

Play Time: The Problem of Abundance in MMORPG

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Abstract

This work provides a detailed economic analysis of play within massively multiplayer online roleplaying games (MMORPG). Developers are assumed to be motivated by profit, and important sources of revenue (box sales, subscription fees, and so-called ‘fiat sales’) and cost (content, bandwidth and server load, and customer service) are examined. A systemization of player wants is then offered, one defining wants for ‘accomplishment’, ‘content’, ‘power’, and ‘fellowship’. The incidence of costs incurred by the satisfaction of these wants is particularly emphasized. The classic wants for non-game consumption and leisure are also discussed. Having enumerated the goals of developers and players, it is shown that many MMORPG design conventions serve to manage tensions between these conflicting wants, while generally serving the developer’s profit motive. Of particular interest are discussions covering ‘elitist’ and ‘egalitarian’ challenge, the cost of play time, the relationship between power and content, and the relationship between fellowship and power. Finally, a solution to the ‘problem of abundance’ is put forth. It is argued that the abundance offered by MMORPG is in fact illusory, as play value derives ultimately from scarce real-world goods like game content and player time.

1 Introduction

A notable characteristic of MMORPG is the extraordinary amount of time spent playing them. If the opportunity cost of a player’s time is measured by their wage rate, it is seen that even low-wage players invest hundreds of dollars worth of play time each month, making the ostensible ‘cost’ of the game — the box price and subscription fees — a triviality. Many critics (and some fans) go to the extreme of calling MMORPG literally ‘addictive’²; some blame their obsession with MMORPG for failing grades and failed marriages. What makes these games so compelling?

The great volume of play time raises another issue. Though players spend countless hours in the game world, and though they do so willingly, it is not always clear that this time is enjoyable. Some exercises, such as craft or hunting,

are very repetitive. Important spawn points are frequently the site of ‘camping’, where groups wait for hours at a time to loot rare mobs. In games where attributes or skills increase through use, it is common for players to ‘practice’ these statistics by repeating the same action hundreds or thousands of times.

MMORPG would seem to be all fun and games, yet for players they are not always fun, and for those who make a business of selling characters and items, they are certainly more than games. The following pages attempt to develop these ideas and understand some of their economic implications.

2 Wants, constraints, and game goods

Economic phenomena result from the opposition of wants and constraints. In the game industry, there are two agents: the developer, and the player. To understand the economics of MMORPG play, it is necessary first to understand what motivates and constrains these actors.

2.1 Developer wants

It is assumed that developers seek to maximize profits. This, naturally, invokes the familiar trade-off between revenue and cost.

Though game companies earn revenue from other sources (by licensing game technology, by selling in-game product placements, etc.), most is derived from the sale of game services to players, in the form of box sales, subscription fees, and fiat sales.

2.1.1 Box sales

Box sales — thus named for the colorful game boxes found on store shelves — include sales of the basic game client, plus expansions³. As is typical for the PC game industry, MMORPG box prices drop quickly after release; a box initially priced at \$50 may sell for \$10 a year later. Nor does

1. Thanks to David Kennerly and Brask Mumei for their many insightful comments.

2. A popular nickname for *EverQuest* is ‘EverCrack’. In one survey of MMORPG players, more than 40% described themselves as “probably” or “definitely addicted” to play. (Yee 2004)

3. Expansions supplement the basic game and are released perhaps once or twice a year. Though not strictly necessary to continue play, expansions provide access to additional content, such as new areas and character classes, and often add useful features to the game client.

every player necessarily buy each expansion; casual players will have difficulty consuming even a portion of the content from a typical MMORPG. Box sales are thus an important but relatively sporadic revenue source. The true benefit of box sales may, in fact, be the recruitment of new subscribers, which boxes facilitate by manifesting a retail presence, and by generating reviews and other coverage from the game press.

2.1.2 Subscription fees

The most important revenue source by far is subscription fees. An earlier generation of online games charged hourly or minute rates for game access. Offered as 'premium services' by the ISPs of the day, these usually cost around \$5 per hour, though hourly rates could rise as high as \$19 for some (Mulligan 2001, Mulligan 2000, Mulligan & Patrovsky 2003, p. 453). After AOL moved to a flat rate in 1996, many companies were forced to abandon this model. As of 2004, most MMORPG charge flat monthly rates which provide the bulk of the industry's revenue. A typical MMORPG now generates some \$120 to \$192 in subscriptions per player year. This revenue — equal to the sale of at least three game boxes — incurs no packaging, marketing, or merchandising costs, and accrues whether or not the subscriber even uses their account. Subscription fees are the real payoff for developers and the investors who back them.

2.1.3 Fiat sales

A third, more novel revenue source is fiat sale, which *Project Entropia* — a surprising and ambitious new MMORPG — uses as its primary revenue source. Game play in *PE* is theoretically free; the client is offered as a free download, and no subscription fees are charged. Instead, players are encouraged to purchase units of game currency ('PED' or 'Project Entropia Dollars', priced at ten per U.S. dollar) which are used to purchase goods and services within the game (Project Entropia Infobooth 2004). The industry veteran, *Ultima Online*, recently made its own foray into fiat sale with its 'Advanced Character Service'. For \$29.99, this controversial service delivers a partially developed character, saving dozens of hours of apparently unwanted play time⁴. Though unproven as yet, this revenue model should hold interest for developers and economists alike.

2.2 Developer costs

Developers face many costs in creating and maintaining a MMORPG, of which three bear directly on the service they provide to players: content development, bandwidth and server load, and customer service.

2.2.1 Content

The first and greatest cost faced by game companies is the development of 'content', the substance of the game itself. Content encompasses many aspects of the game experience; it includes the items and mobiles that populate the game world, the art, sounds, and stories that give it color, and the game play that animates it. Also included (for purposes of this discussion) are the technical details that support these elements, including graphics technology, and database and network infrastructure. It is primarily content that differentiates one game from another; it provides matériel for marketing, it influences reviews, and ideally, it creates an enjoyable play experience.

Content development requires unusual and expensive inputs such as game design, computer art, software engineering, and quality assurance. A typical MMORPG is the product of several years' effort by dozens of specialized workers. Game companies can thus expect to spend millions on content before earning a cent of revenue. Compounding the great expense of this process is the uncertainty inherent in software development; large projects can run years overdue, and the confluence of volatile computer technology and intense competition between games adds still more risk. Though the most extensive and costly development takes place before launch, MMORPG maintain smaller, permanent teams to provide ongoing development. These fix bugs and exploits, and introduce new content to maintain players' interest. Their salaries form a significant part of a game's operating costs.

