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Napster's Second Life? - The Regulatory Challenges of Virtual Worlds

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Napster's Second Life?

The Regulatory Challenges of Virtual Worlds⁺

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Imagine a world with millions of people communicating and transacting. Imagine a world just like ours except that it is made entirely of bits, not atoms.

Ten years ago, John Perry Barlow imagined such a radical world – cyberspace.¹ He saw people interacting without the constraints of national rules. They would be independent from regulatory fiat and unbound by the mandates of Washington, Paris, London, Berlin or Beijing. His vision relied on information traveling a global network at lightning speed, with content living off server farms in nations with little regulation, weak enforcement, or both. In this world of global regulatory arbitrage², organizations could relocate their servers to jurisdictional safe havens overnight.³ They might pop up in exotic places like Aruba⁴ or

⁺ We thank Urs Gasser, Raph Koster, David Lazer, Beth Noveck, Cory Ondrejka, and John Palfrey, who have read the manuscript and provided most valuable feedback. We gratefully acknowledge the research assistance of Malte Ziewitz.

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¹ John Perry Barlow, *A Cyberspace Independence Declaration*, <http://www.eff.org/barlow> (last visited Feb. 10, 2005) (“Governments of the Industrial World, you weary giants of flesh and steel, I come from Cyberspace, the new home of the Mind [...]. You have no sovereignty where we gather.”).

² See A. Michael Froomkin, *The Internet as a Source of Regulatory Arbitrage*, in BORDERS IN CYBERSPACE 129 (Brian Kahin & Charles Nesson eds. 1997); Viktor Mayer-Schönberger & Terece E. Foster, *A Regulatory Web: Free Speech and the Global Information Infrastructure*, 3 MICH. TELECOMM. & TECH. L. REV. 45, 56 (1997); Joel Trachtman, *Cyberspace, Sovereignty, Jurisdiction, and Modernism*, 5 IND. J. GLOBAL LEG. STUD. 561 (1998); but see Dan L. Burk, *Virtual Exit in the Global Information Economy*, 73 CHI.-KENT. L. REV. 943, 961-72 (1998); Viktor Mayer-Schönberger, *The Shape of Governance: Analyzing the World of Internet Regulation*, 43 VA. J. INT'L L. 605, 617 (2003).

³ With increasing pressure on online gambling operators in the U. S., for example, companies have moved to foreign tax and data havens, see, e.g., Matt Richtel, *Companies Aiding Internet Gambling Feel U.S. Pressure*, N.Y. TIMES, March 15, 2004, at section A, column 1, national desk, p. 1. See generally Michael Anastasio, *The Enforceability of Internet Gambling Debts: Laws, Policies, and Causes of Action*, 6 VA. J.L. & TECH. 6 (2001); Joseph M. Kelly, *Internet Gambling Law*, 26 WM. MITCHELL L. REV. 117 (2000); Beau Thompson, *Internet Gambling*, 2 N.C. J.L. & TECH. 81 (2001).

⁴ In 1999, Antelecom installed 2 submarine fiber optic cable systems to Aruba: PANAM (1x2.5 Gb/s), which connected the island with St. Thomas (USVI), Panama, and Venezuela; and *Alonso de Ojeda* (2x2.5Gb/s), which connected Aruba with Curaçao. For technical details about of the submarine fiber optic cables to Aruba, see the International Cable Protection Committee's timeline of cables in the Caribbean at <http://www.iscpc.org/cabledb/caribbean.htm> (last visited September 19, 2005). In 1999, Antelecom N.V. merged with Setel N.V. Curaçao in to become United Telecommunications Services (UTS). See <http://www.uts.an/company/organization.htm> (last visited September 19, 2005).

Costa Rica⁵, or places outside any jurisdictional reach, like the vacated *Sealand*-like⁶ oilrigs of the North Sea⁷ or even space.⁸

Barlow was not alone; others, too, had hoped – or feared – that his vision would turn into reality.⁹ He and his compatriots were heavily criticized, even ridiculed.¹⁰ Humans (it was argued¹¹) cannot escape their physical presence. We shall always remain in the real world, because this is where our online actions have consequences. It is where the products that we purchase online get delivered to our doors. Where the membership fees we pay for an online service get charged to our credit cards. Where the money that we deposit in PayPal is debited from our bank accounts, and where our account balances are only replenished by the toil of our working lives. To these critics, Barlow’s vision of life in cyberspace was an incomplete

⁵ For example, although the Costa Rican-based internet gambling site *BetonSports.com* is not allowed to do business in the United States, it has 1.2 million registered customers there, which accounted for 98% of its revenue in 2003, *American Citizens Want To Gamble On The Internet*, BUS. WK., December 20, 2004, at 67.

⁶ In 1967 Roy Bates, a retired British army major, occupied an abandoned World War II island fortress six miles off the English coast and declared it a sovereign nation, the Principality of Sealand. The former flak platform hosts a firm called HavenCo, which operates a data center, providing server space out of reach of national law enforcement agencies. See Frank Arenas, *Cyberspace Jurisdiction and the Implications of Sealand*, 99 IOWA L. REV. 1165, 1167 (2003) for a history and analysis of the case of Sealand. The official website of the government of Sealand can be found at <http://www.sealandgov.com/> (last visited June 1, 2005).

⁷ See, e.g., John Markoff, *Rebel Outpost on the Fringes of Cyberspace*, N.Y. TIMES, June 4, 2000, at section 1, p. 14, column 1; Simson Garfinkel, *Welcome to Sealand. Now Bugger Off*, WIRED, issue 8.07, July 2000, available at http://www.wired.com/wired/archive/8.07/haven.html?pg=1&topic=&topic_set=> (last visited May 27, 2005).

⁸ See Alex Markels, *The Next Wave*, WIRED, issue 9.04, April 2001, available at http://www.wired.com/wired/archive/9.04/sealaunch.html?pg=1&topic=&topic_set= (last visited May 27, 2005) (mentioning the SeaLaunch consortium, which installs satellite-based streaming distribution networks that will hop over the internet’s backbone and transmit content directly to the last-mile providers or even bypass the internet completely).

⁹ David R. Johnson & David Post, *Law and Borders – The Rise of Law in Cyberspace*, 48 STAN. L. REV. 1367 (1996) are most frequently cited.

¹⁰ Jack L. Goldsmith, *Against Cyberanarchy*, 65 U. CHI. L. REV. 1199 (1998); Timothy S. Wu, *Cyberspace Sovereignty? The Internet and the International System*, 10 HARV. J. L. TECH. 647 (1997); Andrew L. Shapiro called it “cyber-romanticism at its worst”, Alan Shapiro, *The Disappearance of Cyberspace and the Rise of Code*, 8 SETON HALL CONST. L.J. 703, 709 (1998); Charles Fried, *Perfect Freedom or Perfect Control?*, 114 HARV. L. REV. 606, 618 (2000) calls the “cyberspace metaphor” “hyperbolic, if not somewhat fatuous”.

¹¹ See GOLDSMITH, *supra* note 10, at 1215-16 (arguing that “[c]yberspace is not, as the skeptics often assume, a self-enclosed regime”); Jack L. Goldsmith, *The Internet and the Abiding Significance of Territorial Sovereignty*, 5 IND. J. GLOBAL LEG. STUD. 475, 476 (1998) (stating that “[t]he Internet is not as many suggest, a separate place removed from our world”); SHAPIRO, *supra* note 10, at 709 (stating that the notion of cyberspace as a separate place is “cyber-romanticism at its worst”); LAWRENCE LESSIG, *CODE, AND OTHER LAWS OF CYBERSPACE* 21 (1999) (“You are never *just* in cyberspace; you never *just go* there. You are always both in real space and in cyberspace at the same time.”) (emphasis in original).

version of what life really is. So long as the online world remained tethered to the real world, jurisdictions would be able to enforce their rules – through cooperation with other jurisdictions¹², unilateral enforcement¹³, or the regulation of supporting infrastructures like international financial networks¹⁴. And Barlow's vision should remain just that: a vision.

¹² A prominent attempt to codify international cooperation is the Council of Europe's Convention on Cybercrime, which aims at harmonizing cybercrime laws internationally and stipulates procedural mechanisms for mutual assistance in the prosecution of cyber criminals. See Council of Europe, *Convention on Cybercrime*, Budapest, Nov. 23, 2001, available at <http://conventions.coe.int/Treaty/en/Treaties/Html/185.htm> ("The member States of the Council of Europe and the other States signatory hereto, . . . Believing that an effective fight against cybercrime requires increased, rapid and well-functioning international co-operation in criminal matters"). See also Marc D. Goodman & Susan W. Brenner, *The Emerging Consensus on Criminal Conduct in Cyberspace*, UCLA J.L. & TECH. 3 (2002); Amalie M. Weber, *The Council of Europe's Convention on Cybercrime*, 18 BERKELEY TECH. L.J. 425 (2003); Shannon L. Hopkins, *Cybercrime Convention: A Positive Beginning to a Long Road Ahead*, 2 HIGH TECH. L.J. 101 (2003); Mike Keyser, *The Council of Europe Convention on Cybercrime*, 12 J. TRANSNAT'L L. & POL'Y 287 (2003). See also the agreement among the G-8 to battle cybercrimes and cyberterrorism, *Final Communiqué*, G-8 Summit 2001, Genoa, July 22, 2001, available at <http://www.g7.utoronto.ca/g7/summit/2001genoa/finalcommunique.html> (last visited June 2, 2005) ("We encourage further progress in the field of judicial co-operation and law enforcement, and in fighting corruption, cyber-crime, online child pornography, as well as trafficking in human beings."); *Communiqué*, Conference of the G8 Ministers of Justice and the Interior, Milan, February 26-27, 2001, available at <http://www.g7.utoronto.ca/g7/adhoc/justice2001.htm> (last visited June 2, 2005) ("encouraging the Group of Anti-terrorism Experts rapidly to achieve further results, with particular emphasis [sic] on the operational problems connected with cyber-terrorism and on the analysis of potentially high-risk international developments and "action against high-tech crime, including use of the Internet in child pornography"); *Final Communiqué*, G-8 Summit 2000, Okinawa, July 23, 2000, available at <http://www.g7.utoronto.ca/g7/summit/2000okinawa/finalcom.htm> (last visited June 2, 2005) ("We must take a concerted approach to high-tech crime, such as cyber-crime, which could seriously threaten security and confidence in the global information society."). International standardization organizations provide another example, especially when they work with national government agencies. On their role, see Stanley M. Besen & Joseph Farrell, *The Role of the ITU in Standardization: Pre-eminence, Impotence or Rubber Stamp*, 15 TELECOMM. POL'Y 311 (1991); Krishna Jayakar, *Globalization and the Legitimacy of International Telecommunications Standard-Setting Organizations*, 5 IND. J. GLOBAL LEG. STUD. 711 (1998).

¹³ Such an extreme approach of extending state governance beyond traditional borders is epitomized by recent cases regarding the use of trademarks for domain names. Normally, two companies trademark the same name in different states, but litigate over trademark infringement if one company sets up a website which is also accessible in the other company's state. See, e.g., *Minnesota Mining & Mfg. Co. v. Taylor*, 21 F. Supp. 2d 1003, 1005 (D. Minn. 1998) (granting preliminary injunction against defendant's use of post-it.com, post-its.com, and ipostit.com, reasoning that such use would likely dilute plaintiff's Post-it mark); *Zippo Mfg. Co. v. Zippo Dot Com, Inc.*, 952 F. Supp. 1119, 1121 (W.D. Pa. 1997) (plaintiff manufacturer of Zippo tobacco lighters alleging trademark dilution, infringement, and false designation against online computer news service for use of domain names zippo.com, zippo.net, and zipponews.com.); *Toys'R'Us, Inc. v. Akkaoui*, 40 U.S.P.Q.2d (BNA) 1836, 1843 (N.D. Cal. 1996) (granting preliminary injunction against "adultsrus.com or any other colorable imitation of plaintiff's mark for Internet sites and reasoning that use of such domain names tarnishes plaintiff's Toys'R'Us and Kids'R'Us trademarks). See also James H. Aiken, *The Jurisdiction of Trademark and Copyright Infringement on the Internet*, 48 MERCER L. REV. 1331 (1997) (arguing for a broad scope of jurisdiction); Deborah Bailey-Wells, *Internet Jurisdiction and Liability: Issues for Copyright & Trademark Cases*, in GLOBAL TRADEMARK AND COPYRIGHT: PROTECTING INTELLECTUAL PROPERTY RIGHTS IN THE INTERNATIONAL MARKETPLACE (Practising Law Institute ed., 1997); Ian C. Ballon, *Rethinking Cyberspace Jurisdiction in Intellectual Property Disputes*, 21 U. PA. J. INT'L ECON. L. 481 (2000) (examining the very extensive jurisdictional reach of the

Imagine a world in which Barlow's vision became real. Imagine a world in which people interact, buy products, sell their services, maintain relationships, and actively engage in their community with little linkage to the physical world. Imagine a place where one could create a new identity whenever the old persona grew tiresome. Where one could exploit weaknesses in the underlying software architecture to create opportunities for arbitrage. Where one could cause monetary spill-overs into our real world. And imagine a world in which attempts to subjugate it to the real world's rule of law would ultimately be in vain.

