

Real-Money Trade of Virtual Assets: Ten Different User Perceptions

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ABSTRACT

In massively multiplayer online games and similar virtual worlds, virtual assets such as accounts, currencies and items are increasingly being traded for real money. The phenomenon is controversial: while some players support it, many feel strongly against it. In this paper I describe different ways in which players perceive real-money trade and explain why a player might hold a particular view by referring to related research on player motivations. The results should help designers choose their strategy towards virtual asset trade and understand how their audience is likely to react to it.

Keywords

MMORPG, virtual world, secondary markets, real-money trade of virtual assets, player perceptions, user experience

1. INTRODUCTION

Virtual worlds are interactive models to some extent resembling the real world. They physically exist in the databases of dedicated server computers maintained by companies acting as virtual world operators. Users access them through the Internet using specialised client programs that are capable of presenting the worlds visually and aurally. The most popular virtual worlds exist for the purpose of providing a setting for a massively multiplayer online role-playing game ('MMORPG'). Others exist simply as a platform for social interaction. Users typically participate in a virtual world by controlling an avatar, a character that represents them in the virtual context. A key feature of virtual worlds is that they are persistent: they continue to evolve even as the user logs off [3].

Ultima Online, launched in 1997, was the first highly successful MMORPG. In its heyday it had approximately 250,000 players who paid Electronic Arts a monthly subscription fee to access the world [24]. The game was designed to have a realistic economy, containing virtual assets such as clothes, money and realty. Players could trade with other players to exchange their virtual assets for other virtual assets, like castles for gold. It was meant to be like Monopoly: no real money would change hands. But in 1999, some Ultima Online players began putting their virtual assets on auction at the popular Internet auction site eBay. The word spread and they received bids from other players. When an auction was completed, the payment was carried out using ordinary means such as cheque or electronic money transfer. The two players then met up in the game world and the seller handed the auctioned object to the buyer.

The resulting real-money trade ('RMT') of virtual assets is controversial. Many players feel strongly against it, and several virtual world operators have taken measures to curb it. Yet despite the criticism and various legal threats, RMT prospers. According

to Steve Salyer, CEO of virtual asset trading company IGE, the total volume of the trade was approximately 880 million USD last year [23]. Clearly there are some players who experience RMT in a positive way and wish to keep on doing it. To cater for this audience, designers and business planners are starting to think about new strategies towards RMT. Yet at the same time, they run the risk of angering another part of their audience. Navigating these conflicting preferences is challenging. A clear understanding of how RMT affects user experience is missing.

The research problem of this paper is therefore this: how do players perceive the real-money trade of virtual assets? My objective is to describe different perceptions and explain why a player might hold a particular perception, be it negative or positive. My method comprises a review of previous work on the topic and a set of case studies. This approach is motivated by the exploratory nature of the work. A follow-up study could seek to verify the results with a user survey.

In part two I review various views on RMT as described in existing literature. In part three I choose a framework for categorising players or play. In part four I present a synthesis of the previous parts, which places the identified views within the chosen categorisation to produce a model of player perceptions on RMT. Part five contains the case studies, the purpose of which is to validate the synthesis, discover new views, and to illuminate how the perceptions affect design and business choices, and vice versa. The cases cover Sony Online Entertainment's EverQuest, Electronic Arts' Ultima Online, Sulake's Habbo Hotel and MindArk's Project Entropia. In part six I present an improved model containing ten different player perceptions. In the final part I briefly discuss the model's validity, its relationship with previous research, and possibilities for further study.

2. LITERATURE REVIEW

There is a growing body of research on MMORPGs and other persistent avatar-mediated massively multi-user digital spaces, known collectively as virtual worlds. A research stream initiated by Edward Castronova examines the subject through economic theory [7][8]. Some studies examine virtual economies in their own right, while others focus on the interaction between real and virtual economies. A number of scholars (e.g. [13]) apply legal theory and philosophy to address various unsolved issues raised by virtual asset trade, particularly the legal status and ownership of virtual assets. In some papers, scholars express their own views on RMT or report on players' views on the matter.

Bartle [2: 13-16], Castronova [9: 192-196] and many others are keen to preserve the "magic circle" in virtual worlds. Magic circle is a concept in game studies that refers to the artificial context created by the rules of the game, a "frame" that separates the game from the real world [16: 94]. Like suspension of disbelief in

film, the magic circle is considered by some as vital for enjoying a game. In virtual worlds, there are rules that regulate how players accumulate virtual assets. If players are able to obtain assets outside of these rules by purchasing them for real money, the argument can be made that the magic circle is broken. Real-life economic structures and hierarchies may “seep” into the virtual world, making it impossible for players to enjoy a truly parallel life online.