Content is a fixed cost. Though a game with more content may attract more players, a given quantity of content costs the same regardless of how many players 'consume' it. The nature of content and its relationship to consumption are examined in greater depth below (see sections 2.3.2 and 3.2.1).

4. Supposedly, UO was an unwitting participant in fiat sale long before this service began. It is said that a UO employee (the infamous 'GM Darwin') was fired in 1999 for surreptitiously creating and selling game goods on eBay — sales which earned him some \$8000. It seems likely that some or all games experience similar problems that are covered up or pass undetected.

2.2.2 Bandwidth and server load

'Bandwidth' is a measure of the information that passes or can pass over a network. 'Load' describes the processing work done by a computer, including CPU utilization and disk and memory usage. A lack of bandwidth or server capacity can prevent servers from reacting promptly to player input, making the game difficult or unpleasant to play.

Though it belies the intuition of most users, bandwidth is a costly resource, accounting for as much as 20% of MMORPG operating costs (Mulligan & Patrovsky 2003, p. 26). Servers are also expensive, and their upkeep incurs additional cost.

While development is a fixed cost, bandwidth and server load vary with the number of concurrent player connections. Though this number varies greatly over the span of a week, capacity must be sufficient to meet peak usage levels, despite the underutilization this causes at other times.

2.2.3 Customer service

Players inevitably have questions about billing and technical problems, which MMORPG address with telephone and e-mail support services. In addition to such traditional support needs, the novelty and complexity of the game world demands a specialized form of customer service in the form of 'gamemasters' or 'GMs'. These personnel address problems occurring within the game context, helping characters afflicted by bugs, or managing abusive players. Though GMs manifest character-like personae within the game world, their powers extend well beyond that context⁵; they can create items or otherwise alter the game world, review logs of character speech and game events, and even ban players from the game. To manage the frustrations of a large player base is costly and difficult, but also necessary to retain players and the subscriptions they represent.

Like bandwidth and server load, customer service is a variable cost, though it could vary with total player population as much as connection concurrency. Though customer service staff earn lower wages than content developers, they are employed in greater numbers; popular MMORPG employ dozens of GMs (Mulligan & Patrovsky 2003, p. 236) across three shifts. This represents another significant operating expense for game companies.

2.3 Player wants

Why do people play MMORPG? Why are subscriptions paid, wages forgone? In the simplest analysis, games are

played for their entertainment value. While obviously true, this trivial claim cannot explain the paradox of asymmetric trade: the fact that some players pay others to play — in effect — *for* them.

Trade mediates differences in preferences or endowments. The existence of asymmetric trade implies some variation in these factors, particularly with respect to the production and disposition of game assets. What preferences are these? What endowments affect production in the game world?

Economists traditionally distinguish consumers' desire for leisure from their consumption preference, which is expressed ultimately by their willingness to work. While MMORPG play would seem to be an example of leisure, asymmetric trade blurs this distinction by attaching financial rewards to game play. The leisure and work aspects of MMORPG play must therefore be distinguished if the phenomenon is to be understood.

Various attempts have been made to explain the appeal of MMORPG, and presumably, many more will be. Indeed, the reasons for playing are doubtless as varied as the players themselves. What should form the basis for a systemization of player motives?

For the present work, two criteria suggest themselves. First, it seems unnecessary or futile for an economic analysis to address phenomena with no obvious economic interpretation. For this reason, subjective concepts like 'immersion' will be deprecated, and credence given instead to the twin economic *genii* of cost and benefit. Second, since this work endeavors to study MMORPG, it seems reasonable that the proposed motives be 'definitive' with respect to that subject, reflecting wants that MMORPG are particularly suited to satisfying. Thus, it may be that some parents play MMORPG to better relate to their children, but this practice neither distinguishes MMORPG, nor is it a likely design focus for developers. Therefore, it will be disregarded.

With these considerations in mind, four sources of MMORPG entertainment value are proposed, two of which relate particularly to the possession of game goods. These are 'accomplishment', 'content', 'power', and 'fellowship'⁶.

5. If designers are the gods of the game world, and programmers the demiurges, then GMs are their angels.

6. As will be seen, this articulation of player value is reminiscent of the schema described by Richard Bartle (a founding developer of MUD1) in his classic 'Hearts, Clubs, Diamonds, Spades: Players Who Suit MUDs'. (Bartle 1996)

Though comparison is inevitable, analogies between Bartle's work and this one should be made with care. Bartle's focus is the classification of players based on their behavior; in his analysis, players can be divided into four groups: 'achievers', 'explorers', 'socializers', and 'killers'. Achievers are concerned with "game-related goals" such as "accumulating and disposing of large quantities of high-value treasure, or cutting a

2.3.1 Accomplishment

An important function of games is to distinguish players from one another, and from those who do not play. To that end, games typically identify one player or team as the ‘winner’; most also define subordinate goals (plays to be made, points to be scored) to be completed while pursuing this larger aim. The existence of subordinate goals allows distinction to be shared somewhat, so that all who participate — win or lose — obtain some satisfaction from play. The completion of such goals, lesser and greater, and the distinction that follows, will be described as ‘accomplishment’.

Distinction implies a relationship between those who possess a quality and those who do not. Ubiquitous qualities confer no distinction; therefore, accomplishment can also be defined as the purposeful attainment of a scarce outcome. Though they vary greatly in form, all games are alike in one respect: they present players with a goal, and they restrict access to that goal with a challenge of some sort, this arising from physical or mental constraints, chance, or the efforts of opposing players. The more difficult the challenge, the more scarce is the goal or outcome, and intuitively, the greater is the accomplishment. Thus are challenge, scarcity, and accomplishment functionally joined⁷. Though it is provided by other activities such as hobbies and work, games are particularly suited to creating accomplishment. This is arguably what distinguishes them from other entertainment.

Like most roleplaying games, MMORPG define no winner *per se*, but they do provide numerous opportunities for accomplishment. These include small, discrete tasks — quests to finish, mobiles and players to defeat, items to craft or loot — and more general tasks, such as the improvement of one’s character. Most accomplishment results in the creation of game wealth, in the form of items or character advancement. This wealth, however, must not be confused with accomplishment itself. Accomplishment describes an achievement; game assets are merely a byproduct or token of that achievement. Consequently, though game goods can be transferred between players, accomplishment cannot.