In this world, real world lawmakers would discover to their horror that applying the very same strategies that had worked so well in countering Barlow's vision would have the exact opposite effect: instead of undermining, compromising and crumbling the new world and reducing this Barlow vision redux to its constituent digital bits, the force of traditional law would only exacerbate, facilitate and accelerate cyberspace's realization. Imagine a world in

Anticybersquatting Consumer Protection Act); Jane C. Ginsburg, *Copyright Without Borders? Choice of Forum and Choice of Law for Copyright Infringement in Cyberspace*, 15 CARDOZO ARTS & ENT. L.J. 153 (1997) (suggesting that if a suitable link can be established, jurisdiction in the United States should be assumed, even if actual copyright infringement happens abroad); Lea Hall, *The Evolving Law of Personal Jurisdiction for Trademark Infringement on the Internet*, 66 MISS. L.J. 457 (1996). Similar cases can be found in the area of internet gambling. For example, the Minnesota attorney general filed suit against a Belizean internet gaming operator, although the activity was perfectly legal there, see *Minnesota v. Granite Gate Resorts, Inc.*, 568 N.W.2d 715 (Minn. Ct. App. 1997). See also *United States v. McDonough*, 835 F.2d 1103, 1104-05 (5th Cir. 1988) (rejecting defendant's argument that the Wire Act did not apply to him because gambling information had been transmitted to him in Massachusetts, and there were apparently no laws in Massachusetts that explicitly forbade the transmission of wagers into the state, and instead holding that although O1084(b) permits the transmission of gambling-related information when gambling is explicitly authorized in both the sending and receiving states, it was never intended to authorize gambling when only one of the two locales permits gambling); *State v. Fiola*, 576 A.2d 338, 340 (N.J. Super. Ct. App. Div. 1990) (holding that the defendants' business constituted gambling activity within the state of New Jersey and thus violated the state's gambling laws, since the New Jersey Constitution prohibits any type of gambling unless the constitution has been amended to explicitly permit the specific type of gambling); *People v. Kim*, 585 N.Y.S.2d 310, 312 (Crim. Ct. 1992) (holding that the use of a computer system to transmit orders for out-of-state lottery tickets was illegal since "all forms of gambling are illegal in New York except those expressly authorized by the New York Constitution"); *Scherr v. Abrahams*, 1998 WL 299678 (N.D. Ill.) (denying jurisdiction although the defendant's website allowed users to contact him via e-mail, and he sent his publication to users via e-mail). See generally GOLDSMITH, *supra* note 10, at 1208 ; Cynthia R. Janower, *Gambling on the Internet*, 2 J. COMPUTER-MEDIATED COMM. (1996), available at <http://www.ascusc.org/jcmc/vol2/issue2/janower.html> (last visited May. 27, 2005).

¹⁴ For example, the Unlawful Internet Gambling Funding Prohibition Act proposed in 2003 required financial institutions to take steps to identify and block gambling-related transactions that are transmitted through their payment systems, see H.R. 21, 108th Cong. (2003). See also Mark D. Schopper, *Internet Gambling, Electronic Cash & Money Laundering: The Unintended Consequences of a Monetary Control Scheme*, 5 CHAP. L. REV. 303 (2002).

which whatever methods regulators used – save shutting down the global network – the greater the impetus they put into their actions, the faster and more spectacularly they would fail.

Most importantly, imagine this process happening not because of some inescapable laws of technological progress that are impressing their will on society, but because of the more human, and less escapable laws of economics. Imagine a market of dozens of competing virtual worlds, where the forces of supply and demand drive us towards a world of human interaction, of commerce and transaction. Imagine each of these worlds creating a simulacrum of the real world, except for one crucial shared omission in their designs: national laws as we know them would not exist.

Imagine – no more.

In this article, we examine the phenomenon of virtual worlds like Lineage, EverQuest and Second Life, and use law and economics to plot a probable trajectory for how the real-world legal system will interact with these worlds. We argue that virtual worlds – as commercial enterprises – must vie for users, leading them to engage in regulatory competition with each other by offering effective (“good”) governance as well as (intellectual) property rights to users. This dynamic is already visible in the marketplace. Such a strategy, however, will also make users more mobile and thereby accelerate competition among virtual worlds. In parallel, and fueled by a surge of people participating in virtual worlds, we argue that real world law makers will wish to extend the reach of national legal frameworks into virtual worlds. Inspired by how Napster was reigned in, this extension of reach may come through national regulation of virtual world providers. Such a move, however, is likely to backfire. Not only will this increase competition among virtual world providers operating in different jurisdictions (and thereby cause second-order regulatory competition), but it will also push virtual worlds along a path similar to the one along which the fight against Napster pushed music sharing – towards a decentralized peer-to-peer model, in which providers themselves disappear, and with them almost any hope of real world lawmakers to directly influence the

governance inside virtual worlds.¹⁵ As a result, law as we know it – territorially bounded and democratically legitimized – could vanish altogether from online interaction and be replaced by a new set of rules (leading one to conclude that John Perry Barlow might have a point after all, albeit much differently than he thought). As an alternative to this dystopian ending, we suggest national lawmakers ought to facilitate the creation of robust self-governance structures within virtual worlds rather than “napsterizing” virtual world providers.

One important disclaimer is in order. In mapping out this future trajectory, we base our analysis on an economic understanding of regulatory frameworks, and emphasize the role of economic forces in this regulatory dynamic. Because virtual world providers are commercial enterprises, we believe economic forces will retain central importance in how virtual world providers as regulators behave. We do not pretend, however, that an economic analysis is the only possible one and encourage others to add to the growing literature on the subject.

Each of the following section presents a particular vector of analysis. In part I, we describe virtual worlds, including their growth, size and likely trajectory. In part II, we examine governance within virtual worlds. Part III describes the economics among virtual worlds. Part IV lays out the consequences for regulatory frameworks within virtual worlds stemming from virtual world economics. Finally, Part V suggests options for real world lawmakers who are intent on regulating virtual worlds.

Part I: Virtual Worlds

What exactly are virtual worlds? They are sophisticated pieces of software that enable their users to project an identity into a generated three-dimensional reality through the use of

¹⁵ See, e.g., Gartner G2 & The Berkman Center for Internet and Society, *Copyright and Digital Media in a Post-Napster World - Version 2*, January 2005, <http://cyber.law.harvard.edu/media/files/wp2005.pdf> (last visited June 8, 2005); Mathias Strasser, *Beyond Napster: How the Law Might Respond to a Changing Internet Architecture*, 28 N. KY. L. REV. 660 (2001) (examining the potential impact of Napster on the copyright law system); Seagrump Smith, *From Napster to Kazaa: The Battle Over Peer-to-Peer Filesharing Goes International*, DUKE L. & TECH. REV. 8 (2003). See also Yochai Benkler, *Coase's Penguin, or, Linux and The Nature of the Firm*, 112 YALE L.J. 369 (2002) (discussing the broader economic implications of peer production).

advanced computer graphics and – through the eyes of this digital persona or *avatar* – interact with other players and wander through this generated reality.¹⁶

For example, a short overweight female teenager can become a tall 20-something with a triathlete's body. She can decide if that lithe Olympian is a man or woman – or even of the same race as her own.¹⁷ When she enters a virtual world, she experiences a three-dimensional realm from the first-person perspective her Olympian avatar. And she shares this experience with thousands of other simultaneous players, who are looking through the eyes of their own avatars, interacting with their *own* perceptions of the teenager's created identity and sharing with her their own thoughts by means of their own customized gestures and words.

Inevitably, friendships emerge between geographically separate but intellectually proximate minds.¹⁸ For them the virtual world is a place where they can congregate and share a conversation, or where they can aggregate into a group and tackle a major project, like building a virtual house, starting a virtual company, or organizing a rally to support a political candidate in the virtual world.

Subscriptions to virtual worlds are skyrocketing: recent estimates indicate that total worldwide subscriptions to the 32 major virtual worlds may be as high as 9.4 million people, following an exponential growth curve since the genre's beginnings in 1997.¹⁹ One Korean game called *Lineage* may account for nearly 4.1 million of those subscribers, although the

¹⁶ For a summary of the rise of virtual worlds, see Beth Simone Noveck, *The State of Play*, 49 N.Y.L. SCH. L. REV. 1, 6-11 (2004/2005).

¹⁷ Based on studies of cross-presenting characters, men often present as women, and most of the female-presenting characters are actually men. See, e.g., Pavel Curtis, *Mudding: Social Phenomena in Text-Based Virtual Realities*, Proceedings of the 1992 Conference on the Directions and Implications of Advanced Computing, <<http://citeseer.csail.mit.edu/curtis92mudding.html>> (last visited June 2, 2005); HOWARD RHEINGOLD, THE VIRTUAL COMMUNITY – HOMESTEADING ON THE ELECTRONIC FRONTIER 150-2 (2000). See also, Wagner James Au, *White Like Me*, New World Notes (October 23, 2003) <http://secondlife.com/notes/2003_10_20_archive.php#20031024> (last visited September 11, 2005), for an example of how an African-American woman presents as a Caucasian avatar.

¹⁸ See RAY OLDENBURG, THE GREAT GOOD PLACE: CAFÉS, COFFEE SHOPS, COMMUNITY CENTERS, BEAUTY PARLORS, GENERAL STORES, BARS, HANGOUTS AND HOW THEY GET YOU THROUGH THE DAY (1989).

¹⁹ See Bruce Sterling Woodcock, *An Analysis of MMOG Subscription Growth - Version 17.0*, <http://mmogchart.com/Subscriptions.xls> (last visited September 11, 2005), at sheet 5.

numbers may include overlap, as some subscribers may be playing in both versions 1 and 2 of the world.²⁰ Within North America and Europe, another eleven worlds account for nearly 4.9 million people:

Virtual World	Subscriber Headcount
World of Warcraft	2,000,000
Final Fantasy XI	650,000
EverQuest	454,000
RuneScape	379,000
Ragnarok Online (JP)	300,000
EverQuest II	278,000
Star Wars Galaxies	255,000
Dark Age of Camelot	175,000
Ultima Online	157,000
City of Heroes	140,481
Toontown Online	100,000
Total	4,888,481

Studies by anthropologist Nick Yee indicate that these subscribers are spending an average of 22.71 hours per week in these worlds, with over 11% spending a full workweek (30-40 hours) developing their online characters, and between 8-10% spending more than 40 hours per week (8.4% of males and 10.4% of females).²¹ Assuming just average contact time among these 9.4 million people, subscribers to virtual worlds could be devoting over 213 million hours *per week* to building their virtual lives.

This impressive success, however, did not develop overnight. To understand why virtual worlds are so popular, and why so many people are spending so much of their waking lives in these worlds, one must realize that virtual worlds did not emerge whole cloth in the late 1990s; they are actually as old as the first networked computers. They were the byproduct of work-based collaborations on early timesharing systems. Initially, these early worlds were

²⁰ Nick Yee, *The Daedalus Project – Hours of Play per Week*, <http://nickyee.com/daedalus/archives/000758.php> (last visited May 28, 2005).

²¹ Nick Yee, *supra* note 20.

little more than multiplayer arcade games: users had to start afresh on each load of the game into a computer. Because many of the builders of virtual worlds were fascinated with offline role-playing games – in which they could build persona over months and sometimes years of game-play – they perceived of this lack of persistence between games as a serious problem. But it was not until 1978, when two undergraduates at the University of Essex, Roy Trubshaw and Richard Bartle, applied early database technology to the development of an adventure world called MUD1, that communities of users could build on their successes in previous game sessions. Their world was an instance success. When Trubshaw and Bartle connected MUD1 to the nascent Internet in 1979, the first multiplayer Internet-based role-playing game spread so quickly (and consumed so much bandwidth and computing resources) that many network administrators had to ban any MUD activity.²²

Despite the popularity of MUDs, participants in these worlds felt another restriction: they had no power to shape their shared space. They could acquire objects and dispose of them, but they could not craft their own objects, nor could they shape the structure of the society that were building. The power of malleability was a privilege granted only to the elite administrators of the game.

This situation soon changed. In 1988, a graduate student at Carnegie Mellon University, James Aspnes decided to craft a MUD with no aim beyond social interaction, with the goal of being “up and running in a week of coding and last[ing] for a month before everybody got bored of it.”²³ To make it more attractive to users, he added a way to allow users to craft their own simple objects and add virtual rooms, with all building activity regulated by a simple monetary system. In so doing, Aspnes replaced one adventure with another: the

²² An urban legend once held that Australia banned MUDs across the continent. See RHEINGOLD, *supra* note 17, at 168-9. However Elizabeth Reid dispelled this rumor, clarifying that the bannings occurred across many university and commercial networks. See *Are MUDs Banned in Australia?*, in COMPUTER-MEDIATED COMM. (1994), available at <http://www.ibiblio.org/cmc/mag/1994/aug/muds.html> (last visited September 11, 2005).