It is also often reported how players consider virtual asset purchases as being cheating [2: 7][4: 31][22: 231]. Those who buy powerful assets for real money are seen as gaining a competitive advantage which they have not truly earned. They are therefore viewed with apprehension and disdain. It is common for opponents of buying practices to make analogies to sports and board games: e.g., nobody likes those who cheat in sports, and nobody would play Monopoly if you could buy Boardwalk with real money [2: 4].

Real-money buyers are also seen as violating the “achievement hierarchy” of a MMORPG [2: 16][4: 31]. An important aspect of MMORPGs is character development: the skills and abilities of one’s avatar improve with play. Those who have developed their avatars into powerful, skilled, “high-level” characters pride themselves with the achievement and enjoy the recognition of others. The ability of players to obtain high-level avatars by spending money instead of playing is said to disrupt this achievement hierarchy, making the hierarchy less meaningful and any advancement on it presumably less rewarding. “Allowing players to buy high-level characters from one another is like allowing athletes to buy world records from one another,” opines Bartle [2: 16].

On the other hand, Bartle discusses three reasons why many MMORPG players do feel compelled to make virtual asset purchases. They are all related to the character development aspect of MMORPGs. Firstly, experiencing all the content programmed into a world requires players to develop their characters to the highest level. This takes lots of time, which not everyone has. Buying a high-level avatar is a convenient shortcut that gives immediate access to more content [2: 7-8]. Secondly, some parts of the content may be so unappealing that even players with enough time would rather skip them [2: 15].¹ Virtual asset purchases are a way to “pick and choose” which content to experience. Thirdly, MMORPGs are usually designed in such a way that players who wish to play together in the same group have to have avatars of approximately the same level of prowess [2: 17]. As a rough generalisation, it is said that older players with jobs to go to have more money than time to spend on a game, while younger players with no jobs have more time than money. If older players wish to spend time playing with younger ones (e.g. family members), then they must make purchases to keep up with the younger’s pace.

Whether or not players should be allowed to sell their assets also divides opinions. In a survey conducted among Korean players, as many as 78% of the respondents felt that they had the right to own the items earned during play [14]. Players often justify this claim in terms similar to Lockean labour theory of ownership: “we have invested considerable labour (i.e. playing time) into obtaining our assets; therefore we are entitled to exercise ownership over

them.”² Echoing this Lockean theory of virtual property, many of those who sell virtual assets on eBay and other marketplaces claim that what is actually being sold is not the virtual asset itself, but the time it took to acquire the asset [22: 232]. MacInnes [15: 2727] also notes that real-money virtual asset trade, both buying and selling, is a form of entertainment in itself for some players.

3. TYPOLOGIES OF PLAY

When one looks at the typical arguments presented in support and in opposition of real-money virtual asset trade, it seems clear that they are sometimes not arguing about the same thing. Some people seem to consider their virtual world a game in which opponents can be beaten, just like in Monopoly. For some it should be an immersive experience, perhaps similar to a good movie or a novel. For some, it is about self-expression. The perceived impact of real-money virtual asset trade varies according to how and why the person uses the world.

Determining the motivations of virtual world users is far from straightforward. In game studies, there are several typologies describing the kinds of pleasure or, more generally, benefit, that players seek and obtain through playing. Perhaps the most classic one comes from anthropologist Roger Caillois [6]. He identifies four “fundamental categories” of play:

1. *Agôn*: competition and competitive struggle
2. *Alea*: submission to the fortunes of chance
3. *Mimicry*: role-playing and make-believe play
4. *Ilinx*: vertigo and physical sensation
[16: 335]

Caillois’ categorisation is theoretically ambitious, but perhaps not directly applicable to the present problem. Only the first three categories are relevant for most computer games, and most modern titles probably touch on all of them. Game designer Marc LeBlanc has presented a less theoretical but more detailed typology that seems more applicable. It has eight categories, which in his view describe the kinds of pleasures players derive from games:

1. *Sensation*: game as sense-pleasure
2. *Fantasy*: game as make-believe
3. *Narrative*: game as drama
4. *Challenge*: game as obstacle course
5. *Fellowship*: game as social framework
6. *Discovery*: game as uncharted territory
7. *Expression*: game as self-discovery
8. *Submission*: game as masochism
[16: 334]

Yet it is important to note that virtual worlds are not “just games”, or in some cases, not games at all. A typology developed with traditional computer and video games in mind illustrates many of the motivations of virtual world users, but is not necessarily sufficient to explain them all. Since virtual worlds are a relatively new phenomenon, there is a dearth of research concerning the pleasures and benefits derived by players from them. Indeed, in *On Virtual Economies*, Castronova modeled the emotional satisfaction derived by a player from a virtual world as a function of challenge and reward [8: 17-18]. This corresponds to only one category in LeBlanc’s typology. I would rather think that virtual

¹ For a description of some boring mid-level content, see [5].