Accomplished players clearly enjoy the distinction their success confers. Yet accomplishment arises from many activities — why pursue it in MMORPG? Because rewards in the game world, though small, accrue consistently. ‘Real’ life, by contrast, offers no such guarantee. For all the complexity of MMORPG, they are safer, more manageable, and — at times, perhaps — more rewarding than other activities.

2.3.2 Content

Most traditional games are limited in scope; they feature simple rule sets, and beyond practical requirements such as uniforms or game pieces, they require little embellishment. Because of this simplicity, the production of such games is relatively inexpensive. MMORPG, by contrast, are quite large in scale. Popular games comprise millions of dollars worth of creative output, the quantity and character of which constitute the primary distinction between one MMORPG and another. This output is broadly described as ‘content’.

Content derives from a great variety of crafts, but for purposes of elaboration, it will be divided into three categories: aesthetic, play, and technical.

swathe through hordes of mobiles”. Explorers wish to learn about the game world, whether by “mapping its topology” or through “experimentation with its physics”. Socializers desire interaction with other players, “sympathising, joking, entertaining, listening”. Killers enjoy “imposing themselves upon others”, using their game persona to “cause distress to (or, in rare circumstances, to help) other players”.

This work also addresses behavior, but rather than defining ‘play styles’ or describing the players themselves, it does so by identifying the wants that motivate players. This creates some important distinctions.

The pursuit of accomplishment, as described here, is very similar to Bartle’s ‘achievement’, with two exceptions. In Bartle’s words, “To appeal to achievers... one approach might be to introduce an extensive level/class system (so as to provide plenty of opportunity to reward investment of time) and to maximise the size of the world (so there is more for them to achieve).” This implies that game-nominal factors affect real accomplishment, a view explicitly rejected here. Bartle also imputes a competitive motive to achievement, something more closely associated with power in the present work.

The correspondence between content consumption and ‘exploration’ is tenuous. While content-rich games likely provide ample scope for exploration, this activity is quite distinct from content consumption. Explorers undertake “esoteric actions in wild, out-of-the-way places, looking for interesting features (i.e. bugs) and figuring out how things work”; they seek not to experience the game so much as transcend it. The appreciation of content is something every gamer can enjoy; exploration would seem to be a more specialized taste.

The ‘fellowship’ described here is very similar to Bartle’s notion of socializing. This work adds that the development of friendships and other relationships adds greatly to the enjoyment of socializing, and that these can be acquired only with time.

‘Killing’ and ‘power’ — though obviously related — are distinct concepts. ‘Killing’ comprises a range of activities, broadly defined as “imposition upon others”. Some of this imposition may be helpful in nature, but most is just what the name implies — PvP combat, if not outright griefing. Power, by contrast, is a tool, not a trade; it is the weapon of killers, and the shield of their would-be victims. Though only some choose to practice killing, these few potentially threaten every player in the game. Thus, relative to killing, power seems more broad in its appeal. Because combat is so intrinsic to MMORPG play, the acquisition and use of power also relates closely to the consumption of content, as will be demonstrated.

7. While it seems obvious that players hold greater appreciation for more scarce outcomes, the mechanism by which their perception of scarcity is constructed and shared remains unclear. Perhaps it is simply another aspect of the game world, to be learned alongside the myriad other details that constitute MMORPG play.

Aesthetic content is basically decorative; it includes visual art, writing, music, and other work that describes or ornaments the game world. As such, it is a familiar commodity, forming the substance of most entertainment media. Gamers enjoy it just as other consumers do.

Play content is the output of game designers; it includes the design of items, mobiles, quests, areas, and the play mechanics that interrelate them. Where aesthetic content is consumed passively, play content is explicitly interactive; it is enjoyed by engaging new opponents, learning and executing new strategies, and most generally, by striving within and against the constraints of the game world. Play content should not be confused with accomplishment, however. Though accomplishment is linked to challenge, and though play content is the medium from which challenge is created, the difficulty of some game (and hence its accomplishment value) is independent of its content; in fact, it is essentially arbitrary, as will be demonstrated below. Moreover, accomplishment accrues only when success is realized, but play content is presumably enjoyed regardless of outcome.

Technical content is the necessary and ideally hidden complement to aesthetic and play content; it includes the software and other technical contrivances that implement the work of the game's artists and designers⁸.

Content is consumed by viewing or interacting with it. It follows, therefore, that particular quantities of content are associated with specific game states, such as the character's location, or their class and level. This constraint is an essential aspect of MMORPG design, as will be shown later.

The appeal of aesthetic content — like the aesthetic drive in general — is difficult to explain, but it obviously holds great value for consumers. Just as moviegoers show an insatiable demand for spectacle, gamers seek ever sharper, more varied, and detailed graphics. The value of play is also difficult to explain, but its appeal is just as clear — even animals enjoy it. Though power determines the efficacy of a character's actions (see section 2.3.3), their specific nature and range is determined by play content. Accordingly, the more complex and varied that content, the greater is the player's opportunity to 'play' in the game world — i.e., to exercise creative or strategic thought, to experiment, or to express other play preferences.

2.3.3 Power

In many games, players are distinguished by skill or natural ability, qualities that determine not just their chance of winning, but more generally, their ability to act within the constraints of the game. Though skill is a factor in

MMORPG, 'power' — a quality inherent to the character rather than the player — is far more important.

Power describes a character's ability to change the state of the game world⁹. While such state changes can take many forms — *Ultima Online* allows characters to build furniture and grow houseplants — their most common application is combat. Despite its cinematic qualities, MMORPG combat is essentially a quantitative contest. Power is similarly quantitative, deriving from the attributes of the character and their equipment. Though player skill facilitates the use of power, it is much less than decisive; even the most skilled players are helpless against nominally more powerful opponents¹⁰. Also, unlike player skill, power inheres to game assets that are quite easily exchanged. Thus is power itself transferred between players.

Why do players value power? One can assume that all players desire a sense of autonomy and control. To this preference MMORPG offer a combination of threats and opportunities.

The most infamous of player archetypes is the 'griever', one who enjoys upsetting other players. Though grief play can take many forms, it is often manifested as (and sometimes redressed through) player-killing. Obviously, power is the prevailing dynamic here, both psychologically and practically: it allows grievers to harass more effectively, and it gives their victims the ability to resist. Many games disallow overt PvP combat, but even so, it is usually possible to project force against players indirectly. A classic example is the 'train', a group of hostile mobiles lured (intentionally or otherwise) towards an unsuspecting character. Those engaged in 'consensual' player-killing (combat motivated by friendly competition rather than malice) also have strong incentives to accumulate power.