²³ See Lauren P. Burka, *A Hypertext History of Multi-User Dimensions, 1993*, in THE MUDDDEX, <http://www.linnaean.org/~lpb/muddex/essay/> (last accessed September 19, 2005).

original task of exploring a prefabricated virtual world was replaced by the continual renewal and expansion of the social spheres that exist within a constantly changing user base.²⁴

In 1990, Pavel Curtis at the famed Xerox PARC took Aspnes's idea and extended it inside his own more scalable creation, which he named LambdaMOO.²⁵ Every player who earned Curtis' trust was granted the power to create their own objects and extend the virtual space. Instead of wandering through a maze of the game designer's imagination, they were crafting it themselves. Thousands of new places emerged and the virtual world expanded to include thousands of users, with hundreds logged on simultaneously.²⁶

Although these virtual worlds expanded to include as many as 30,000 users, they never hit the mainstream.²⁷ For all the power they gave to the users to shape their own experiences, their text-based realities left a great deal to the imagination. They were models, they were proxies, but they were not true simulacra. However, these worlds had laid the foundation for future designs: they showed that the power of virtual worlds derives directly from their success as simulacra of familiar realities and from their concomitant success at solving four fundamental problems:

(1) **Persistence:** the creation of a shared virtual space that enables participants to return after an arbitrary time offline, enabling users to shape their online activities into long-term projects. Importantly, persistence also enables the world to evolve in the absence of its participants. For example, buildings constantly age and require maintenance, and virtual food spoils.

²⁴ RHEINGOLD, *supra* note 17, at 167-8.

²⁵ See Pavel Curtis, *Not Just a Game: How LambdaMOO Came to Exist and What it Did to Get Back at Me*, in HIGH WIRED: ON THE DESIGN, USE, AND THEORY OF EDUCATIONAL MOOS 25-44 (Cynthia Haynes & Jan Rune Holmevik eds., 1998).

²⁶ See Pavel Curtis, *The Incredible Tale of LambdaMOO*, June 19, 2002, http://www.g4tv.com/techtv/vault/features/38666/The_Incredible_Tale_of_LambdaMOO_pg4.html (last visited May 31, 2005).

²⁷ Pavel Curtis estimates the number of MUD players at 20,000 in 1992, see Curtis, *supra* note 17, at 17.

(2) **Teleology:** Orienting the lives of avatars around some *telos* or end, usually either the pursuit and completion of concrete tasks or the user-driven construction of a society that models the real world or an established fantasy (such as Star Wars).²⁸

(3) **Malleability:** Giving participants the ability to modify the world, usually by granting them rights to add objects from a supplied set of raw materials. Malleability delegates some of the responsibility for creating both content and the overall narrative to the users, allowing the world designer to focus on building ever better simulacra (as opposed to getting caught in the operations of the virtual world).²⁹

(4) **Verisimilitude:** Creating an immersive experience sufficiently resembling reality as to enable users to “see” themselves inside the virtual world, traveling through its three-dimensional spaces, even (or particularly) those users who lack the verbal skill to realize words into three-dimensional spaces.³⁰

The first software that moved beyond the confines of text-based virtual worlds and made a full-fledged attempt at meeting all four of these criteria dates from 1983, when Chip Morningstar and F. Randall Farmer started wondering how to make virtual worlds commercially viable and how to use the emerging craze in personal computers to enable graphical rendering of what had previously been text-only worlds. By 1985, these two programmers had built a prototype called *Habitat* using a popular, inexpensive platform, the Commodore 64 and the 300-baud modems of the day.³¹ However, their success was limited by the extremely narrow bandwidth and low processing power of graphics chips and CPUs, as well as a per-hour based pricing model.³² *Habitat* was ahead of its time. It failed because of

²⁸ RHEINGOLD, *supra* note 17, at 149-80..

²⁹ See RHEINGOLD, *supra* note 17, at 158.

³⁰ See SHERRY TURKLE, *LIFE ON THE SCREEN: IDENTITY IN THE AGE OF THE INTERNET* (1997).

³¹ Chip Morningstar & F. Randall Farmer, *The Lessons of Lucasfilm's Habitat*, in *FIRST STEPS* (Michael Benedikt ed., 1991), available at <http://www.fudco.com/chip/lessons.html> (last visited May 28, 2005).

³² “Until Meridian 59 launched in 1996 and UO launched in September of 1997 with flat monthly rates, billing for commercial MMOGs was mainly on a per minute/hourly basis (with a brief period of free access to AOL’s games from 12/96 to about 7/97). Thus, the number of total subscribers was less important than how long you kept your hard core players (the top 10%) in game.” Jessica Mulligan, cited in Raph Koster, *Online World Timeline*, <http://www.legendmud.org/raph/gaming/mudtimeline.html> (last visited May 28, 2005).

the lack of affordable technology and bandwidth as well as for its per-minute pricing model that offered participants little incentive to dwell.

By 1996, two virtual worlds had completely changed the landscape of virtual worlds when they used still growing commercial Internet to connect participants to their worlds. The first and smaller company Archetype Interactive released *Meridian 59*, which offered impressive immersive graphics, but is principally remembered for changing the pricing model from a usage-based fee to a monthly flat fee.³³ *Ultima Online*, the more successful of the two, eclipsed *Meridian 59* by harnessing the user base of its popular single-player product, eventually building a base of 240,000 subscribers by April 2001.³⁴

But *Ultima's* success pales in comparison to a Korean game called *Lineage*, which capitalized on the highly computer literate, wired, and demographically dense populace of Korea. *Lineage* not only offered a three-dimensional world, but also modeled the in-game political structures on the kinship ties of its native Korea. Seventeen months after *Lineage* launched in August 1998, it had enrolled one million users, perhaps only limited to the Korean-speaking world by its use of the Korean language.³⁵ Shortly after *Lineage*, Sony and Microsoft each entered their own products into the marketplace. Sony Online's *EverQuest* and Microsoft's *Asheron's Call* and games such as *Final Fantasy IX* all subscribed more than 100,000 users, with *EverQuest* and *Final Fantasy* themselves each hitting 500,000 by 2004.³⁶

For all their success, the commercially-successful members of this generation of graphical, commercial virtual worlds shared one significant drawback: like early text-based virtual spaces, all participants remained in the designer's world, without means of crafting their own objects or augmenting their experiences. In this sense, they had not advanced to become

³³ See Steven L. Kent, *Alternate Reality. The History of Massively Multiplayer Online Games*, Sept. 23, 2003, <http://archive.gamespy.com/amdmmog/week1/> (last visited May 28, 2005), p. 2.

³⁴ Woodcock, *supra* note 19.

³⁵ Woodcock, *supra* note 19; Kent, *supra* note 33, p. 3.

³⁶ Woodcock, *supra* note 19.

three-dimensional analogues to the text-based LambdaMOO.³⁷ A San Francisco-based company would soon address this shortcoming.

When Linden Lab released *Second Life* in 2003, it modeled a world with a cosmology that is very similar to modern Earth, complete with modern clothing, buildings, vehicles, and opportunities for starting online businesses.³⁸ *Second Life* accurately simulates the laws of real-world physics in virtual space. Flags move in the wind. When a character lets go of a virtual object, it will drop to the floor. Linden Lab gave its users a scripting language and an integrated development environment for building new objects. Users could assemble pre-fab shapes into composite objects and give those objects behaviors.³⁹ By combining this verisimilitude with their power of malleability, users gained the freedom to craft ingenious objects, and they put that ability to use. According to Linden Lab's Cory Ondrejka, users have inserted over 2 million such objects into the world. Over 50,000 distinct objects changed hands in the month of February 2005 in one million user-to-user transactions,

³⁷ Active Worlds AlphaWorld virtual world platform was a small but notable exception. Launched in 1995, AlphaWorld attempted to do for 3D virtual worlds what web browsers did for the 2D Web: it created a tool for exploring and building three-dimensional spaces. The programmers at Active Worlds created a library of objects that users could assemble like Legos into buildings, cars, and other composite structures. By 1998, they had released a software development kit that enabled users to build their own custom objects, called blocks. (See <http://www.activeworlds.com/sdk/> and particularly the timeline of changes to the SDK at <http://www.activeworlds.com/sdk/whatsnew.htm>.) With these tools, AlphaWorld users have not only replicated Rome's Coliseum, but have created entire parallel worlds with these software tools. For all this construction and creativity, Active Worlds has never been a commercial success: it only instituted a monthly-fee model in September 1997, and to date it only has registered a total of 70,000 users (The Activeworlds Corporation Company Information page at <http://www.activeworlds.com/info/index.asp> (last visited September 14, 2005)), partially because the world has no teleology. (See Raph Koster, MUDS VERSUS MMORPGS at <http://www.legendmud.org/raph/gaming/mudsvsmassive.html> (last visited September 14, 2005). That said, AlphaWorld set the stage for a new generation of virtual worlds, like Linden Lab *Second Life*, that not only offer malleability to their users, but also economic freedom to sell their creations in both virtual markets and real-world exchanges.

³⁸ See Matthew Yi, *Online Game Bets on Self-Expression: Linden Lab's Second Life Premieres Today*, S.F. CHRON., June 23, 2003, at E1; Stephen Totilo, *Do-It-Yourselfers Buy Into This Virtual World*, N.Y. TIMES, November 11, 2004, at section G, column 1, page 5; Mure Dickie & Richard Waters, *Make-Believe Makes Money: Computer Games Companies Are Creating Vast Imaginary Worlds Online*, FIN. TIMES, November 30, 2004, at 13.

³⁹ All objects in SecondLife are composed of one or more geometric building blocks called primitives, or (more colloquially) prims. Each prim can be sized, shaped, colored and textured. Additionally, through the use of the Linden Scripting Language, programmers can insert event-based actions into a prim, so that it can interact with avatars or with other prims inside of an object. For example, by coding an "onTouch" function, a developer could make "button" prim in a PDA/phone respond to the touch of an avatar, and enabling someone retrieve voice mails from a "voicemail" prim. For an introduction to this C/Java-like scripting language, see the Linden Scripting Language Wiki, <http://secondlife.com/badgeo/wakka.php?wakka=prim> (last visited June 5, 2005).

which (given the stable exchange rate of \$2.50 LindenDollars to \$1 US Dollar) yielded an average cost for each *Second Life* object of US \$1.25, double that of a year ago.⁴⁰

Given the apparent utility of these virtual objects to millions of players, one can easily imagine that real money would start spilling over into these virtual worlds via markets for special objects, homes in good neighborhoods, and even for virtual currency. *Vice versa*, virtual money earned in these worlds by particularly successful avatars could be exchanged for real dollars, making it possible for users to earn a living through virtual world activities.⁴¹

This is exactly what has happened. By the end of 2001, obeying laws of supply and demand, participants of Sony Online Entertainment's virtual world *EverQuest* began selling their virtual currency and virtual weapons to other users utilizing online marketplaces like eBay and Yahoo.⁴² Intrigued by this development, Edward Castronova performed a detailed analysis of the trading of avatars and virtual objects (including currency) in *EverQuest* on both the microeconomic and macroeconomic levels.⁴³ He found that an avatar on auction at eBay fetched on average USD 500 to 1000, and that on an average day transactions of virtual goods valued at around \$12,000 took place. By his estimate, *EverQuest* virtual currency may have had an exchange value a little higher than a penny (\$0.01072), and the *EverQuest* world of Norrath may have a GNP of \$135 million. Moreover, trading was on the rise: his survey indicated that 45% of *EverQuest* users knew someone who had traded virtual objects for US dollars.⁴⁴

⁴⁰ E-Mail from Cory Ondrejka, Vice President of Product Development at Linden Lab, to John Crowley ([# date, time with timezone]) (on file with author).

⁴¹ See Cory Ondrejka, *Escaping the Gilded Cage: User Created Content And Building The Metaverse*, 49 N.Y.L. SCH. L. REV. 81 (2004/2005); Edward Castronova, *Virtual Worlds: A First-Hand Account of Market and Society on the Cyberian Frontier* (CESifo, Working Paper No. 618, 2001), available at <http://papers.ssrn.com/abstract=294828>; F. Gregory Lastowka & Dan Hunter, *The Laws of the Virtual Worlds*, 92 CAL. L. REV. 1 (2004); Daniel C. Miller, *Determining Ownership in Virtual Worlds: Copyright and License Agreements*, 22 REV. LITIG. 435 (2003). See also Tamara Lush, *Where Real Money Can Buy Unreal Fun*, ST. PETERSBURG TIMES (FLORIDA), March 14, 2005, at 1A.

⁴² See Daniel Terdiman, *Virtual Trader Barely Misses Goal*, WIRED NEWS, April 16, 2004, <http://wired-vig.wired.com/news/games/0,2101,63083,00.html> (last visited June 8, 2005) (reporting that by buying and selling gold pieces, suits of armor and other artifacts from Ultima Online, a player managed to make a profit of \$3,917 in one month, which equals an annualized rate of about \$47,000 in income); Lush, *supra* note 41.

⁴³ See Castronova, *supra* note 41, at 31.

⁴⁴ See Castronova, *supra* note 41, at 29-36.

