer 2007 <https://ssrn.com/abstract=1090048>

Pollitzer BK 2007 *Serious Business: When Virtual Items Gain Real World Value* <https://ssrn.com/abstract=1090048> accessed 14 March 2017

Terdiman 2007 <https://www.cnet.com/uk/news/book-excerpt-the-entrepreneurs-guide-to-second-life/>

Terdiman D 2007 *Book excerpt: 'The Entrepreneur's Guide to Second Life'* <https://www.cnet.com/uk/news/book-excerpt-the-entrepreneurs-guide-to-second-life/> accessed 14 September 2017

Saenz 2010 <https://singularityhub.com/2010/11/21/man-sells-virtual-real-estate-in-online-game-for-635000-wtf-video/#sm.00000cjh5kjsxhdy211q9xay4j31rp>

Saenz A 2010 *Man Sells Virtual Real Estate in Online Game for \$635,00* <https://singularityhub.com/2010/11/21/man-sells-virtual-real-estate-in-online-game-for-635000-wtf-video/#sm.00000cjh5kjsxhdy211q9xay4j31rp> accessed 29 November 2017

Vincent 2011 [https://www.theguardian.com/world/2011/may/25/china-prisoners-internet-gaming-scam?CMP=share\\_btn\\_tw](https://www.theguardian.com/world/2011/may/25/china-prisoners-internet-gaming-scam?CMP=share_btn_tw)

Vincent D 2011 *China used prisoners in lucrative internet gaming work* [https://www.theguardian.com/world/2011/may/25/china-prisoners-internet-gaming-scam?CMP=share\\_btn\\_tw](https://www.theguardian.com/world/2011/may/25/china-prisoners-internet-gaming-scam?CMP=share_btn_tw) accessed 25 September 2017

Yee 2006 <http://www.nickyee.com>

Yee N 2006 *The Demographics, Motivations and Derived Experiences of Users of Massively-Multi-user Online Graphical Environments* <http://www.nickyee.com/pubs/Yee%20%20MMORPG%20Demographics%202006.pdf> accessed 17 August 2017

## LIST OF ABBREVIATIONS

MUD	Multi-User Dimensions
MMORPG	Massively Multiplayer Online Role-Playing Game
EULA	End User License Agreement
ToS	Terms of Service