² See [13: 61-64] for an analysis of this “Lockean theory of virtual property”.

worlds deliver a wider gamut of satisfaction than computer games, not a narrower one.

There is one typology that is commonly being used to describe and categorise virtual world users. It was presented by Bartle and is usually referred to as Bartle's player types [1]. It comprises the following categories:

1. *Achievers*: like to reach defined objectives and achieve a high formal status
2. *Explorers*: revel in discovering new things about the world and its logic
3. *Socialisers*: enjoy interacting with other players
4. *Killers*: derive pleasure from demonstrating superiority over others

As the first text on the matter, Bartle's player types have been a useful anchoring point for scholars and designers, but recent research suggests that it might be time to move on. Nick Yee [26] points out some theoretical problems with the typology: the proposed types may contain components that are actually not interrelated, the types may significantly overlap with each other, and the construct provides no means to assess players as to what type they are. In other words, the typology may hide actual player types while creating artificial ones. Yee's critique seems pertinent, as Bartle's types have never been verified with rigorous empirical analysis.

Yee presents an alternative typology, a model of MMORPG player motivations [26]. The model has three main components, labeled *achievement*, *social* and *immersion*. Each main component consists of a number of subcomponents, shown in Table 1. The subcomponents were identified through an iterative process involving open-ended player survey questions, and then verified and grouped using factor analysis on responses to a multiple-choice survey. Yee's player motivations differ from Bartle's player types in that they are not mutually exclusive: a player may have multiple motivations for playing a MMORPG, none of which are in diametrical opposition to each other. Similar to LeBlanc's pleasure types, Yee's motivations provide a relatively fine-grained typology for categorising player needs.

Table 1. Yee's player motivations model

Achievement	Social	Immersion
Advancement progress, power, accumulation, status	Socialising casual chat, helping others, making friends	Discovery exploration, lore, finding hidden things
Mechanics numbers, optimisation, templating, analysis	Relationship personal, self-disclosure, find and give support	Role-Playing storyline, character history, roles, fantasy
Competition challenging others, provocation, domination	Teamwork collaboration, groups, group achievements	Customisation appearances, accessories style, colour schemes
		Escapism relax, escape from RL, avoid RL problems

With regard to the present problem, all the typologies have their shortcomings. Bartle's player types were originally designed for MUDs, a subset of virtual worlds. The typology is also theoretically suspect. Yee's research focuses exclusively on MMORPG players, another subset of virtual worlds. Yee's

motivations model is also somewhat a work in progress, as it has not been subjected to peer review yet. Nevertheless, I consider the motivations model to afford the best typology for the purposes of this study. It is sufficiently inclusive and fine-grained, and thanks to its empirical backing, seems most likely to reflect actual player behaviour.

4. SYNTHESIS: FIVE USER PERCEPTIONS ON REAL-MONEY TRADE

Let us consider again the different views concerning RMT brought forward in part two, this time from the point of view of player motivations. Yee's main motivation components are achievement, social and immersion. It seems that if a player is motivated solely by achievement, only a subset of the concerns identified in part two are relevant to her. The same applies to social and immersion motivations. In other words, how users perceive and experience virtual asset trade can be mapped onto their motivations. I have attempted to step in the shoes of such hypothetical players and spelled out the mappings accordingly. This can by no means be a completely objective method and the exact choices could be subjected to much debate, but the broader pattern can surely attract a reasonable consensus. The results are displayed in Table 2.

Table 2. Five different user perceptions on RMT

Achievement	Social	Immersion
Advancement RMT enables rewards to be bought, violating the achievement hierarchy	Socialising	Discovery RMT breaks the magic circle, but gives more choice over which content to experience
Mechanics	Relationship RMT allows those with less time to catch up and play together with their friends	Role-Playing
Competition RMT is cheating because it can be used to obtain competitive advantages	Teamwork	Customisation
		Escapism RMT breaks the magic circle, introducing real-life worries into the virtual world

Assessing how much weight each individual point should carry is difficult, but at its face value the model suggests that the desirability or acceptability of real-money trade depends on what customer needs an operator seeks to fulfil. Operators that seek to cater to achievement- or immersion-oriented players should generally take a more negative stance towards secondary markets than those who cater to socially oriented players.