Just as many enjoy irritating their peers, others wish to aid them, especially newbies, whom they patronize with gifts or magical assistance. Some just enjoy showing off. Since power allows players to alter the game world — a world they share — almost any manifestation of power can affect other players. Power also facilitates content consumption, as will be explained below (see Section 3.3.3).

So whether a player wishes to injure or aid their fellows, or simply protect themselves, their ability to do so is largely commensurate with their power. Just as MMORPG offer a

8. It is not customary to describe technical output as a form of game content; however, given its great cost and its necessary relationship to aesthetic and play content, it seems useful to include it here.

9. This is not meant to include political power, which — though it has its place in MMORPG — inheres to the player rather than the character.

10. When skilled players do overcome more powerful foes, their strategies are likely to be characterized as 'exploits'.

reliable means of experiencing accomplishment, they give players a safe means of acquiring very real power.

2.3.4 Fellowship

As players travel the game world, they meet, collaborate, and compete with countless other players. Many of these meetings are unremarkable, but some lead to persistent relationships — friendships, partnerships, rivalries — that can hold great import for the player. The body of these accumulated relationships will be called ‘fellowship’. Most fellowship is presumably friendly in nature, but other types can certainly be imagined, and in fact, any persistent relationship that provides value to some player can usefully be described with this term¹¹.

The appeal of fellowship hardly requires explanation; like people everywhere, players desire companionship and other social interaction. But why seek fellowship in the game world? For all the obstacles MMORPG present to sociality — anonymity, the awkwardness of computer-mediated communication — they offer useful aids as well. The game provides a useful topic of conversation, and few players can resist comparing strategies or enumerating complaints. Similarly, the esoteric nature of MMORPG presumably attracts players with somewhat similar backgrounds and interests. Though it invites abuse, player anonymity can also promote sociality by diminishing the cost of adverse social outcomes. Of all the player wants, fellowship has the least to do with game play, *per se*¹². It is nonetheless a most compelling part of the play experience.

2.3.5 Non-game consumption and work

Along with wants for game entertainment, MMORPG players face the constraints of time and wealth that all actors contend with. These affect play decisions in various ways.

Players wish generally to maximize their consumption and leisure, including non-game leisure; they do this by balancing costs and benefits. As well as entertaining the player, game play incurs cost in the form of box costs, subscription fees, and play time.

Many players are employed, and these earn a wide variety of wages. Others are absent from the labor market¹³. For employed players in an efficient market, the opportunity cost of play time is their wage rate. For those who do not work, the opportunity cost is equal to or greater than the wage they would earn if employed¹⁴. MMORPG play thus incurs significant costs for all players.

Asymmetric trade offsets the cost of MMORPG play by increasing the non-game wealth of sellers and substituting for the play time of buyers. The magnitude of this trade benefit is determined by the quantity and price of the goods traded, which in turn depend on the aggregate supply of and demand for such goods. Consequently, for those who engage in asymmetric trade, the value of game play — this being the balance of its costs and benefits, financial and otherwise — depends not only on their own preferences and endowments, but on those of their peers. The relationship and interaction of these preferences is examined in ‘Play Time: Principles of MMORPG Asymmetric Trade’.

3 Balancing wants and constraints

This description of player wants hopefully will seem plausible to the reader. Mere plausibility, however, is a weak test for new ideas. Many theories of player motivation can be imagined, some likely just as compelling. What makes these ideas worthy of consideration?

First, by analyzing the economic nature of the player’s entertainment wants, several defining characteristics of MMORPG can be shown to support the developers’ profit motive. Even aspects of game design with no obvious economic relevance can be shown to have direct or indirect effects on profits. It can also be shown that an intrinsic tension exists between the wants of players and developers, one that is resolved for players by asymmetric trade.

11. As with Bartle’s controversial ‘killer’ designation, this definition produces some painful semantic twists. For example, a griefer who massacres limp swarms of low-level characters is enjoying power, but one who enjoys humiliating a specific player is enjoying power and ‘fellowship’.

12. This is particularly demonstrated by the popularity of single-player computer RPG, which offer accomplishment, content, and perhaps power, but certainly no fellowship.

13. For the sake of simplicity, this analysis ignores the possibility of involuntary unemployment. It also assumes that the demand for labor is perfectly elastic with respect to MMORPG players (who as of yet represent a small portion of the labor supply).

14. MMORPG play is assumed to be one of several leisure activities competing with work for the player’s time. It is also assumed that leisure offers decreasing marginal benefits to the player, and that the player’s wage is constant. Excepting the possibility of unemployment, players will not engage in any leisure activity past the point where its marginal value equals their wage. Therefore, at equilibrium, the marginal value of every leisure activity (including game play) will equal the wage (for employed players) or exceed it (for those whose time is spent entirely on leisure). The cost of play time is the value of those activities forgone. An employed player foregoes work, since the marginal value of other leisure activities has already decreased to their wage rate. Their opportunity cost therefore equals their wage. A player who is not employed may be foregoing work or other leisure. Thus, their opportunity cost is equal to or greater than their (hypothetical) wage.

To that end, it is necessary to complete the analysis. The wants and constraints of developers and players have been outlined above. The specific interaction of these factors — in particular, the way in which the satisfaction of player wants incurs cost for one party or another — is examined below.

3.1 The scarcity of accomplishment

MMORPG players measure accomplishment with metrics defined by the game itself, such as levels, items, and money. Could these be the source of accomplishment value? Recall the ‘problem of abundance’: developers, unlike real-world producers, can instantiate game goods in near-infinite quantities. If they did so, would players experience more accomplishment? Intuition suggests they would not. What, then, is the real source of accomplishment value?

As stated above, accomplishment rewards players by distinguishing them from others. It does this by associating successful players with scarce outcomes, such scarcity being maintained by (and synonymous with) some challenge. The game wealth attending MMORPG accomplishment is not implicated here, and neither should it be. Rather, the substance of accomplishment is challenge itself. To understand accomplishment, it is necessary first to understand the nature of MMORPG challenge.

3.1.1 Elitism and egalitarianism

Again, successful outcomes must remain scarce to confer accomplishment. But game worlds are unbound by mundane scarcity. How can success be constrained?