In a move that infuriated those involved, Sony decided to stop spill-over between *EverQuest* and the real world, citing not only the potential of cheating its in-world systems, but also the numerous requests for Sony to become an arbitrator between parties in auctions that have ended in disputes. To stop spill-over, Sony partnered with marketplace providers to cease the sale of virtual items being sold outside of *EverQuest's* own trading mechanisms. However, market demand eventually proved stronger than Sony's desires to protect the nature of the game: in July 2005, Sony released its own sanctioned avatar-to-avatar market for in-world objects, allowing users to purchase virtual currency and property with real-world money.⁴⁵

EverQuest is hardly alone in having to manage out-of-world sales of in-world objects.

According to Richard Bartle, monthly eBay sales of virtual items for *Ultima Online* exceeded \$156,857 in April 2004.⁴⁶ Given the money being traded in these auctions, it is no surprise that entrepreneurs have taken notice.⁴⁷ Companies in countries with cheap labor like China have begun teaching computer-literate workers to build new avatars, earn virtual money, and engage in specific projects to acquire rare and high-priced treasures, which then are sold on auction sites.⁴⁸ One such site, itemBay, has grown around the huge gaming community in Korea. By some estimates, its revenues are in excess of \$17 million USD *per month* in the trade of virtual objects.⁴⁹

Worried about the vulnerability of their worlds, virtual world providers have tried to limit spill-overs. But permeability continues. As virtual world providers are discovering,

⁴⁵ In the first 30 days of operation, the auctions attracted over 45,000 avatars and over \$180,000 USD in virtual property were exchanged. See Sony Online Entertainment Press Release *Station Exchange – The First 30 Days* (August 25, 2005) http://sonyonline.com/corp/press_releases/082605_StationExchange_first30days.html (last visited September 15, 2005).

⁴⁶ Richard A. Bartle, *Pitfalls of Virtual Property*, The Themis Group 2004, available at <http://www.themis-group.com/uploads/Pitfalls%20of%20Virtual%20Property.pdf> (last visited June 2, 2005), at 2.

⁴⁷ Mark Wallace, *Game is virtual. Profit is real*, INT'L HERALD TRIB., May 30, 2005, at 9.

⁴⁸ See Laila Weir, *Boring Game? Outsource it*, WIRED NEWS, Aug. 24, 2004, <http://www.wired.com/news/digiwood/0,1412,64638,00.html> (last visited June 8, 2005). See also IGE's online store at ebay, at <<http://stores.ebay.com/IGE>> (last visited June 2, 2005).

⁴⁹ See Mark Russell, *Gaming the Online Games*, NEWSWEEK, October 18, 2004, available at <http://www.msnbc.msn.com/id/6199780/site/newsweek/> (last visited June 2, 2005).

informational goods are easy to share but hard to control, especially when the Internet enables a suitable infrastructure for markets of virtual goods to develop.⁵⁰

Part II: Governing Virtual Worlds

Spillovers represent only a small part of the governance challenge virtual world providers face. Conflicts arise in virtual worlds even in the absence of any spillovers. Participants in virtual worlds may misunderstand each other. Others may intentionally lie, deceive or cheat.

In the abstract, a functioning governance system addresses such conflicts in two ways. First, *ex post*, through societal conflict resolution structures, institutions and processes aimed at settling conflicts authoritatively.⁵¹ Second, *ex ante*, by setting general rules it provides guidelines for behavior and creates predictable outcomes of conflict resolution, such that if one adheres to these rules, one will likely have any conflict settled in one's favor.⁵² Each conflict resolved as expected further strengthens this predictability.⁵³

At the level of implementation, virtual world providers possess both parts of a functioning governance system – rule setting and rule enforcement. By changing the software code, providers can set rules and thereby constrain behavior in their worlds. For instance, to stop participants of a virtual world from moving instantaneously from one part of the world to another (a feature often called “teleporting”), providers only have to modify the software that implements teleporting. Unlike the real world, virtual worlds are creations of the mind that are modeled in software, and are as such completely changeable.⁵⁴ For behaviors, which can be adequately restrained through software code alone, virtual world providers can at

⁵⁰ For a monetary analysis of what he terms eBaying virtual goods, see Hiroshi Yamaguchi, *An Analysis of Virtual Currencies in Online Games* (April 30, 2004). <http://ssrn.com/abstract=544422>

⁵¹ FREDERICK SCHAUER, *THE CONVERGENCE OF RULES AND STANDARDS* (2001).

⁵² SCHAUER, *supra* note 50.

⁵³ SCHAUER, *supra* note 50.

⁵⁴ WILHELM STEINMÜLLER, *RISKANTE NETZE* 31 (1990).

once set and enforce their rules. In this respect, code *is* law in virtual worlds, arguably making them the most “Lessigian” of all spaces of online interaction.⁵⁵

Contrary to some more enthusiastic proponents of the “code is law” movement, however, not all of online behavior is regulable through software code. First, software is not sufficiently advanced to grasp the semantic meaning of text.⁵⁶ For example, veiled threats made by one participant of a virtual world to another may not be recognized by the virtual world’s software and may not trigger the software code that filters the message. Second, not every human conflict can be avoided through *ex ante* regulation of behavior.⁵⁷ Conflicts are bound to arise even in the most restricted virtual worlds. Third, participants demand a certain degree of freedom to interact.⁵⁸ If behavior is constrained too narrowly, it will act as a disincentive for people to join and stay in the virtual world.

Because software code can only limit and not eliminate conflict, virtual world providers have to deal with conflicts which cannot be constrained through modifications to the underlying code through the application of more old-fashioned governance mechanisms: codifying social norms into written rules and providing effective enforcement of these norms. Enactment of such a means of governance is relatively straightforward. As participants in

⁵⁵ See LESSIG, *supra* note 11.

⁵⁶ See Hubert L. Dreyfus, WHAT COMPUTERS STILL CAN’T DO: A CRITIQUE OF ARTIFICIAL REASON (1992). This problem is well known in the context of filtering illegal content on the Internet. For instance, the *Censorware Project* reports that the software filter *Cyber Patrol* blocks also access to sites like the MIT Project on Mathematics and Computation, the University of Arizona, the U.S. Army Corps of Engineers Construction Engineering Research Laboratories, and AAA Wholesale Nutrition, a provider of bodybuilding products, see The Censorware Project, Blacklisted by Cyber Patrol: From Ada to Yoyo, <http://censorware.net/reports/cyberpatrol/ada-yoyo.html> (last visited May 28, 2005). See generally Richard J. Peltz, Use “The Filter You Were Born With”: The Constitutionality of Mandatory Internet Filtering for the Adult Patrons of Public Libraries, 77 WASH. L. REV. 397, 401-16 (2002); Electronic Privacy Information Center, *Faulty Filters: How Content Filters Block Access to Kid-Friendly Information on the Internet*, <http://www2.epic.org/reports/filter-report.html> (last visited May 28, 2005); R. Polk Wagner, *Filters and the First Amendment*, 83 MINN. L. REV. 755, 760-2 (1999); Jonathan Weinberg, *Rating the Net*, 19 HASTINGS COMM. & ENT. L.J. 453 (1997). See also Tim Berners-Lee, *Semantic Web Road Map*, <http://www.w3.org/DesignIssues/Semantic.html> (last visited May 31, 2005) (proposing to create a universal medium for information exchange by giving meaning, in a manner understandable by machines).

⁵⁷ See SCHAUER, *supra* note 50.

⁵⁸ See Raph Koster, *The Man Behind the Curtain*, <http://www.legendmud.org/raph/gaming/essay5.html> (last visited May 31, 2005).

virtual worlds enter into a contract (usually a EULA or *terms of service*)⁵⁹ with providers when they register for the service, they agree to be bound by the rules and regulations in that contract. Providers thus have a mechanism to set the rules they deem necessary.

These mechanisms for rule enactment are complemented by mechanisms of rule enforcement. Participants who violate the rules can be expelled from the virtual world – harkening back to the practice of ostracization from ancient and medieval cities.⁶⁰ Such forced exit works through a combination of legal and technical mechanisms. Because breaking a rule is a violation of a participant’s contract, it permits the virtual world provider to punish participants that break the rules, if necessary even by canceling the contract with them. Because access to virtual worlds is restricted by means of username and password, providers can use a technical means – software code – to invalidate that participant’s access privileges and thereby enforce the legal consequences stemming from the breach of contract.

Expulsion as an enforcement mechanism is effective because participants in virtual worlds incur significant costs when they are forced to leave. Not only do they have to leave behind a network of friends and their accumulation of social and other capital, but they also are forced to abandon the persistent narrative that they have constructed around their avatar. There are additional costs: the required use of credit cards for payment of the virtual world’s monthly fees ensures that individual participants are linked to specific credit cards (and thus by approximation people), making it difficult for individuals to re-register for a virtual world from which they have been banished. While it is not impossible to sign up again with a

⁵⁹ For the debate on end user license agreements (EULAs), see Daniel C. Miller, *Determining Ownership in Virtual Worlds: Copyright and License Agreements*, 22 REV. LITIG. 435 (2003) and generally Robert W. Gomulkiewicz & Mary L. Williamson, *A Brief Defense of Mass Market Software License Agreements*, 22 RUTGERS COMPUTER & TECH. L.J. 335 (1996); Pamela Samuelson, *Intellectual Property and Contract Law in the Information Age: The Impact of Article 2B of the Uniform Commercial Code on the Future of Transactions in Information and Electronic Commerce*, 13 BERKELEY TECH. L.J. 809 (1998); Mark A. Lemley, *Intellectual Property and Shrinkwrap Licenses*, 68 S. CAL. L. REV. 1239, 1240 (1995); Charles R. McManis, *The Privatization (or "Shrink-Wrapping") of American Copyright Law*, 87 CAL. L. REV. 173, 173 (1999).

⁶⁰ See Johnson & Post, *supra* note 9, at 1388-90. See also Paul R. Milgrom, Douglass C. North & Barry R. Weingast, *The Role of Institutions in the Revival of Trade: The Law Merchant, Private Judges, and the Champagne Fairs*, 2 ECON. & POL. 1 (1990).

different credit card⁶¹, it would still be a costly choice, as one would still have lost everything connected with the previous avatar.⁶² Moreover, forced exit is an efficient mechanism of enforcement, because it is relatively cheaper for providers to banish a user than for participants to lose access to their virtual world.

The mechanisms for rule enactment (either through software or through an extension of the contract with the users) and rule enforcement (either directly through behavior restricting code or indirectly through provider action facilitated by technical means to restrict access) provide the necessary foundation for governance in virtual worlds to function. These means, however, do not necessarily incorporate the procedural and other qualities to which we are accustomed to seeing in the real-world rule-making and enforcement space.

Qualities of Rule Making

In the real world, rule making is highly formalized. In most democracies, a specialized institution - a legislature - deliberates and enacts laws according to a precisely defined process; these laws are then published so that citizens know what rules to obey.⁶³ In contrast, rule making in virtual worlds is private rulemaking. In this sense, virtual worlds are like huge “virtual malls” in which the owners retain the right to act in any shape or form they desire.⁶⁴

⁶¹ For example, Mr. Bungle, the evil protagonist of Julian Dibbell’s famous account of “A Rape in Cyberspace”, joined the community as Dr. Jest after his being “toaded”, i.e. officially deleted from the servers. See Julian Dibbell, *A Rape in Cyberspace*, The Village Voice, December 21, 1993, p. 36-42, available at <ftp://ftp.lambda.moo.mud.org/pub/MOO/papers/VillageVoice.txt> (last visited May 31, 2005).

⁶² Although this practice could become difficult over time if virtual world providers work together with credit card companies.

⁶³ In his famous work “The Gulag Archipelago”, Aleksandr I. Solzhenitsyn describes how an attorney unlike ordinary citizens in the Soviet Union was the one that had access to the statutes of the nation, see ALEKSANDR I. SOLZHENITSYN, *THE GULAG ARCHIPELAGO, 1918-1956: AN EXPERIMENT IN LITERARY INVESTIGATION* (Thomas P. Whitney, et al. trans., Westview Press 1991, 1992) (1974-1978).

⁶⁴ See Jonathan Zittrain, *ICANN: Between the Public and the Private--Comments Before Congress*, 14 BERKELEY TECH. L.J. 1071 (1999) (pointing out the blurring of the public-private distinction on the internet). See generally on private ordering ROBERT C. ELLICKSON, *ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES* (1991); Lisa Bernstein, *Opting out of the Legal System: Extralegal Contractual Relations in the Diamond Industry*, 21 J. LEGAL STUD. 115 (1992); Robert D. Cooter, *Inventing Market Property: The Land Courts of Papua New Guinea*, 25 LAW & SOC’Y REV. 759 (1991); Alan Schwartz & Robert E. Scott, *The Political Economy of Private Legislatures*, 143 U. PA. L. REV. 595 (1995); William W. Fisher III, *Property and Contract on the Internet*, 73 CHI.-KENT L. REV. 1203 (1998);

Rulemaking is done by the virtual world provider, with no guarantee of democratic participation or assurance of transparency. The providers may change the underlying software code – and by extension the rules that constrain certain behaviors – at any time. Without warning, users may suddenly find themselves in a changed environment in which some behavior or activity may not only be simply restricted but impossible to do. In cases when rulemaking cannot be directly embedded in software code, virtual world providers may change the terms and conditions of participation, thereby curbing behavior of users through the threat of potential expulsion or similar access restrictions.⁶⁵

We do not suggest that rule making in virtual worlds is necessarily undemocratic and opaque, or that virtual world providers have no desire to recreate democratic institutions and processes from the real world. In fact, there are numerous examples of (mostly failed) attempts by virtual world providers to introduce at least a modicum of democratic control and transparency.