Not included in the model are two views that were difficult to link to any particular motivation. Real-money as a form of entertainment is a type of meta-gaming that perhaps arises from achievement and social motivations, while the Lockean theory of virtual asset ownership is a perception probably held by players of various motivational backgrounds.

There are gaps in the model in places where the literature reviewed in part two was unable to suggest what kind of a perception might be linked with the motivation in question. In the next part I move on to apply the model in four short case studies, verifying the existing mappings as well as seeking to fill in the gaps with new insights from observations.

5. CASE STUDIES

5.1 Sony Online Entertainment: EverQuest

Sony Online Entertainment Inc. ('SOE'), an online gaming subsidiary of Sony Pictures Digital Inc., is one of the biggest players in the global virtual world market. SOE's first MMORPG title EverQuest was launched in 1999, and for a long time it was the most popular virtual world in the Western market. EverQuest continues to be played by almost half a million active subscribers [24]. A vibrant secondary market emerged around EverQuest almost from the beginning. Hundreds of items, accounts and currency packages were listed on eBay, sometimes fetching four-figure sums for their sellers. Edward Castronova's famous article *Virtual Worlds: A First-Hand Account of Market and Society on the Cyberian Frontier* [7] brought the phenomenon to the attention of academics and popular media alike.

The average EverQuest players are in their mid-twenties, somewhat older than other online game players [7: 24][25]. Their gender distribution is rather typical: the vast majority of players are male. EverQuest players are extremely dedicated to the game: Castronova [7: 25] found that a third of all respondents spent more time playing EverQuest than working. This is despite that one in five were married or cohabiting and 15 % had children to care for. Most respondents also agreed that they would like to spend more time in the game than they currently do [7: 22]. No wonder even SOE executives have referred to the game as EverCrack [10].

Since EverQuest is strongly focused on the leveling system, it supports achievement-oriented play very well. One should therefore think that most EverQuest players would tend to be primarily motivated by achievement and advancement. However, in Yee's survey respondents were asked to rate how appealing they found certain aspects of EverQuest, and the three most appealing aspects were "exploring a fantasy world", "social interactions" and "achieving goals" [25]. These three responses are similar to the main components in Yee's motivations model [26]: immersion, social and achievement. It would appear that EverQuest caters to a wide range of player motivations.

In Yee's survey about half of the respondents said they have tried playing EverQuest on a player-versus-player ('PvP') server at least once [25]. On PvP servers, players are able to attack each other instead of just fighting computer opponents. This results in a much more competitive, live-and-let-die kind of atmosphere. Yee found that players who enjoy playing on PvP servers are significantly younger than those who find PvP servers to be very unenjoyable. Interestingly, Yee's also found that those who have never bought items from eBay are significantly younger than those who have. These findings are consistent with the suggestion that older players have more money than time and are thus inclined to buy their way ahead to keep up with the younger ones. They are also consistent with my model's suggestion that competitively oriented players tend to hold a negative perception of RMT.

SOE has tried different strategies towards RMT. When a secondary market for EverQuest virtual assets emerged in eBay around 1999, some players complained to SOE that buying virtual assets for real money was "cheating". SOE responded that it will "create a level playing field" by taking steps to eliminate the market [10]. In other words, they said that they will follow a strategy that caters to competition and advancement-oriented players. Yet in April 2005, SOE took the whole virtual world community by surprise by announcing a new service called Station Exchange [18]. It is in effect a virtual asset auction site, similar to eBay and PlayerAuctions.com, except that it is being run by SOE. Station Exchange enables trade on specific servers only, so that there are separate worlds for those who prefer to have RMT and those who prefer not to. This way, SOE believes that it is "answering the demands of a sizeable proportion of [its] subscriber base" [18]. In other words, SOE sees that there are multiple customer segments that each perceive and experience RMT differently, and attempts to create separate offerings for each of them.

5.2 Electronic Arts: Ultima Online

Ultima Online was the first hugely popular MMORPG. Even gamers who have never played it have usually heard about it, thanks to the long history of the Ultima series of role-playing games. It was developed by Origin Systems, Inc. and is published and operated by Electronic Arts Inc. ('EA'). The service was launched in 1997 and still has approximately 150 000 active subscribers [24].