Two methods suggest themselves. One is to favor certain players at the expense of others; this will be called ‘elitist challenge’. While most elitist games distinguish players on the basis of physical attributes or skill, any distinction is sufficient to manifest elitist challenge, no matter how arbitrary¹⁵. Another means of constraining success is to impose some cost upon game play¹⁶; this will be called ‘egalitarian challenge’¹⁷.

Most games, including MMORPG, offer a mixture of elitist and egalitarian challenge. In MMORPG, elitist challenge often involves problem-solving exercises: the solution of quest puzzles, the allocation of scarce character resources. Egalitarian challenges include time-consuming tasks like combat¹⁸, craft, and travel. Most agree that elitist challenge, which exercises the player’s ability, is more engaging than egalitarian challenge, which merely exhausts their

resources. Yet MMORPG overwhelmingly emphasize egalitarian challenge¹⁹ — why is this?

Elitist challenge presents a problem that is fundamentally economic. If most players wish to accomplish when they play, then by discriminating between players on the basis of ability, elitist challenge narrows the market of potential subscribers. This claim is supported by looking outside the MMORPG genre. Other, more elitist computer games (particularly action and strategy games) are often played online, but seldom exist as large, persistent multiplayer worlds. While there are likely many reasons for this, one is that, by definition, only a subset of all players could excel in such a setting, leaving the rest frustrated. Instead, elitist online games typically offer small, transient game sessions, which makes it relatively easy for players to segregate themselves by skill.

The nature of elitism may account for another convention of MMORPG play. To the extent that they exist, elitist challenges can often be bypassed by consulting one of the countless websites devoted to MMORPG play. These sites offer a wealth of information, including data on items and mobiles, quest ‘walkthroughs’, and recommendations for training and outfitting characters. Though generally the work of hobbyists, their content is accurate and extensive; their use can — at the player’s discretion — turn interesting challenges into merely tedious ones. This allows players to avoid elitist challenge if they lack the ability or the taste

15. It might be asked why ‘arbitrary’ distinctions would be appreciated by players. As with other preferences, no economist can say which accomplishments are meaningful and which are not; nor is there any reason for people to agree generally in their appreciation of accomplishment. Games of chance are necessarily arbitrary, and it seems obvious that those who play them receive satisfaction (if also financial gain) from winning. Even ‘skill’, when specific to a particular game, is in some sense an arbitrary distinction.

16. The notion that challenge can derive from cost helps to explain why games of chance so frequently involve gambling. Specifically, any game of chance, no matter how long the odds, will yield an abundance of success if played often enough. The financial costs of gambling ensure that success remains relatively scarce.

17. Some might object to the term ‘egalitarian’, since such challenge necessarily favors players with certain economic endowments. While certainly true, economic forces do at least take preferences into account. By contrast, no strength of preference will give a short person the height they need to play basketball.

Some ‘elitist’ qualities can be acquired through ‘egalitarian’ means such as practice or training. However, just as workers specialize, most players will find themselves suited (by experience or talent) to a few types of game. This suggests a quantitative measure of elitism: the variation in cost, among a group of randomly chosen players, of some level of achievement in a particular game. Games that show little variation (like games of chance) are more egalitarian; games that show much (like basketball) are elitist.

18. Combat can also offer elitist challenge, but (particularly at lower levels) is often predictable and undemanding.

19. This design convention is popularly known as ‘the treadmill’.

for it. Furthermore, while game companies often use intellectual property claims to contest the legality of exogenous trade, they have never made a practice of attacking sites that host such ‘spoilers’, even though these manifest more obvious forms of copyright infringement. This is partly, no doubt, an example of good public relations. However, it could be that developers value the flexibility that spoilers offer in the face of varied player abilities.

The notion that accomplishment derives from cost leads one to ask whether asymmetric purchase itself creates accomplishment. This idea can be disregarded for two reasons. First, while the market price of game goods does constrain buyers, the means of overcoming this constraint are extrinsic to the game. Consequently, while acquiring the wealth to buy items does represent an accomplishment, that accomplishment is not part of the MMORPG *per se*. Second, in an efficient market, the outcome of any transaction is predetermined, and such a state is clearly antithetical to any reasonable definition of play²⁰. Of course, ‘scamming’ — where one player defrauds another of money or items — makes the true practice of asymmetric trade much less than certain, but again, this ‘game’ transpires within the real world, and cannot be said to offer MMORPG accomplishment.

3.1.2 Accomplishment and play time

For whatever reason — tradition, economic function, or player preference — MMORPG are fundamentally egalitarian. Such challenge associates cost with successful play; in MMORPG, the bulk of this cost is time. The accomplishment value of some task therefore depends primarily on the play time necessary to complete it, with short tasks yielding little value and long tasks much more. Because players measure MMORPG accomplishment in terms of game wealth and power, this claim will surprise many. In this context, however, power is merely a token for play time, just as money is a token for real-world value. Consider that accomplishments conferring little or no power (such as titles) often hold great value for players.

Since most play results in advancement of some sort, and since there is no shortage of challenges for players to undertake, it can be assumed that accomplishment accrues at a more-or-less steady rate as the game is played. More skilled players may accomplish at a faster pace, but only to the extent that elitist game mechanics are present, and only at the cost of diminishing the accomplishment of unskilled players. Nor can developers change the accomplishment earned in some unit of play time, since that quantity is ultimately a manifestation of real-world time scarcity. Only players can choose how much is accomplished and when.

This notion of accomplishment is supported by the practice of ‘training’ characters. In games where character skills increase through use, it is common for players to improve their stats by repeating a single action at great length. Some players escape this tedium with scripting tools²¹, but others manually nurse their characters through countless incremental skill increases, often for hours at a time²². Given the relatively low cost at which skilled characters can be purchased, it is difficult to see any need for this practice, and aside from accomplishment, it is difficult to see what entertainment it could offer. For most players, training offers only accomplishment, in its most tedious and egalitarian form.

3.1.3 The cost of play time

Play time incurs two obvious costs: the opportunity cost of the time itself, and the cost of bandwidth and server capacity²³. By far the greater of these is play time. In one study, almost 70% of *EverQuest* players reported working full or part-time, at a mean net wage of just over \$20.00 per hour (Castronova 2001). In this and another study, *EQ* players also reported spending, on average, more than 20 hours per week in-game (Yee 2001, Castronova 2001). These figures hint at the staggering opportunity cost of play time. If correct, and if the assumptions of perfect labor market efficiency and perfect player wage elasticity are held, the average employed *EQ* player enjoys some \$1600 worth of play time monthly. Counting only employed gamers, the game as a whole (which claims some 400,000 subscribers) could consume as much as \$448,000,000 worth of play time every month²⁴.