Take the case of LambdaMOO, a virtual world in which the administrators attempted to institute direct democracy. When LambdaMOO started in 1990, the only method of social control was through a special small group of administrators who ruled as benevolent dictators, the *wizards*. A wizard had the ultimate powers in the system: the ability to expel users by deleting them from the database. Wizards wielded these powers in the adjudication of social conflicts, usually showing restraint, but occasionally ostracizing certain problematic users from the world.

After its launch, LambdaMOO grew quickly: within a year, it had attracted several thousand residents. Given this growth, the handful of wizards found it difficult to keep up with the social conflicts while simultaneously managing the world's technical operations.⁶⁶ Although

but see Margaret Jane Radin & R. Polk Wagner, *The Myth of Private Ordering: Rediscovering Legal Realism in Cyberspace*, 73 CHI.-KENT L. REV. 1295, 1297 (1998).

⁶⁵ *See, e.g.*, Curtis, *supra* note 26.

⁶⁶ A fate shared by the investors of Habitat as well as other fast-growing virtual communities. *See* Morningstar & Farmer, *supra* note 31.

they took the time to encode the tacit rules that had governed user behavior into a canonical statement of manners and had even recruited trusted players into an arbitration committee to lighten the load of dispute resolution, the wizards were incapable of managing the stress. As Curtis later related,

*Something had to give, and it was us. On December 9, 1992, I posted a pivotal message to LambdaMOO's *Social-Issues mailing list... I announced the abdication of the wizards from the "discipline/manners/arbitration business;" we would no longer be making what I glibly termed "social decisions."⁶⁷*

When Curtis abdicated the authority of the wizards over the adjudication of social conflicts in LambdaMOO, he was hoping to force the community to devise a system of self-governance on its own. Although Curtis enabled the residents to institute a ballot initiative system modeled on that found in California, and they were able to use the conferencing tools of the software to create deliberation about critical issues, they failed to institute a system of governance that could enforce any their decisions. In particular, they lacked the wizard's power of mandating forced exit of problematic users. The consequences were predictable:

LambdaMOO slowly became a rougher place... It's hard to say how much [the announcement of the wizard's abdication] accelerated a process that was already in place, but surely it didn't help to hold it back. The level of inter-player strife and harassment rose and rose, slowly but inexorably.⁶⁸

Without the wizards and the power of forced exit, the social conflicts became intractable. In 1995, after several crises that rippled through the community and proved impossible to control without wizardly intervention, Curtis retracted the abdication and restored the rule

⁶⁷ Curtis, *supra* note 26.

⁶⁸ Curtis, *supra* note 26, at 4.

of the wizard by fiat.⁶⁹ The experiments with democratic self-governance ended, and the wizards were back to being omnipotent (and overloaded) beings.

LambdaMOO was not unique in the failure of the community to administer its own affairs. MediaMOO, a community of researchers devoted to the study of the Media as well as virtual worlds, built on the lessons of LambdaMOO and attempted to develop a representative democracy instead of a direct democracy.⁷⁰ As MediaMOO's founder Amy Bruckman explained in a conference in 1998, the community deliberately set out to avoid LambdaMOO's mistakes: it enabled its governing council to deliberate on rules for the well-being of all. It also instituted a system of voting that was updated every hour, giving the representatives near immediate insight into the thoughts of their constituencies. However, Bruckman never fully ceded control to the council, nor did the council want to become the sole seat of power. Predictably perhaps, the deliberative process became bogged down in matters of jurisdiction and procedure, and was further paralyzed by the notion that the council operated on the basis of consensus. The voting/feedback system also became dominated by those who were willing to invest the most time into arguing their opinions; succinct, clear and convincing counterarguments were no match for continued onslaught of words. Despite the sincere efforts of an extremely educated constituency to make democracy work, Bruckman eventually asserted her control over the power button: she was unwilling to let the larger MediaMOO experiment become derailed by an interesting but flawed experiment with representative democracy, and she pulled the plug on democracy for the well being of the community.⁷¹

⁶⁹ Curtis, *supra* note 26, at 5.

⁷⁰ On the MediaMOO project see AMY BRUCKMAN & MITCHEL RESNICK, THE MEDIAMO PROJECT: CONSTRUCTIONISM AND PROFESSIONAL COMMUNITY, CONVERGENCE 1:1 94-109 (1995).

⁷¹ See Amy Bruckman & Carlos Jensen, *The Mystery of the Death of MediaMOO, Seven Years of Evolution of an Online Community*, in BUILDING VIRTUAL COMMUNITIES 21-33 (Ann Renninger & Wesley Shumar eds., 2002); Amy Bruckman, *Democracy in Cyberspace: Lessons from a Failed Political Experiment*, Invited talk at Conference "Virtue & Virtuality: Gender, Law, and Cyberspace" at MIT, April 20th, 1996, available at http://www.fragment.nl/mirror/various/Bruckman_A.1996.Democracy_in_cyberspace.html (last visited May 31, 2005).

The experiences of LambdaMOO and MediaMOO demonstrate that establishing a legitimate, transparent and inclusive self-governing mechanism in virtual worlds is difficult. This leaves virtual world providers in an unenviable position. On one hand they may want to establish self-governance to extract themselves from the difficulty of governing. On the other hand, self-governance may fail and consequently lead to a mass exodus of users and economic disaster for the provider. Faced with such choice, providers have traditionally chosen to retain control. This does not mean that in the absence of self-governance virtual world providers are not accountable to the users of their virtual worlds.⁷² The economic need to keep users satisfied does force providers to take user demands into account, but this mechanism of accountability lacks formalization, procedural fairness, and transparency -- the very procedural qualities of rule making which democratic mechanisms in the real world have to offer.

Qualities of Enforcement

Once rules are set, they need to be enforced. In the real world, enforcement is done by a special institutional structure, the judicial branch, and a highly formalized process of adjudication. Constitutionally guaranteed principles of due process ensure that enforcement happens in a rational, fair, transparent, and even-handed manner in accordance with stated substantive rules. Virtual world providers are hard pressed to offer such guarantees. They do not possess similar institutional structures or processes, and they lack a constitutional rule system that guarantees certain qualities of enforcement. Although they may strive for efficiency in their decision-making⁷³, they do not necessarily strive for fairness; even if they do, they find it hard to reach it, and not for want of trying.⁷⁴

⁷² See James Grimmelmann, *Virtual Power Politics*, April 19, 2005, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=707301 (last visited May 31, 2005).

⁷³ An example of an attempt to introduce more efficiency processes is ICANN's Uniform Domain Name Dispute Resolution Policy ("UDRP"). See Anette Kur, *UDRP*, <http://www.intellecprop.mpg.de/Online-Publikationen/2002/UDRP-study-final-02.pdf> (last visited June 7, 2005); but see Michael Geist, *Fair.com? An Examination of the Allegations of Systemic Unfairness in the ICANN UDRP*, 27 BROOK. J. INT'L L. 903 (2002).

⁷⁴ An attempt to guarantee fairness also motivated Sony Online Entertainment's decision to ban the trading of characters, items, or equipment in EverQuest. See Daniel Terdiman, *When Play Money Becomes Real*, WIRED NEWS, April 7, 2004, <http://www.wired.com/news/games/0,2101,62929,00.html> (last visited May 31, 2005).

Virtual world providers have attempted to set up enforcement mechanisms, instituting them from the top-down as well as responding to participants who build them from the bottom-up.⁷⁵ The latter case often occurs when a conflict arises, prompting users to suggest rules.⁷⁶ Yet such bottom-up developed rules alone will be useless unless there is enforcement to back them up. Some virtual world providers have gone as far as to let their users determine the mechanisms of enforcement.

The result of one such experiment has become one of the most celebrated failures of self-government in MUD history. When the wizards of LambdaMOO abdicated authority over social conflicts, one character named Mr. Bungle took advantage of the vacuum of rule enforcement to pursue actions online for which he knew that he would face no real world consequences: he engaged in a verbal sexual assault of other avatars.⁷⁷

When the actions were finally stopped, the emotional damage to the community spurred weeks of discussion about what to do with Mr. Bungle. Did his actions deserve banishment? If so, by what process would the community be able to convince the wizards to delete him from the database? Mr. Bungle's actions caused hundreds if not thousands of communications between the users of LambdaMOO, but no consensus on what action to

(citing Sony's PR director Chris Kramer: "We have people who have been playing for a number of years in EverQuest, ... They've invested a large number of hours into creating their character, (and) amassing a small fortune in platinum. To have a person who has spent that much time and effort turn around and see someone else who has a character with equal abilities who has done nothing more than buy it on eBay, it turns off a lot of our players.").

⁷⁵ See, e.g., Curtis, *supra* note 26, p. 4 (creating a system of petitions and ballots for LambdaMOO to make "social decisions") and Bruckman, *supra* note 71 (reporting on her experiment to introduce democratic control of the community MediaMOO).

⁷⁶ See Julian Dibbell, *A Rape in Cyberspace*, *supra* note 61 (reporting on how the discussions on self-governance among LambdaMOO members after a "virtual rape" committed in their community).

⁷⁷ Mr. Bungle created a software voodoo doll that could take control of the actions of other characters and force them to perform (sometimes violent) sexual actions on themselves and on others. One night, he brought the doll into the most comfortable room in the MUD, the place where many characters were having an evening's conversation, and used the doll to force one women's avatar named legba to perform a sexual act on him. The actual real-world creators of these characters were powerless to stop the code from executing; they watched in horror as the doll essentially raped avatar after avatar, before Mr. Zippy, an old-timer with great power, fired a special gun that did not kill, but trapped Mr. Bungle in a cage that not even the doll's potent software code could escape. See Dibbell, *supra* note 61.

take. With the community paralyzed, one of the wizards took it upon himself to quietly banish Mr. Bungle. That he made no announcement before executing this digital form of capital punishment, and participated in no part of a formal adjudication or sentencing process, caused almost as much of stir as the crime. It indicated that the restoration of rule by fiat was not far away, and the inability of the democracy to cope with deliberations over rule enforcement had given way to the autocracy of those with the power over the database.⁷⁸

Dissuaded by the failures of even the best-intended bottom-up enforcement attempts, commercial and not-for-profit providers of virtual worlds have struggled to find an enforcement process that is both efficient and responsive to the expectations of users. None have yet succeeded. Even though virtual world providers have at their disposal the necessary mechanisms to set and enforce rules, the application of these means poses governance challenges that no provider has been able to surmount.⁷⁹ *Ultima Online* tried to establish eBay-like reputational systems, which use stigma to color poorly behaved characters' every interaction and warn others not to trust them.⁸⁰ However, reputation only alters behavior within the limited scope of interactions where characters have choice over the interaction itself (as in economic transactions), rather where one character initiates a violent behavior such as theft or murder. Also, reputations are not *themselves* a method of enforcement; they may restrain interactions, but have no force to punish specific behaviors if the perpetrator appreciates the value of his or her reputation differently from the mainstream of the user base.⁸¹ Linden Lab's *Second Life* tried another method: it portrayed itself as a common carrier

⁷⁸ See Dibbell, *supra* note 61.

⁷⁹ Theorists debate whether virtual world self-governance could ever attain the qualities of real world self-governance, if users do not own ultimate control over their world. Bruckman noted, "you can't really have a democratic system, unless the members of the community really own the machine". Rule-making, she suggests, has always been in the hands of the person who own the power switch. As long as this does not change, true self-governance may remain elusive, *see* Bruckman, *supra* note 71. As Zittrain has pointed out, however, entire towns are owned by corporations. This does not make it impossible for self-governance to develop. It requires, though, regulatory control over how private actors may exercise their power of self-governing communities, *see* Zittrain, *supra* note 64.

⁸⁰ *See* Koster, *supra* note 58.

⁸¹ *See* Clayton P. Gillette, *Reputation and Intermediaries in Electronic Commerce*, 62 LA. L. REV. 1165, 1189-92 (2002). *See also* Paul Resnick & Richard Zeckhauser, *Reputation Systems*, COMM. OF THE ACM, Dec. 2000, at 45.

and platform rather than an administrator or government, leaving dispute resolutions to its residents and avoiding the creation of a formal dispute resolution policy.⁸² While Linden Lab does offer moderators who can help resolve disputes between private parties, it does not (yet) *enforce* the agreements made between these parties, unless they violate the Community Standards document or real-world laws,⁸³ and will not establish any enforcement mechanisms unless or until they do develop a formal dispute resolution policy.⁸⁴ The virtual world *A Tale in the Desert* established a method for avatars to develop laws in a democratic fashion, so long as the enforcement of those laws could be made using software code.⁸⁵ It also has a policy of not protecting players from these laws.⁸⁶ Punishments have included limiting the geographic movements of an avatar as well as permanent banishment from the world. However, the success of this enforcement method is limited by the Hobbesian nature of the virtual world itself, where conflict is the norm and participants have no protection from the provider's mission to develop situations that cross real-world lines of sexual harassment and racial discrimination.⁸⁷

⁸² A recent case where a man erected a huge naked portrait of himself to face his female neighbor's property is testing this laissez-faire attitude: the women not only complained to this gentleman, but raised a formal complaint to Linden Lab's abuse department. See Daniel Terdiman, *Online Feuds a Big Headache*, WIRED NEWS, <http://www.wired.com/news/games/0,2101,65562,00.html> (last visited May 31, 2005).