EA noted the emergence of a secondary market in a 1999 press release: "In recent weeks, people have been flocking to one of the Internet's best-known auction sites, eBay, to bid on Ultima Online (UO) accounts, being sold by UO players. Several of the accounts have traded at more than \$2,000 and two accounts have sold for \$3,000 each." [11] The player community reacted to the secondary market with mixed feelings. Discussion forums, such as the semi-official Ultima Online forum at Stratics.com,³ are full of the arguments presented in part two of this paper: that the game is like sports and buying is cheating; that buying breaks the achievement hierarchy; and that buying disrupts the atmosphere of the world. On the other hand, some say they do not care as they cannot tell whether an avatar is "legit" or bought anyway. One poster said he was happy there was a secondary market, because he was quitting Ultima Online and wanted to liquidate his assets. Some fans at Stratics.com compared Ultima Online to other MMORPGs and thought that Ultima's gameplay is more resistant to the negative effects of real-money trade: it has skills instead of levels and there are plenty of other activities available besides combat.

In September 2002, EA introduced an "Advanced Character Service" where players could improve their avatars' abilities to a certain extent in exchange for a fee. This is an example of RMT where the seller is the game's operator. It caused an outrage in the player community. Forums were filled with complaints, petitions signed, and virtual demonstrations held. The vocal opponents thought that the service was "lessening the sense of achievement" and that it will "unbalance the game" [19]. On the other hand, a proponent said that "Some have limited play time and may wish

³ There is no official Ultima Online discussion forum, so developers use the Stratics.com forum to communicate with the player community.

to spend the time *playing* the game rather than building skills so they can eventually be able to play” [19]. It seems that the participants held very different perceptions of what constitutes play in Ultima Online, and thus attached different meanings to RMT. These observations lend support to my model.

In any case, it was quickly pointed out that the Advanced Character Service actually sells rather mediocre avatars, and as such would not affect the game much, certainly not as much as eBay was already doing. The turmoil died down quickly, though many players say they quit Ultima Online as a result of it [19]. I suspect that the Advanced Character Service is a feature for a MMORPG that is approaching the end of its life cycle. At this stage, any new Ultima Online subscriptions are likely to be returning customers. Most existing customers have achieved much of what there is to achieve, and the motivational focus has shifted from advancement to spending time with old friends. Returning customers have already gone through the skill development treadmill at least once, and might not be looking forward to doing so again.

5.3 Sulake: Habbo Hotel

Sulake was founded in 2000 by two young Finnish digital media professionals. The company’s flagship service is Habbo Hotel: an open-ended virtual world aimed at teenagers. Localised versions of Habbo Hotel are currently running in 16 countries, and they attract a total of four million unique users per month [21]. Access to Habbo Hotel is free of charge, as Sulake’s revenue model is based on selling virtual assets, mainly pixellated furniture. Sulake maintains a monopoly over RMT in Habbo Hotel, attempting to enforce a ban on secondary markets.

Sulake’s customers are teenagers: according to Johnson and Toiskallio [12], 95 % of Finnish Habbo Hotel users are between 10 and 19 years old. They estimate that around 25 % of Finnish teenagers visit Habbo Hotel at least once a month. Unlike in many other virtual worlds, the gender distribution among Habbo Hotel users is nearly equal.

Habbo Hotel was created to function as a rich social platform instead of a game with pre-determined goals. Therefore it would be easy to think that Habbo Hotel would mostly be conducive to satisfying the needs of social-oriented users. However, in actual fact the service seems to be catering to a wide range of customer needs. Johnson and Toiskallio identify the following user groups among Habbo Hotel users: 1) *furniture traders and collectors*, 2) *chatters*, 3) *gang-members*, 4) *Hobba-supervisors*, 5) *cheaters*, 6) *quiz-makers and players*, 7) *the hotel manager*, and 8) *celebrities* [12].