Bandwidth and server costs accrue to the developer, but they are ultimately paid by players in the form of subscription fees. One industry source estimates these costs to account for almost 25% of MMORPG revenue²⁵ (Mulligan & Patrovsky 2003, p.68). If subscription fees average \$15, bandwidth and server load cost players roughly \$3.75

20. In the long run, of course, so is the outcome of any game of chance. Many players reject such games for just this reason.

21. Developers predictably frown on such ‘macroing’; in many games, it is grounds for banning.

22. To dull the monotony of this process, one player says, “I recommend you keep your Skill List open and shout ‘Woohoo!’ every time you see an increase.” (Drye 2001)

23. It seems possible that customer service costs also correlate with play time, but no evidence was found to support or refute this.

24. Again, this definition of opportunity cost relies on some stringent assumptions. A more realistic examination would yield lower but still impressively large costs. Also, wages and play time are certain to bear an inverse correlation, so only the most general estimates can be drawn here.

25. This includes costs for NOC staff, who maintain game servers.

per month²⁶. This yields a liberal estimate of five cents per hour — one quarter of one percent of the opportunity cost for employed players.

The player's willingness to pay these impressive costs implies that games offer great value as well, whether this value derives from accomplishment or another play output. Thus, relative to the value it offers players, play time is almost trivially inexpensive for developers²⁷.

3.2 The scarcity of content

Content is the developer's most direct contribution to the play experience, and as such, it is their best tool for attracting new players²⁸. What is the nature of this good?

The great cost of producing content has already been mentioned; are costs associated with its consumption as well? It might seem that a game with more content would require greater bandwidth, but this is not necessarily the case. Most elements of content — models and texture maps, sound effects, game logic — reside permanently on the server or the client, and need only be transmitted when the client is updated. As for player costs, if there is a limit to the amount of content a player can meaningfully appreciate in some unit of play time, existing MMORPG (to judge from their highly repetitious nature) have yet to approach it. It seems, therefore, that neither developer nor player incurs significant cost from content experience *per se*. Only its production incurs cost, and this is borne primarily by the producer²⁹. Thus, content, like most intellectual property, is essentially non-rivalrous; once produced, it can be delivered to many players at trivial expense³⁰.

Though content can be distributed and experienced arbitrarily, and though it persists over time, it cannot be enjoyed indefinitely by the same player. Just as a story or joke loses its impact with each telling, a quantity of content becomes less compelling as a player's familiarity with it grows. This phenomenon is nicely illustrated by the practice of 're-hueing' objects. Because models and textures are expensive to produce, developers often stretch this content by reproducing it in different colors; a single game might feature giant black beetles, giant red beetles, giant green beetles, *ad nauseam*. These mobiles may show other distinctions, but such differences are largely quantitative, and players quickly tire of this trick.

3.2.1 Content density

The importance of play time suggests another useful metric. 'Content density' can be defined as the amount of novel content experienced in a unit of play time. This value will

vary throughout the course of a game, but the general relationship is clear: the overall content density for some game must equal its total content cost divided by the play time necessary to complete it. As argued above, the experience of content incurs direct cost for neither player nor developer; therefore, variations in content density will be similarly costless. This concept is significant, rather, for defining the player's actual content benefit from play.

3.3 The scarcity of power

Power is the fabric of the MMORPG world, pervading all aspects of play and largely defining the relationship between players, mobiles, items, and their environment. Just as items are significant largely for the power they confer,

26. Technically, players also pay bandwidth and 'server' costs in the form of ISP fees and upkeep for their personal computers. These services, however, have many uses besides MMORPG play. It is thus difficult to say how their costs should be apportioned.

27. The fact that some or most MMORPG variable costs correlate with play time leads one to ask why they do not charge hourly rates for access. These calculations perhaps answer that question. The great majority of the hourly cost is incurred by the player; the flat pricing structure (which externalizes the developer's portion of this cost) therefore has little effect on the quantity of play. Hourly rates would internalize bandwidth and server costs, but they would also increase accounting and customer service costs. Therefore, the flat pricing scheme is likely more efficient. Flat pricing also allows developers to capture a portion of the consumer surplus.

28. The great cost of play time relative to subscription fees makes subscription price competition a seemingly poor marketing strategy. Increasing content density, by contrast, is an effective means of attracting customers, and can be seen as a form of price competition — one that addresses the real cost of play.

29. Advances in computer graphics often rely on improvements in the player's hardware; typically this entails more powerful graphics accelerators, faster CPUs, and more memory. As a result, the player's computer can itself be seen as an extension of the game's technical content, albeit one that incurs direct costs for the player. Though such 'player owned' technical content likely comprises a significant portion of the total — 46.6% of respondents to one survey report having upgraded their computers specifically to play *EverQuest* (Yee 2001) — computers and even graphics cards have many uses besides MMORPG play, so it is difficult to say how such costs could be allotted.

30. If content is truly the basis of MMORPG competition, and if MMORPG do not differentiate their content (and thus their subscribers) very effectively, content presents an interesting economic problem. Specifically, by dissociating production costs from consumption benefits, the nature of content severs the connection between development cost and subscription revenue. As a result, the mechanism of ordinary market competition — which compels firms to price where marginal cost equals marginal value — no longer applies. Since the time demands of MMORPG make it particularly costly for players to consume content from multiple games, MMORPG competition effectively limits the player's content access to a fraction of the industry's total output. Depending on the price elasticity of content supply, it is therefore conceivable that — deadweight loss notwithstanding — monopoly could be more efficient here than competition, since it would give each player access to the output of the entire industry.

mobiles and locations are significant largely for the threat they represent, and for the might that accrues to those who master them. The challenges underlying accomplishment often utilize the mechanisms of power. Even fellowship is affected by the *de facto* class system that power creates. Grouping, for instance, is feasible only amongst characters of like power³¹, and areas that high-level players frequent are often too dangerous for others to visit. What is the economic character of power?

Unlike other sources of play value, power is innately inexpensive. To add a power hierarchy to some game seems a simple design problem, perhaps complicating game balance (an aspect of play content), but otherwise incurring little cost. Nor is the allocation of power inherently costly; in this it resembles content, which is associated with play time by design rather than necessity. But what of its value?

3.3.1 RelativePower

Like accomplishment, power is measured by players in game-nominal terms such as character attributes, skills, and levels. But as with accomplishment, it seems unlikely that these quantities — which lack meaning or application outside the game — could form the basis of power's value. Where does this value originate?