⁸³ See the comments made by Robin Linden on May 11, 2005 in a *SecondLife* Town Hall meeting: "LL can't enforce private agreements between residents and until we implement dispute resolution we won't be able to.", Robin Linden, *Town Hall Transcript*, May 11, 2005, <http://webmistressjulia.com/SLBLOG.htm> (last visited June 5, 2005).

⁸⁴ Private correspondence with Wagner James Au, the embedded journalist of *SecondLife* (on file with author). One case pitted the owner of a home against an artist who constructed a giant toilet in the middle of an otherwise pastoral setting, ruining her view. The company did not resolve the conflict: a neighbor coded an invisible barrier that essentially made the toilet transparent when seen from the homeowner's property. See Wagner James Au, *Nimby!*, NEW WORLD NOTES, July 23, 2003, http://secondlife.com/notes/2003_07_21_archive.php (last visited June 5, 2005).

⁸⁵ See the interview with Andy Tepper, chief designer of *A Tale in the Desert*, at the *State of Play II* conference, http://web.stream57.com/nylaw/548-000_SOPInterviews/sop_interview.asp?vid=03 (last visited June 5, 2005).

⁸⁶ See *A Tale in the Desert*, Rules of Conduct, <http://atitd.com/conduct.html> (last visited June 5, 2005) ("We do not have a policy against offensive behavior, but be aware - if you offend the other players, they have the power to punish you. They can even exile you permanently from the land of Egypt - game over, don't come back. If you choose to behave in a way that is annoying to other players, we will not protect you from the wrath of the other players.")

⁸⁷ In one incident, the chief designer Andy Tepper created a roving salesman who caused long lines of people to queue for the opportunity to get special goods. Whenever a woman approached him, he would not sell to her and instead asked her, "Who is your master?" The discrimination caused a huge stir in the community,

In sum, two kinds of governance issues plague virtual worlds. The first ones arise because the governance system in virtual worlds is not as developed or mature as those found in the real world. Consequently, commentators have suggested that virtual worlds need to develop regulatory frameworks, including institutions, structures, and processes to offer a level and quality of governance users expect, often by comparing it to governance in the real world. For example, Raph Koster has written on individual rights of avatars.⁸⁸ Jack Balkin has pointed to the need to find the balance between regulation of virtual worlds as commercial or public spaces and the protection of freedom of speech of both the game designers and users.⁸⁹ Gregory Lastowka and Dan Hunter have examined the very notion of virtual property rights and the rights that might extend to avatars as a hybrid between a real and virtual person.⁹⁰ And James Grimmelman has suggested that economic realities force virtual providers even absent self-governance systems to remain accountable to their users.⁹¹

The second kind of issues arises because of the permeability between the virtual and the real world. These spillovers lead potentially to regulatory challenges both in the virtual and the real world: Somebody broadcasts somebody else's music in a virtual world, thus prompting users of the virtual world to not buy this music in the real world. Or a user of a virtual world sells information goods of the virtual world in the real world, thus undercutting transactional regulations in the virtual world.

which lacked any means of ensuring that players could avoid such offensive behaviors on the part of the virtual world designers, particularly when those designers view the imposition of this behavior as part of the trials of the world itself. See Craig T. Dalrymple, *When Does An Online Game Go Too Far?*, GRIMWELL ONLINE, Oct. 20, 2004, <http://www.grimwell.com/index.php?action=fullnews&id=192> (last visited June 5, 2005).

⁸⁸ Raph Koster, Declaration of the Rights of Avatars, at <http://www.legendmud.org/raph/gaming/playerrights.html> (last visited September 16, 2005)

⁸⁹ Jack M. Balkin, *Virtual Liberty: Freedom to Design and Freedom to Play in Virtual Worlds*, 90 VA. L. REV. 2043, 2052 (2004); Jack M. Balkin, *Law and Liberty in Virtual Worlds*, 49 N.Y.L. SCH. L. REV. 63, 68-73 (2004/2005); see also Peter Jenkins, *The Virtual World as a Company Town – Freedom of Speech in Massively Multiple Online Role Playing Games*, 8 J. INTERNET LAW 1 (2004)

⁹⁰ F. Gregory Lastowka & Dan Hunter, *The Laws of the Virtual Worlds*, 92 CAL. L. REV. 1, 29-51 (2004). See also F. Gregory Lastowka & Dan Hunter, *Virtual Crimes*, 49 N.Y.L. SCH. L. REV. 293 (2004/2005).

⁹¹ Grimmelman, *Virtual Power Politics*, *supra* note 72; see also James Grimmelman, *Virtual Worlds as Comparative Law*, 47 N. Y. L. SCH. L. REV. 147 (2004).

By focusing on the relationship between virtual worlds and the real world, such governance research moves beyond the study of regulatory challenges within a virtual world. Moving from analysis of in-world problems to relational challenges between virtual and real worlds is an important step in the conceptualization of the regulatory challenges virtual worlds face. Yet, the picture such analyses paint is still incomplete. Juxtaposing a virtual and real world misses the fact that there is no one virtual world, but a multitude of them. The next chapter describes how this dynamic shapes the landscape of virtual worlds.

Part III: Regulatory Competition and the Economics of Virtual Worlds

People joining virtual worlds have the power of choice. Based on a number of factors, including good governance and favorable contractual terms, they can choose the society in which they want to live, migrating their online activities from place to place with much greater ease than real world immigrants can move their physical lives. Virtual world providers who operate within this market dynamic measure their success in terms of the size of their user base, and they consequently pursue two goals: attracting people to join their virtual world, and retaining them over time.

Attracting New Users

Attracting new users requires virtual worlds to stand out in some way relative to their competitors. A handful of strategies can provide such a competitive advantage:

(1) **Content:** Virtual world providers may offer a more immersive experience and convincing simulacrum than its competition, with better graphics and richer content. Because creating new content takes time and effort and requires a significant, continuous investment in product development, differentiating on product is both the most obvious and most costly

strategy. It requires a continuous and expanding⁹² revenue stream, either by attracting more users or raising the price for the existing user base.

(2) **Price:** Virtual world providers may lower price, attracting users by offering a more affordable experience. Given relatively high fixed and relatively low recurring costs, virtual world providers may find this an attractive option. However, this strategy has a significant downside, as the market for virtual worlds has shown limited price elasticity. Joining a virtual world generally entails a significant time investment: users must not only acclimate to the software and the geography of the virtual space, but also build both relationships with new people and trustworthy reputations for their avatars. The differential between the relatively small monthly fee of a dozen dollars paid to a virtual world provider and the value with which users view this time investment translates into price inelasticity, and explains why many virtual world providers offer their subscriptions at roughly the same price points.

(3) **Regulatory Framework:** Finally, virtual world providers may compete by offering users a virtual environment more aligned to users' expectations and demands. For example, a company could provide its users with a more user-centric rule-making and enforcement framework.⁹³

Unlike the real world, where attracting outside investment is only one consideration in domestic law making, virtual worlds are commercial undertakings, and are therefore engaged in inter-jurisdictional competition, where the central goal is to attract new investment either through higher fees or, more likely, through an influx of new users. The commercial nature

⁹² The revenue stream will have to increase over time, as established virtual world providers with their growing legacy software foundation face new competitors, which use the latest in software tools. Modifying and adapting existing virtual worlds to meet the demands of users who compare it to the latest new virtual realms becomes more expensive over time.

⁹³ See Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the "Race-to-the-Bottom" Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210 (1992). See also the "Dubai Internet City", "a strategic base for companies targeting emerging markets", which promises on its website to issue a 'Certificate of Incorporation' within an hour upon completion of the basic formalities, <http://www.dubaiinternetcity.com/> (follow "Services" hyperlink, then follow "Incorporation" hyperlink) (last visited June 1, 2005). Another example of a state trying to attract investors is Singapore, entirely committed to excellence in serving its citizens, see David K. L. Ma, *Delivering Results on the Ground: Improving Service to Citizens in Singapore*, 8 ASIAN J. POL. SCI. 137 (2000); Hing Ai Yun, *The Singapore State Takes Charge: Strategizing for the New Hi-Tech Service Society*, 7 EUR. PLAN. STUD. 189 (1999).

of virtual world providers is a fundamental difference compared with most real world jurisdictions, which in the absence of an overarching profit-making motive may decide to pursue strategies that do not maximize profit or growth. With limits placed on the amount of content virtual world providers can offer (as a function of the number of users they have and thus of their revenues), and financial constraints on how far they can lower their monthly fees to attract more users, competing on the regulatory framework that they offer becomes an increasingly important strategy.

In addition, network externalities make a virtual world more attractive for people to join the more users it already has: joining a larger community provides more possibilities for interaction and expansion of one's social network than joining a smaller virtual world.⁹⁴ Predictably, this network effect leads (at least initially) to strong first-mover advantages: whoever attracts the most users first is likely to attract more in the future. New competitors must offer a significantly better deal than the first mover in order to attract users to either switch to their virtual world, or to attract new people to join.⁹⁵

Retaining Users

The second goal of virtual world providers – user retention – has traditionally been easier to achieve. Participants in virtual worlds invest time and effort into acclimating to the software environment, exploring the virtual world, and building relationships with other participants. For this reason, switching from one virtual world to another entails significant transaction costs for users. Virtual world providers have re-enforced this stickiness by maintaining maximum control over their environment, yielding two advantages:

⁹⁴ It has become widely accepted that, according to the so-called Metcalfe's law, the value of a network is proportional to the square of the number of users, see Robert Metcalfe, *There Oughta Be a Law*, N.Y. TIMES, July 15, 1996, at section D, page 7, column 1. See generally OZ SHY, THE ECONOMICS OF NETWORK INDUSTRIES (2001); see also Raph Koster at http://terranova.blogs.com/terra_nova/2005/08/the_golden_1m_w.html (suggesting that there is a power law distribution of virtual worlds by size, just like cities in the US).

⁹⁵ Users may sometimes tire of a virtual world and thus migrate to another one after a period of time.

First, it enables virtual world providers to react quickly to crises in their virtual community, such as when a user breaks the rules or creates an unplanned innovation or behavior that threatens to erode confidence in the virtual world. For example, Sony Online Entertainment had to perform such an intervention when an *EverQuest* user devalued the currency with an ingenious scheme that threatened to introduce the online equivalent of the Industrial Revolution to the economy and thereby devalue the in-world currency.⁹⁶ Such stabilization is valued by users who have a substantial investment in the virtual world. Second, the maximum control that traditional virtual world providers enjoy implies ownership over everything about and within the game, including any virtual property created by the players. As a result, users who want to switch to a different virtual world face huge costs. Nothing that they have built in one virtual world —friendships, reputation, identity, not to mention any savings in virtual currency — can be transferred to another world. This combination of lock-in and control makes it relatively easy for virtual worlds to retain their users, and the bigger they get the more attractive they are for other people to join. New competitors can only break into if they offer a radically better deal.

A New Deal

In 2003, one such potential competitor emerged: Linden Lab, the provider of a new and sophisticated virtual world called *Second Life*. In the November 2003 *State of Play* Conference, Linden Lab made what turned out to be an important strategic move. It granted its users the

⁹⁶ See, e.g., Greg Sandoval, *Sony to Ban Sale of Online Characters from its Popular Gaming Sites*, CNET NEWS.COM, April 10, 2000, <http://news.com.com/2100-1017-239052.html?legacy=cnet> (last visited June 1, 2005); Daniel Terdiman, *Virtual Cash Breeds Real Greed*, WIRED NEWS, Jan. 23, 2004, <http://wired-vig.wired.com/news/print/0,1294,61999,00.html> (last visited June 1, 2005) (citing Dan Hunter who thinks that the biggest threat to the success of a virtual currency exchange may be the devaluation of the currencies themselves). When *EverQuest* users gain sufficient experience, they can produce artifacts, like virtual swords. These artifacts can then be sold in a virtual store in *EverQuest* for a fixed price. Through a shortcut, one user was able to produce and sell many virtual goods in a short period of time, simultaneously amassing huge wealth for himself and devaluing both manual labor and the in-world currency. In essence, the user had caused an industrial revolution, threatening the savings of hundreds of thousands of users. Sony intervened and modified the software to stop the shortcut from working. Such intervention is possible because of the complete control providers retain over their worlds.

right to own the intellectual property to their creations, and thereby introduced the concept of transferable property into their virtual world.⁹⁷

This strategic adaptation altered the landscape of virtual worlds. *Second Life* was not any longer another virtual Disneyland, in which consumers experience what the company has provided for them; rather they turned it into a marketplace, in which everybody can build and own property and utilize it for one's own gain. With this shift in the ownership of property, *Second Life* undermined the traditional concept of stickiness based on control. Because virtual worlds are nothing but information, if users can own their intellectual property in virtual worlds, they can own whatever they build and create. When they leave, they experience lowered switching costs.⁹⁸ They are like merchants moving from one market place to the next, or resource holders (of capital for example) selecting a suitable jurisdiction in a time of globalization.