Quiz-makers and players should perhaps be divided up into two distinct groups following Salovaara et al. [17]: *playmakers* who make the games and organise the activities, and *players* who mostly just participate in them. Furniture traders and collectors could perhaps also be divided up into two sub-groups: those who try to collect as many rare and valuable pieces of furniture as possible, having a room that resembles a stockpile, and those who are focused on decorating their room nicely. Taking these changes into account, and leaving out the supervisors and hotel managers who are indeed users in a sense but not customers, we arrive at the following categorisation:

1. *Players*: take part in game-like activities
2. *Playmakers*: organise and take part in game-like activities

3. *Decorators*: spend their time designing and decorating rooms
4. *Collectors*: collect valuable furniture, using rooms for storage and display
5. *Socialisers*: engage in chatting, celebrity games and other social activities
6. *Cheaters*: attempt to break rules and technical restrictions

Since we assume that Yee’s model [26] discussed in part three provides a more or less complete set of possible virtual world user motivations, we can attempt to fashion these categories as a subset of that model. *Socialisers* maps neatly to the social main component of Yee’s model, or at least its first two subcomponents. *Collectors* are after advancement of a sort, obtained through accumulation. *Decorators* are interested in customisation: picking items that fit specific styles and colour schemes. *Players* are perhaps interested in competition. They may also be motivated by advancement: some player groups award ranks and levels to their members based on the members’ achievements in community-created game-like activities. It is interesting to find that in a virtual world with no built-in ranking system, highly advancement-oriented players will go and make up one for themselves.

Playmakers are no doubt social-oriented, and perhaps enjoy a degree of role-playing as well. *Cheaters* include ill-behaving rule-breakers as well as the segment of users who attempt to produce arcane effects such as blue skinned avatars by hacking the protocol between the client and the server. There apparently used to be a whole ‘scene’ or subculture devoted to this in Habbo Hotel until the protocol was made more robust. In the terms of Yee’s model, hackers are perhaps motivated by mechanics, discovery or even advanced customisation abilities. Users with playmaking and hacking motivations may of course simultaneously have other motivations for participating in Habbo Hotel.

Sulake’s monopoly-based RMT strategy seems to be in relative harmony with the motivations identified among Habbo Hotel’s users. For customisation-oriented players, the ability to purchase virtual assets for real money is as convenient as a DIY store. For social-oriented players, buying behaviour can be used as an expressive device in the same way that brand consumerism is used in the real world. Indeed, virtual trends and fads can be observed among the Habbo folk. In Habbo Hotel, the ease of buying also seems to be conducive to role-playing activities: role-playing requires props, and the easier they are to obtain the easier it is to devise intricate role-playing scenarios and environments. Johnson and Toiskallio have observed re-enactments of popular TV shows, beauty contests, dating games, talk shows with Habbo celebrities, VIP lounges and a virtual orphanage, all involving suitable arrangements of virtual furniture purchased from Sulake [12]. Habbo Hotel users with customisation, social and role-playing motivations thus tend to perceive RMT in a positive light.

According to my model, achievement-oriented players tend to perceive RMT negatively. While Habbo Hotel does not have built-in achievement systems such as character development, it does have user-created competitive activities such as quizzes and races. Success in such activities is usually due to skill or chance, irrespective of what assets the player holds. For this reason, RMT cannot be used to “cheat” in Habbo Hotel. An exception is competing in the number and quality of assets owned, which is a common hobby, but for these collectors RMT is instrumental. Moreover, any achievements in any of the activities are recorded

not in the avatar's prowess, but in the user's social standing. This achievement hierarchy cannot easily be foiled through RMT. Thus in Habbo Hotel, competition- and achievement-oriented players have little reason to experience RMT in a negative way.

5.4 MindArk: Project Entropia

Project Entropia is developed, published and operated by MindArk PE AB in Gothenburg, Sweden. It is a MMORPG with a science fiction setting: players take the role of human settlers on a distant planet inhabited by peculiar monsters and malevolent robots. Project Entropia was launched in 2003 and approximately 250 000 player accounts have been registered, according to MindArk. The actual number of active players is probably measured in tens of thousands.

Economic integration with the real world has been Project Entropia's primary design goal from the start [20]. MindArk encourages and facilitates integration through guaranteeing a fixed exchange rate between the in-world currency and U.S. dollars. It promises to exchange ten Project Entropia Dollars ('PED') to one U.S. dollar and vice versa. Players can buy PEDs from MindArk by using a credit card, bank transfer or various online payment systems. When players wish to cash out and sell PEDs back to MindArk, MindArk sends the money using an international bank transfer. Unlike most MMORPGs, Project Entropia makes individual avatar attributes tradeable in-world using so-called "skill chips". This reduces or eliminates account trade.

There is a vibrant in-world economy in Project Entropia. As in Habbo Hotel, many assets are traded because of their customisation or expressional value. For example, paint kits that enable players to change the colour of their possessions are highly valued. Yet in addition to the social aspect, Project Entropia also includes gameplay similar to achievement-oriented MMORPGs: combat, gathering and crafting are major activities, and avatar improvement is supported. As discussed above, the argument has been made in connection with other MMORPGs that real-money trade spoils such a game since it enables players to buy their way to rewards instead of fighting for them, invalidating the achievement hierarchy.