Power's innate worth comes from the relationships it creates between players. As argued above, MMORPG combat is essentially a quantitative struggle, with the more quantitatively powerful combatant almost always winning. By extension, power's value comes not from absolute quantities, but from relative distinctions between peers. Immediately an economic problem is seen here. While developers strive to satisfy all player wants, any increase in one player's power necessarily decreases the relative power of another. For this reason, it is not possible to 'produce' relative power; it can only be allocated. Put differently, the quest for MMORPG power is a zero-sum game.

The nature of relative power presents another problem. Dominant players may enjoy the advantage they control, what of lesser players? Are they indifferent to their inferior status? Consider grieving: it is the overt goal of grievers to make other players unhappy, and their ability to do so is largely commensurate with their power. Conversely, it is the goal of some players to help others, an arrangement that presumably benefits both parties. So what externalities are associated with the enjoyment of power?

It is possible that the use of power exhibits few externalities. If this is true, then power distinctions offer a welfare gain to the player community. If externalities are present, it must be asked whether they are positive or negative on

balance, and whether their magnitude is great or small relative to their internal benefits. Unfortunately, there seems no *a priori* basis for answering these questions, and the welfare implications of power must remain unresolved. Since the cost of power allocation is so little, it should perhaps be unsurprising that its benefits are also questionable³².

3.3.2 Tuition

If its benefits are uncertain, why is power such an integral part of existing MMORPG? To answer this question, a new concept will be introduced. 'Tuition' will be defined as the total play time necessary to develop a maximally powerful character; typically this entails reaching some level or skill cap, and acquiring a set of high-quality equipment. Just as power is largely quantitative, its acquisition is quantitative and widely variable in its duration. Tuition is thus constrained only by the developer's wishes, and by changing just a few variables (experience point awards or requirements, loot drop probabilities, even movement rates), the same body of content can support a wide range of tuition values. Nor need tuition changes affect the player's experience of accomplishment, since this derives from the cost of play³³. Tuition is significant, rather, for determining the cost of power acquisition and content consumption.

3.3.3 Power and content

Players value content experience, particularly high-density experience, which economizes on their time. MMORPG contain large but decidedly finite amounts of content; what prevents players from quickly consuming this material, simultaneously increasing their content density and decreasing their subscription terms?

31. High-level players sometimes group with those of lower level, helping them defeat mobs ordinarily out of their reach. This activity is distinct, however, from ordinary grouping, as the stronger character has little to gain. It is more akin to charity.

32. Even aside from such arithmetic considerations, player interest in power may be less than overwhelming. In one study, a group of *EverQuest* players were presented with seven statements describing the appeal of that game, and asked to signify their agreement. The statements "I can explore a fantasy world", "I get satisfied from achieving goals", and "I enjoy social interactions" — corresponding arguably with content, accomplishment, and fellowship — generated the most agreement. The statement "I like feeling powerful" enjoyed the second-least agreement. (Yee 2001)

33. Nor, for that matter, need players limit themselves to prescribed notions of success. Though MMORPG define certain canonical paths for accomplishment (levels, items, quests), challenge and accomplishment are limited only by the player's desires. A classic example is the *Ultima Online* player who reportedly gathered 10,000 instances of the same shirt in their character's dwelling — an impressive, if unexpected accomplishment. (Simpson 1999)

As in the real world, activity in the game world is constrained by (seemingly) natural laws and by the whim or programming of its inhabitants. In MMORPG, these constraints utilize the mechanisms of power, with every area presenting some degree of threat or inconvenience according to the character's strength. The game can thus be seen as a continuum of power within which developers distribute content. This arrangement has several important effects on play.

First, players' access to content is determined by the nominal power of their characters. While areas requiring less power can be easily explored, their content is already familiar³⁴. Conversely, areas requiring more power are too dangerous to visit. These constraints have the effect of ordering the content experience. At a given level, only a portion of the game's content is both accessible and compelling, and this window of access moves in a predetermined manner as the character progresses.

Second, since nominal power determines content access, developers — by setting the rate at which power accrues — can limit content density. In other words, by controlling power acquisition, tuition determines content density.

Also interesting is the fact that, in existing games, items looted or manufactured by some character in a given time period are more powerful than those produced by less-powerful characters. This implies that the growth rate of nominal power itself grows as power accumulates³⁵. This has two important effects: it prevents large groups of low-level players from cooperating to consume high-level content, and it largely precludes cooperation between players who are dissimilar in level.

Since power enables content consumption, any significant transfer of power allows the recipient temporarily to increase their content density. Such transfers in fact are quite common, resulting from MMORPG institutions like 'twinking' (the donation by one player of money or powerful items to a lower-level peer), 'power leveling' (the practice of rapidly accruing experience, often through the assistance of a higher-level player), and — of course — asymmetric trade.

3.4 The scarcity of fellowship

Social interaction is a compelling and definitive part of MMORPG play. Players spend long hours in the game world working with and against each other, and during this time they accumulate friendships and other relationships which in turn shape their future play. These relationships are collectively described as 'fellowship'. Though its relevance to play *qua* play is tenuous, fellowship is highly

valued by players³⁶. What economic considerations attend fellowship?

Presumably, most people enjoy socializing with new acquaintances, and to the extent that this is true, even new players can enjoy the social aspects of MMORPG. But whatever the value of casual socializing, it seems likely that players gain much more from persistent relationships, whether friendly or competitive in nature. As these grow in number and depth, they provide opportunities for chance encounters, cooperation, and other interaction. Though such exchanges need not be (and in fact, are not) exclusively positive, their net benefit is positive both collectively and (for the most part) individually. Thus, as fellowship grows, so grows the value of play time.

3.4.1 Fellowship and play time

What costs are associated with fellowship? Friendship is awarded no more freely in game society than in the real world. Many MMORPG social institutions focus on combat, which can be challenging and dangerous for ambitious characters. As a result, these institutions require mutual trust and shared game knowledge to function. Naturally, players also bear preferences and prejudices which demand a mutual coincidence of sadly non-fungible wants.

For players to demonstrate their character, ability, or commitment requires interaction with other players. This need not occur solely within the game context, and some does take place outside it, particularly at the message boards associated with popular game sites. However, the best venue for fellowship creation is undoubtedly the game itself. Thus, like accomplishment, fellowship is created with play time, and its primary cost is the opportunity cost of that time³⁷.