Before *Second Life*, competition among virtual worlds was largely about first time users, as most people tend to belong to only one virtual world at a time. Ever since the grant of property ownership in *Second Life*, competition among virtual worlds is also about retention. In this very important aspect, granting intellectual property rights has made virtual world providers act more like governments who are competing to attract mobile resources.

But the impact of *Second Life's* decision to grant intellectual property (IP) rights extends to another level. If participants can join a virtual world and port their extant informational property into that environment, virtual world providers have less incentive to offer their own content. Virtual world providers may change from content providers to facility providers –

⁹⁷ See Dave "Fargo" Kosak, *The Future of Massively Multiplayer Gaming*, Nov. 13, 2003, <http://archive.gamespy.com/amdmog/week8/index.shtml> (last visited June 1, 2005). See also Cory Ondrejka, *Changing Realities: User Creation, Communication, and Innovation in Digital Worlds*, The Themis Group 2005, available at <http://www.themis-group.com/uploads/Changing%20Realities.pdf> (last visited June 8, 2005), at 18-9.

⁹⁸ This is not just true between virtual worlds, but also between a virtual and the real world; e.g. one software programmer took a game he created in *Second Life* to the real world and sold it in the real world to a startup offering games for mobile phones. The programmer made both virtual and real money with commercializing his software in both realms. See "Tetris Meets Bingo", *Wall Street Journal*, March 3, 2005, Page B3.

that is, providers of virtual space or real estate – which will be filled by the informational property that its participants either bring along from other worlds or create while being a member. This dynamic in turn weakens virtual world providers' ability to use content (one of their three primary strategies by which they can differentiate themselves) precisely at the same time that competition for existing users is heating up due to a newfound ability for users to take their IP with them when they migrate from one virtual world to another.

To be sure, providers can refuse to go along the *Second Life* model and continue to compete on the content that they design and offer in their virtual worlds. But once tens of thousands of users start designing their own content, and possess all the incentives inherent in the ownership of the IP rights to their creations, the comparatively limited amount of content providers create in-house with dozens or at best hundreds of employees cannot sustain any provider's competitive edge. Network effects will only exacerbate this problem, because users will join virtual worlds with the most content and activity. As the ability of providers to compete on content they control slowly erodes, they will eventually be forced to switch to an alternative differentiation strategy. Within this dynamic, lowering price will not be a long-term solution either for traditional virtual world providers competing with virtual world providers that grant IP rights: because the *Second-Life*-type providers do not have to create their own content, the virtual world providers can use the resulting savings either to lower user fees or create an even better simulacrum. Traditional providers, on the other hand, will have to continue to invest in content creation. The resulting cost disadvantage will make it impractical in the long run for traditional providers to compete on price.

While new users may choose worlds like *Second Life*, the high switching costs for users of traditional virtual worlds dissuades them from moving to *Second-Life*-type worlds at least in the short run. Yet, due to network externalities, each user who does make the switch to a *Second-Life*-type world lowers the benefits for all other users of their origin virtual world, not the least by lowering the revenue stream available to these traditional providers to create new content. Over time, like conventional TV stations, the traditional virtual world providers may find themselves in a challenging double spiral of progressively lowering revenue

available for content creation and diminishing network value for participants due to falling number of participants. It may not happen in the near term, but over time economics may force traditional virtual worlds to follow *Second Life's* lead.⁹⁹

Constitutionalization

The story of *Second Life* is an intriguing story of information economics, but the legal implications are much larger than they appear: By granting its participants IP rights, *Second Life* has given its users a significant stake in the virtual world. Individually, the users now “own” a part of *Second Life*, and as a collective body, *Second Life* participants thereby “own” most of the content of the virtual world. As a result, participants retain significant control over their world, and by extension, power.

Constitutional theorists will be quick to point out that the source of this power is still maintained by *Second Life's* provider, Linden Lab: theoretically, Linden Lab could – if it wanted to – reverse its policy. After such a change, any users who create new content would once again have to consent to transferring their intellectual property rights to Linden Lab. Because of this (at least theoretical) reversibility of the decision to grant users of virtual worlds “rights” Linden Lab’s decision is formally not akin to signing a virtual Magna Charta. With or without “rights” granted to its users, Linden Lab’s relations to *Second Life's* content creators remain contractual on an individual, rather than a societal level.

⁹⁹ For a short analysis of how this dynamic operates within a power law relationship, regulating the populations of virtual worlds, see a comment by Raph Koster on TerraNova: “Back in 2003 I did a graph of available MMORPGs in the Western market (which meant it included a few Asian games). What I found was a power law distribution typical of a network effect. One characteristic of these distributions over time in many domains is that the curve is essentially invariant. For example, the curve of “biggest cities in the US” has always been the same shape. The #1 city has always been x times larger than the #2 city, and so on, although which cities these were has changed over time. When a city rose in population or declined, it was as if the other cities “knew” what new numbers to adjust themselves to in order to retain the proper shape of the curve. According to this theory, once you get bigger than the biggest game, you’re on an inevitable path to the next “station” on the graph. Once you fall in size, you’re on a track to shrink until you fit the curve.” Posting at *The Golden 1M: World of Warcraft* (August 30, 2005) TERRA NOVA, http://terranova.blogs.com/terra_nova/2005/08/the_golden_1m_w.html (last visited September 14, 2005).

Within this dynamic, suppose Linden Lab would grant its users a “right” to decide – perhaps through referenda – what changes they want in the world. Such a delegation of governance to the people of *Second Life* might be viewed as a social contract, but the legal reality is different. At best, it is the contractual relationship between Linden Lab and each of its customers that changed. Should Linden Lab violate this right, users have no recourse other than leaving *Second Life*. Their choice is exit.¹⁰⁰

There is a very important difference, however, between Linden Lab granting such participation “rights” and the “right” it granted its users in November 2003. What Linden Lab granted – intellectual property rights - is one guaranteed by the *real world*. Granting IP rights in virtual worlds injects real world guarantees into a virtual world, creating a relationship between the two realms that we described as permeability. It binds Linden Lab not simply to a contract with its customers, but to the social contract of Linden Lab’s real-world jurisdiction. Any content created after this grant of real-world IP rights by *Second Life*’s users is their property, not Linden Labs. Should Linden Lab decide to change its policy again, content created before that change remains the users’ property.

Granting users real world IP rights in their creations therefore embeds real world legal DNA into *Second Life*’s genetic makeup, and subjects Linden Lab to an external authority. In a manner similar to a constitutional moment¹⁰¹, Linden Lab constrained its future behavior through its own decision. As economic forces prompt more virtual world providers to follow *Second Life*’s lead, we may witness an ever-increasing “constitutionalization” of virtual spaces. It is important to understand, however, that such a process of “constitutionalization”, while constraining what virtual world providers can do vis-à-vis virtual world users, is not synonymous with a movement towards democratic, or even better governance within virtual worlds. Linden Lab provided a *constitutional* moment, not a *democratic* one.

¹⁰⁰ The concepts of “voice” and “exit” were introduced by ALBERT O. HIRSCHMAN, EXIT, VOICE, AND LOYALTY: RESPONSES TO DECLINE IN FIRMS, ORGANIZATIONS, AND STATES (1970).

¹⁰¹ BRUCE ACKERMAN, WE THE PEOPLE (1991).

Perhaps the most intriguing insight into the “constitutionalization” of virtual worlds is that it has been possible because of a confluence of two factors: property rights and the permeability between the virtual world and the real world. Judge Easterbrook once famously suggested that virtual spaces need stable property rights.¹⁰² Linden Lab heeded his call not because a real world government mandate forced them to act, nor because of aggressive popular demand among its users: Linden Lab introduced intellectual property rights because of second order market forces. The need to compete – and thus retain and enhance its power vis-à-vis other virtual worlds – prompted it to relinquish power within its own jurisdiction. Yet the market only provides half the story. Without a real world legal system, and a real world guarantee of IP rights that transcends virtual worlds and their own internal rules, Linden Lab’s property rights guarantee would lack quasi-“constitutional” nature. This is the lesson of this part of the narrative: *real world law functions as a catalyst for the maturation of virtual world governance.*

Once virtual worlds constitutionalize by granting IP rights to their users, market forces will continue to fuel an intense regulatory dynamic. Put in more general terms, jurisdictions may be forced to relinquish power within their realms in order to gain competitive advantage among their peers, enabling a capital mobility that re-enforces the jurisdiction’s need to compete ferociously with others for this capital.¹⁰³ Perhaps unintentionally, Linden Lab unleashed the forces of globalization into the sphere of virtual worlds, thus providing us with a provocative case of regulatory dynamics.

Part IV: Competition, Coordination, and Transplantation: Virtual Worlds and Regulatory Interdependence

¹⁰² Frank H. Easterbrook, *Cyberspace and the Law of the Horse*, U. CHI. LEGAL F. 207, 212-3 (1996).

¹⁰³ *See, e.g.*, MANUEL CASTELLS, *THE RISE OF THE NETWORK SOCIETY* (1996); JAGDISH N. BHAGWATI, ARVIND PANAGARIYA & T.N. SRINIVASAN, *LECTURES ON INTERNATIONAL TRADE* (1998); JAGDISH BHAGWATI, *IN DEFENSE OF GLOBALIZATION* (2004).

Linden Lab's decision to grant ownership of IP to its users forces its competitors into a difficult choice. They can either continue to invest heavily in content development and accept the economic disadvantages of competing directly against the content that *Second Life's* users are creating, or follow Linden Labs' lead, granting IP ownership to their own users. User, too, now face a choice. They can either choose virtual worlds that permit them to retain their IP rights (like *Second Life*), or cede ownership to the virtual provider in exchange for rich content that a central team of professionals creates for them.

Ironically, the very innovation that energizes *Second Life's* strategy influences the choices users will make, thereby creating a mechanism which prevents the company from becoming too dominant in the marketplace. When *Second Life's* participants retain their IP rights, they experience lower switching costs. Should they ever choose to exit one provider, they can more easily port their information goods to a competitor. To be sure, exiting users still lose their social network and thus incur some transactional cost. However, they can at least take the fruits of their creative labor with them. Perhaps the analogy to use is that traditional virtual worlds do not permit its emigrants to take any property with them, while *Second Life* lets emigrants leave with their belongings. One can easily imagine what could happen if a group of *Second Life* users ever becomes disaffected with Linden Lab's management of the virtual world. They would take their content *en masse* and move to a different virtual world, leaving behind a barren virtual space. In this sense, every user who switches away from *Second Life* is felt more directly and immediately than in worlds where all IP is owned by the provider.

In this sense, a universe of virtual world providers following the *Second Life* model will approximate a situation in which the public votes with their feet more so than jurisdictions in the real world. Users who are willing to pay more – either in terms of capital (monthly fees) or time investment – will expect more from the virtual world that they choose; others may prefer a less sophisticated world at a cheaper price. In abstract terms, Charles Tiebout

famously described such a universe of people who use perfect residential mobility to choose the jurisdiction in which they wish to settle, solely based on their preferences.¹⁰⁴

As this practice of granting IP rights spreads among virtual world providers, how will these providers compete with each other? They cannot compete on content, because they do not control content anymore. Although they can compete on size (and thus by extension on the availability of user supplied content), virtual worlds have lost “stickiness” due to lowered switching costs, leaving providers with less control over size. They can still compete on price, but with no content and no population to control, they face the fate of commodity providers even more quickly.

Service continues to offer a path of differentiation for virtual world providers. For example, providers could offer superior content creation tools and a more attractive user environment (with easy capabilities to search objects and places in the virtual world), and thereby – temporarily at least – achieving competitive advantage.¹⁰⁵ Related to it and facilitated by what we term “constitutionalization” – the fact that granting IP rights is very hard to undo for an individual provider once they have been granted – virtual worlds may also compete on the regulatory frameworks they provide. Would this situation lead to an unfettered form of regulatory competition? Applying what we know about regulatory interdependence and cross-jurisdictional dynamics, we are going to venture into some educated guesses based on three modes of regulatory interaction: regulatory competition, coordination, and transplantation.

Regulatory Competition

¹⁰⁴ Charles M. Tiebout, *A Pure Theory of Local Expenditures*, 64 JOURNAL OF POLITICAL ECONOMY 416 (1956).

¹⁰⁵ In the long term, however, such a strategy may be undermined by the development of cross-work, cross-platform tools providing services from content creation to search.