Buying oneself a powerful avatar is particularly easy in Project Entropia. Does this mean that Project Entropia cannot satisfy the needs of achievement-oriented players? I believe the answer is no. In MMORPGs like EverQuest, the avatar's attributes and possessions are the main measure of achievement in the player community. In Project Entropia the measures are different. Perhaps one measure is economic viability. Players strive to create avatars and guilds (known as "societies") that turn in an economic profit. Those who invest more will have higher revenues, but their opportunity costs will also be higher. As in the real world, superior returns result not from additional investment, but from competitive advantages. In Project Entropia, players seek competitive advantages through effective organisation, skill and information. Ownership of natural resources may also become a source of economic rents in the future.⁴ Strategic management in the Project Entropia universe would be an interesting topic for study in itself, but here it suffices to say that I believe there is an

⁴ In December 2004 it was widely publicised how a Project Entropia player spent USD 26 500 on a virtual island.

achievement hierarchy in Project Entropia where success cannot be bought any more than a firm can buy success in the real world.

6. RESULTS: TEN USER PERCEPTIONS ON REAL-MONEY TRADE

The objective of this study was to describe different ways in which users perceive the real-money trade of virtual assets, and to explain why a player might hold a particular perception, be it negative or positive. In Table 2, I presented a model based on a literature review and Yee's player motivations model [26]. It contained five different perceptions, organised according to what the users' motivation for play was. In part five, I presented four short case studies on virtual worlds and RMT. The cases illuminated a number of additional perceptions which were not included in Table 2. The cases also showed that advancement- and competition-oriented players do not necessarily have to experience RMT in a negative way. The key seem to be whether the object of trade is the actual status or advantage, or some other virtual asset. In virtual worlds where status and advantages are inherently non-tradeable, RMT is non-controversial. An improved model that includes the insights obtained from the case studies is presented in Table 3.

Table 3. Ten different user perceptions on RMT

Achievement	Social	Immersion
Advancement If RMT enables status to be bought, it violates the achievement hierarchy	Socialising RMT allows players to express themselves through their buying behaviour	Discovery RMT breaks the magic circle, but gives more choice over which content to experience
Mechanics RMT makes it easier to obtain different asset configurations to examine	Relationship RMT allows those with less time to catch up and play together with their friends	Role-Playing RMT allows players to obtain the props that are needed for their chosen fantasy
Competition RMT is cheating if it can be used to obtain competitive advantages	Teamwork RMT provides objectives for teamwork and motivation for effective organisation	Customisation RMT makes it easier to obtain a set of assets that correspond to the player's taste
		Escapism RMT breaks the magic circle, introducing real-life worries into the virtual world

Issues not included in the model include the fact that the trading of player accounts can make social-oriented players uneasy, as it can confuse players as to the identity behind an avatar. On the other hand, account trade lowers the players' switching costs between virtual worlds, making it easier for social players to follow their friends from service to service.

7. DISCUSSION

The results are consistent with some of the earlier research referenced in part two, in part because the model was partly based on that work. On the other hand, the results indicate that even achievement- and immersion-oriented players may see RMT favourably in some circumstances. This is in slight contrast with Bartle's [2] and Castronova's [9] views, which suggest that the existence of RMT is undesirable for such players.

This study was exploratory in nature, identifying key issues from literature and case materials without attempting to quantify them. The result is an internally consistent model with links to previous research, but with weak verification of external validity. It could be used as a design aid or a tool for segmenting users when planning RMT strategies, as it identifies a wide range of possible perceptions. However, the mappings between the perceptions and Yee's player motivations [26] as described in Table 3 should be verified with a user survey before they can be relied on to a larger extent.