Some may start the game with contacts to one or more established players, and others may enter as part of a group, as when a guild colonizes a new game. Such players start with an accumulation of fellowship, but given the large

34. Similarly, the power gains offered by such areas will be insignificant to higher-level characters.

35. Note that the power metrics used by players do not show this effect; if anything, their growth slows over time. These, however, are not necessarily linear measurements, nor does a single linear metric seem possible, since power derives from disparate statistics and mechanisms.

36. A survey of *EverQuest* players found that 61.9% describe in-game friendships as "comparable" or "better than" their real-world counterparts. (Yee 2001)

37. Arguably, some costs are also incurred by developers, who implement communication features and play mechanics to promote sociality. These seem small, however, relative to other content costs, and are quite small next to the millions of hours invested by players.

populations of MMORPG worlds, even they will find many opportunities for fellowship growth.

3.4.2 Fellowship and power

The developer seeks to maximize profits by increasing revenue and decreasing costs. Theoretically, play value is the basis of subscription revenue; however, accomplishment value derives from the player's time investment, content is expensive, and relative power cannot be produced, only allocated³⁸. How can developers increase revenue without greatly increasing costs?

One way is to promote the emergence of fellowship. Like accomplishment and power, fellowship incurs little cost for developers. Unlike power, however, there is no obvious limit to its quantity, nor would it seem to incur external costs. It is thus very much in the developer's interest to encourage fellowship. These considerations explain the importance of the core MMORPG social institution — grouping.

Grouping encourages fellowship growth by granting play advantages to those who participate. MMORPG allow (and often require) characters to specialize in their skills. Just as trade allows real-world actors to gain from comparative production advantages, grouping lets players exploit skill specialization. As a result, group members experience significant increases in their effective power, which leads to faster power growth and increased content density. Similarly, some areas are too dangerous for even the strongest characters to visit alone; grouping is thus the only way to experience such content.

These advantages are no accident; the classes and skills in existing MMORPG are clearly designed to complement each other. This poses a question, however: players presumably understand the value of fellowship (it benefits them most directly), so why should developers need to subsidize its creation?

An answer is suggested by the contextual nature of this good. To the extent that fellowship transcends the game world, players can enjoy it regardless of how much or even whether they play. Presumably, however, casual relationships will not exceed those bounds to any meaningful extent. More serious relationships may do so, but they are just as likely to anchor players, tying them to games they would otherwise quit, or drawing them back to games they have already left. In general, fellowship seems almost inextricable from its place of origin. Thus, though grouping exhausts content more quickly, it produces another good that (from the developer's perspective) serves the same purpose: to retain player subscriptions³⁹.

4 Conclusions

Four sources of MMORPG play value have been described. To summarize:

The value of accomplishment derives ultimately from play time; as such, it is costly for players and inexpensive for developers.

The production of content is costly for developers, but its consumption — like that of any non-rivalrous good — is inexpensive. Though it does not dissipate with use, its value to individual players decreases with familiarity. Developers associate content access with power.

While its allocation is not inherently costly, developers choose to award power in exchange for play time. Relative power is innately valuable, but limited in quantity; it may also incur external costs. Nominal power lacks innate worth, but developers grant content access to those who possess it.

Fellowship is produced with play time, and is thus costly for players and inexpensive for developers.

4.1 The problem of abundance

With these considerations in mind, what can be said about the value of game goods? There are many reasons a player might desire some item. The intention here, however, as throughout this work, is to identify motives that are 'definitive' with respect to MMORPG design. When viewed from this perspective, two factors stand out.

Characters and items are the mechanism by which developers allocate power; thus power is, unsurprisingly, an important part of their appeal. Power, in turn, grants access to content. While accomplishment complements the production of game goods, it adds nothing to their value, being neither alienable nor persistent as goods are. Nor is fellowship implicated. It seems that players value game goods

38. Not to mention that limiting access to power is the developer's only means of controlling content consumption.

39. This argument remains somewhat unsatisfying, or at least incomplete. If players can build fellowship while pursuing other types of play value, why would they ever choose not to? Why should it be necessary to 'encourage' grouping? Two possibilities suggest themselves. One is that fellowship production incurs some cost beyond mere play time; it perhaps entails more work for players, or adds social risks, such as the possibility of rejection. This idea is supported by the fact that grouping, though strongly encouraged, remains optional in existing MMORPG. Another possibility (or certainty, according to one's perspective) is that players are imperfectly rational. If fellowship production constitutes a form of investment, then the sort of myopia that many believe afflicts economic actors may apply here as well.

primarily as manifestations of power and tools for extracting content⁴⁰.

Since the production of game goods costs players time, their gross production cost is the opportunity cost of that time. Yet play time confers more than just game wealth; it also generates accomplishment and fellowship. The net cost of game production is therefore the cost of play time, less the value of accomplishment and fellowship.

It is now possible to solve the ‘problem of abundance’. As argued above, accomplishment obtains from play time, content from the effort of developers, and power and fellowship from player relationships; all game value, in fact, derives ultimately from real-world sources. Similarly, the constraints that affect players’ pursuit of game value are manifestations of real-world economic constraints: accomplishment and fellowship are limited by player time budgets, content consumption and power acquisition by the developer’s recognition of their inevitable scarcity.

At no point has nominal game wealth been shown to create real value. This suggests that the ‘problem of abundance’ is really a misunderstanding about the source of play value. In fact, game goods are merely tokens for various types of real-world value⁴¹. It is thus unnecessary to make the un-intuitive claim that constraints somehow create utility in games. In fact, constraints limit utility, as always⁴². Scarcity within the game world is merely the developer’s means of controlling the distribution of scarce real-world assets — and thereby profiting from it.

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40. Goods are also, to some extent, examples of content, but this distinction seems unimportant.

41. The developer’s fiat power can be likened to a government’s ability to create fiat currency. Though a nation can increase its money supply arbitrarily, it has little control over the real value its currency represents. Similarly, increasing the nominal amount of wealth in some game can do nothing in the long run to increase player value; it can only prompt an off-setting adjustment in players’ valuation of that wealth (and — in keeping with the monetary analogy — provoke an outcry from the ‘money holders’ of the game world — high-level players).

42. After all, who would not enjoy being the most powerful and accomplished player in some game? And with the developer’s complicity, such a world is possible — but only at the expense of other subscribers. While many players enjoy difficult challenges, they surely do so with the hope of overcoming — and thus transcending — the constraints that challenges present. Players may value the constraint of others, but they can hardly wish to be constrained themselves.