8. REFERENCES

- [1] Bartle, R. A. Hearts, Clubs, Diamonds, Spades: players who suit MUDs. 1(1) *Journal of Virtual Environments*, 1997. <<http://www.brandeis.edu/pubs/jove/HTML/v1/bartle.html>>
- [2] Bartle, R. A. *Pitfalls of Virtual Property*. The Themis Group, 2004. <http://www.themis-group.com/uploads/Pitfalls_of_Virtual_Property.pdf>
- [3] Book, B. *Moving Beyond the Game: Social Virtual Worlds*. State of Play 2 Conference, New York Law School, 2004. <http://www.virtualworldsreview.com/papers/BBook_SoP2.pdf>
- [4] Burke, T. *Rubicite Breastplate Priced to Move, Cheap: How Virtual Economies Become Real Simulations* (2002) <<http://www.swarthmore.edu/SocSci/tburke1/RubiciteBreastplate.pdf>>
- [5] Burke, T. *The Mystery of SWG*, 2003 <<http://www.swarthmore.edu/SocSci/tburke1/swgmystery.html>>
- [6] Caillois, R. *Man, Play and Games*. London: Thames and Hudson, 1962.
- [7] Castronova, E. *Virtual Worlds: A First-Hand Account of Market and Society on the Cyberian Frontier*. CESifo Working Paper Series No. 618. 2001. <<http://ssrn.com/abstract=294828>>
- [8] Castronova, E. *On Virtual Economies*. CESifo Working Paper Series No. 752. 2002. <<http://ssrn.com/abstract=338500>>
- [9] Castronova, E. The Right to Play. *State of Play Conference Proceedings*, New York Law School, 2004.
- [10] CNET News.com. *Sony to ban sale of online characters from its popular gaming sites*. Sandoval, G. 10 April 2000. <<http://news.com.com/2100-1017-239052.html>>
- [11] Electronic Arts. *Bidding for UO accounts on Popular Internet Auction Site Reaching Into the Thousands of Dollars*. Press release 13 April 1999. <http://retailsupport.ea.com/corporate/pressreleases/uo_eyebay.html>
- [12] Johnson, M. and Toiskallio, K. Fansites as Sources for User Research: Case Habbo Hotel. *Proceedings of IRIS'28*, August 6-9, 2005.
- [13] Lastowka, F. G. and Hunter, D. The Laws of the Virtual Worlds. *92 California Law Review* 1, 2004.
- [14] MacInnes, I., Park, Y.J. and Whang, S. M. *Virtual World Governance: Digital Item Trade and its Consequences in Korea*. TPRC Conference Paper, 2004. <<http://web.si.umich.edu/tprc/archive-search-abstract.cfm?PaperID=382>>
- [15] MacInnes, I. *The Implications of Property Rights in Virtual World Business Models*. Presented at the Americas Conference of Information Systems (AMCIS 2004), New York, 2004. <<http://web.si.umich.edu/tprc/archive-search-abstract.cfm?PaperID=382>>
- [16] Salen, K. and Zimmerman, E. *Rules of Play*. MIT Press, 2004.
- [17] Salovaara, A., Johnson, M., Toiskallio, K., Tiitta, S. & Turpeinen, M. Creative Playmakers and Their Motivations in Four Multiplayer Game Communities. *Proceedings of the ACM conference on Advances in Computer Entertainment Technology (ACE2005)*, Short papers. New York, NY: ACM Press, 2005.
- [18] Sony Online Entertainment. *Sony Online Entertainment announces official online game auction site*. Press release 20 April 2005. <http://www.soe.sony.com/corp/press_releases/042005_StationExchange_announce.html>
- [19] Stratics. *MMOG Weekly Volume 41: Of Mountains and Molehills*, 2002. <<http://www.stratics.com/content/mmogweekly/mmog/vol41.shtml>>
- [20] Stratics. *Project Entropia Business Model*, 2003. <<http://www.stratics.com/content/portals/entropia/content/gameplay/guides/pebizmodel.php>>
- [21] Sulake. *Virtual community attracts teens worldwide*. Press release 11 July 2005. <<http://www.sulake.com/Habbo-4-million.htm>>
- [22] Taylor, T.L. Whose game is this anyway? Negotiating corporate ownership in a virtual world. In Frans Mäyrä (Ed.), *Computer Games and Digital Cultures Conference Proceedings*. (pp. 227-242). Tampere: Tampere University Press, 2002.
- [23] Terra Nova. *Secondary markets: \$880 million*. 30 October 2004. <http://terranova.blogs.com/terra_nova/2004/10/secondary_marke.html>
- [24] Woodcock, B. S. *An Analysis of MMOG Subscription Growth – Version 18.0*. 10 June 2005. <<http://www.mmogchart.com/>>
- [25] Yee, Nicholas. *The Norrathian Scrolls: A Study of EverQuest (version 2.5)*, 2001. <<http://www.nickyee.com/eqt/report.html>>
- [26] Yee, Nicholas. *Model of Player Motivations*, 2005. <<http://www.nickyee.com/daedalus/archives/001298.php>>