One may be tempted to conceive of regulatory competition among virtual world providers in terms of a regulatory race to the bottom that will emerge between virtual worlds.¹⁰⁶ Within this dynamic, virtual worlds with the more permissive regulatory frameworks are thought to fare better than the more restrictive ones, because participants in these worlds prefer a situation with more rights (and thus more control) and less virtual government intrusion to a scenario with less rights and more government intrusion.¹⁰⁷ This dynamic would put pressure on the virtual world providers with restrictive frameworks to loosen their reins, so as to become more permissive and more able to retain existing users and attract new ones. Holding to this view, virtual worlds should eventually converge around the most permissive, least constrictive regulatory framework, one in which most – if not all – activities are permitted.

Others point out that regulatory competition may lead to a race in the opposite direction – to the top rather than to the bottom, and use research on California emissions standard as a case in point.¹⁰⁸ Races to the top appear when companies can reap efficiencies yielded by economies of scale.¹⁰⁹ In the case of California emission, it is more efficient for manufacturers to produce a single automobile model that complies with the toughest emissions standard – even if its cost structures are slightly higher – than to produce different models for each jurisdiction, each with its own emissions standard. This supposition has been bolstered by a re-evaluation of the so-called Delaware effect, by which one assumed that firms incorporate in Delaware because it offers the most lenient and permissive corporate legal framework. However, a re-evaluation of existing evidence¹¹⁰ seems to indicate that when a new company must select the jurisdiction for its incorporation, that choice has at least as much to do with how well the state applies and administers its corporate law as

¹⁰⁶ See, e.g., William Cary, *Federalism and Corporate Law: Reflections on Delaware*, 83 YALE L.J. (1974), 663.

¹⁰⁷ This effect may be amplified in virtual worlds because of the libertarian or anti-authority leanings of many of the early adopters of technology platforms. See Barlow *supra* note 1.

¹⁰⁸ See DAVID VOGEL, *TRADING UP: CONSUMER AND ENVIRONMENTAL REGULATION IN A GLOBAL ECONOMY* 161 (1995).

¹⁰⁹ See David Lazer, *Regulatory Interdependence and International Governance*, 8 *Journal of European Public Policy* 474 (2001), at 476-80.

¹¹⁰ See Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the "Race-to-the-Bottom" Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210, 1210 (1992).

with the state's corporate law. Because Delaware judges are well versed in the intricacies of corporate law and work in a system wherein clerks, consultants, banks, lawyers, and accountants offer a wealth of expertise, the state has created an efficient governance environment, which results in a network effect that continues to attract more businesses to its system of incorporations. The important lesson from both California and Delaware is that regulatory competition may prompt people to choose the jurisdiction not with the least restrictive regulations, but the one with the best regulatory and governance framework. Applying this lesson to the problems of virtual worlds, one might conclude that we will witness a race to the top instead of a race to the bottom. Will competition among the virtual world providers over norms in order to attract users lead to a democratic wonderland, in which virtual worlds converge around regulatory frameworks facilitating democratic participation? Will virtual worlds prove that a society of free people with guaranteed property rights will ineluctably move towards democracy? Is the market the great democratizer after all, at least in the rarified space of virtual worlds? Not necessarily.

Both arguments – that a race to the top or a race to the bottom will occur among virtual world providers – may rest on incorrect assumptions. Delaware-type races to the bottom take place if one group of people is selecting a jurisdiction against the obvious preference of another group: managers select Delaware because of corporate laws favoring them over shareholders, while shareholders would prefer to incorporate elsewhere, but fail to get their way because – as collective action theory explains – they lack group cohesion. This is a completely different situation to virtual worlds, in which individual users choose suitable providers.

The “race to the top” argument is also flawed, for two reasons. First, the evolution of virtual worlds' regulatory frameworks depends on how ‘good governance’ is interpreted by its users.¹¹¹ Some users may understand good governance in terms of the opportunities it opens for democratic participation. Others might stress the rule of law and adjudicative fairness. A

¹¹¹ See also RHEINGOLD, *supra* note 17 (citing Benedict Anderson's argument).

third faction may prefer efficient governance over democratic and fair processes and still call the resulting system ‘good.’ In short, the reassuring label of “a regulatory race towards good governance” may *not* imply movement towards a virtual democratic nirvana, but perhaps towards an efficient virtual Singapore.

Second, the ‘good governance’ argument presupposes that people prefer better governance compared with more lenient rules; i.e. that the Delaware revisionists have correctly pegged the influence of the governance environment, and the original Delaware hypothesis is wrong. However, this claim may not be universal and may depend heavily on the perceived costs and benefits of the alternatives. For some groups a regulatory framework that reflects their needs is more important than maximizing democratic participation or judicial fairness. If a religious person cannot practice her faith, or if a person is prohibited from being together with somebody she loves because of her sexual orientation, she may prefer to switch to a more accommodating virtual world than to fight to change the rules of her home virtual world through participatory mechanisms. In short, in cases of substantive disagreement, for some users “exit” may be preferable to “voice”.¹¹²

So the result of a “race to the top” may not take the form of a convergence of regulatory frameworks around principles of democracy and fairness, but rather the form of a rich, evolving *marketplace* of governance systems catering to a vast spectrum of different preferences. Certainly, given the Western world’s long history of deliberative legislatures and independent judiciaries, the center of gravity of the virtual worlds market will compete on establishing the notion and practice of “good governance” as the implementation of democratic processes and fair systems of public administration.¹¹³ Other virtual world providers, however, may be more libertarian and offer their users more freedom and fewer constraints in certain regulatory areas. A third group of virtual worlds may thrive on

¹¹² *Cf.* HIRSCHMAN, *supra* note 100.

¹¹³ Compare the abovementioned attempts to promote democratic governance in LambdaMOO and MediaMOO, *supra* note 75.

providing efficient governance above all, the online equivalent of making the trains run on time.

There will still be races. As user preferences change over time, any equilibrium among virtual world providers will be temporary. Virtual world providers will compete ferociously for users based on their regulatory preferences. But in the absence of a convergence of user preferences, these races will not bring about an overall convergence towards one particular regulatory framework. In this sense, they may become “races apart.” Moreover, such races will not be fueled solely by competing regulatory frameworks. After all, good governance is not the only differentiating mechanism in the marketplace of virtual worlds, making it impossible to predict the exact trajectory of regulatory frameworks in virtual worlds.

Coordination

The need to attract and retain users prompts virtual world providers to differentiate and compete against each other. Superficially, and in contrast to regulatory interdependence in the real world, there is little need for coordination between virtual worlds. Unlike real-world jurisdictions, virtual worlds are like self-contained islands. They do not share common resources, like air, space or the sea, and do not have to manage common borders with one another.¹¹⁴

Yet, the ability of users to leave one virtual world and join another may – perhaps surprisingly – create a need to coordinate. This is linked to switching costs users incur.¹¹⁵ Virtual worlds will want to make it as easy as possible for users to join. As more virtual worlds move towards the *Second Life* model of granting IP rights to users, switching becomes cheaper, prompting providers to tempt existing users of other virtual worlds to switch. Users

¹¹⁴ As such, one may (erroneously) assume that virtual worlds closely resemble Tiebout’s theoretical model; this however overlooks switching costs (which despite being greatly reduced will remain) and spillover effects.

¹¹⁵ See CARL SHAPIRO & HAL R. VARIAN, INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY 103-4 (1999); SHY, *supra* note 94.

will, however, still have to export their intellectual property from one virtual world and import it into another. It is in the virtual world provider's interest to make this import of IP as easy and simple as possible. To create software that allows for easy import of information goods designed in other virtual worlds, providers will have to uncover and understand the way by which content is represented in other virtual worlds. This will be difficult, as there is little obvious incentive for virtual world providers to make public how content is represented in their worlds. Doing so would only enable other virtual worlds to create import functionality, and thus lure users away from one's virtual world. Moreover, because of real world IP laws, virtual world providers will have difficulties in legally reverse engineering how other virtual world's content coding works.¹¹⁶

This leaves virtual world providers in a bind. They have a difficult time creating the import functionality desired by potential new customers. By the same token, they do not wish to divulge information about their own system, lest they make themselves vulnerable. The result is a stalemate, unless one adds the users to the equation. Users have a keen interest in being able not only to own the intellectual property of the virtual objects that they create, but also to be able to move them from one virtual world to another without excessive trouble. For users, having IP rights *in principle* is of little value if the content they have created is not transferable *in practice*. User pressure may lead providers to make transferability

¹¹⁶ See Section 1201 of the Digital Millennium Copyright Act which bans acts of circumvention, and the distribution of tools and technologies used for circumvention, *see* Digital Millennium Copyright Act, 17 U.S.C. § 1201 (1998). Although Section 1201 also includes a number of exceptions for certain activities, such as reverse engineering, these exceptions have been criticized for being too narrow, *see, e.g.*, Pamela Samuelson, *Intellectual Property and the Digital Economy: Why the Anti-Circumvention Regulations Need to be Revised*, 14 BERKELEY TECH. L.J. 519, 537-57 (1999); June M. Besek, *Anti-Circumvention Laws and Copyright: A Report from the Kernochan Center for Law, Media and the Arts*, 27 COLUM. J.L. & ARTS 385 (2004). For a similar debate on the anti-circumvention rules in artt. 6 and 7 of the European Copyright Directive, O.J. L 167/10, June 22, 2001, *see, for example*, Markus Fallenbock, *On the Technical Protection of Copyright: The Digital Millennium Copyright Act, the European Community Copyright Directive and Their Anticircumvention Provisions*, 7 Int'l J. Comm. L. & Pol'y 4 (2002); Kamiel J. Koelman, *A Hard Nut to Crack: The Protection of Technological Measures*, EUR. INTELL. PROP. REV. 272 (2000); Marie-Therese Huppertz, *The Pivotal Role of Digital Rights Management Systems in the Digital World*, COMPUTER UND RECHT INT'L 105 (2002); Karin Retzer, *On the Technical Protection of Copyright*, COMPUTER UND RECHT INT'L 134 (2002).

possible.¹¹⁷ Game theory, however, indicates that they should only do so if other providers reciprocate. Otherwise they risk providing a public good, on which other providers free-ride.

The situation, in principle, can be solved through coordination.¹¹⁸ Providers could share with each other the relevant information to make content transferable from one world to the other. This would heed to user demands, but also ensure that every provider who does share would have access to the information of others as well. Eventually such coordination may lead to common standards on how content is represented in virtual worlds. Complementing the technical issue of transferability, coordination may extend to the legal framework within virtual worlds. It may make sense for virtual worlds to coordinate and harmonize the terms by which they grant their users the right to retain IP, in order to bring the regulatory side in line with the technical one. In practice, however, coordination will not be without substantial challenges, as fierce competitors in the marketplace have to come to the table and negotiate access to the inner workings of their businesses.

As user preferences pressure providers to coordinate, the resulting common standards will create positive spillover effects for those providers taking part in standardization. As we have mentioned, the universe of virtual worlds may be closer to Tiebout's ideal model, but due to persistent switching costs for users may only approximate it. The existence of spillover dynamics (such as that due to standardization) adds a powerful additional reason why one should not expect a stable equilibrium among virtual world providers. What may sound superficially as counter-intuitive, such coordination fueled by user preferences will likely further competition among virtual world providers.

¹¹⁷ A first step in that direction is the recent decision of Sony Online Entertainment to install a special auction site called "Station Exchange" that will allow EverQuest members to trade virtual goods, *see* Daniel Terdiman, *Sony Gets Real on Virtual Goods*, WIRED NEWS, April 20, 2005, http://www.wired.com/news/games/0,2101,67280,00.html?tw=wn_story_page_prev2 (last visited May 31, 2005). As theoretically predicted, providers granting IP rights, like Linden Lab, are actively working on import and export functionality, because their content creating users demand it.

¹¹⁸ *See* Lazer, *supra* note 109, at 478-80 and 485-7.

While it is likely that some coordination will eventually occur among virtual world providers, including direct regulatory coordination, the coordination processes are unlikely to be free of difficulties, temporary setbacks, and uneven outcomes, because large providers have more negotiation power than smaller ones, while (due to network effects) smaller providers will benefit disproportionately from common standards and content transferability compared with larger providers. The result may be a messy process, not unlike those witnessed in the areas of network interconnection and software antitrust.¹¹⁹

Transplantation

Even in the absence of formal coordination, flows of information from one competitor to another may lead to mutual learning and play a role in regulatory interdependence¹²⁰. A potential ensuing convergence towards “best practices” through mutual learning may shortcut a process that would take time and effort, and be fraught with temporary setback if only based on competition.

In the context of virtual worlds, the most intriguing information flows are created by users moving from one virtual world and its regulatory framework to another. Such immigrants do not simply add their human and other capital to the virtual world they join; they also bring along knowledge and expertise of the inner workings of the regulatory framework of another virtual world, including where it succeeds and fails.

¹¹⁹ See, e.g., James B. Speta, *A Common Carrier Approach to Internet Interconnection*, 54 FED. COMM. L.J. 225 (2002); David Gilo, *A Market-Based Approach to Telecom Interconnection*, 77 S. CAL. L. REV. 1 (2003); Thomas M. Jorde, J. Gregory Sidak & David J. Teece, *Innovation, Investment, and Unbundling*, 17 YALE J. ON REG. 1 (2000); Mark Cooper, *Open Access to the Broadband Internet: Technical and Economic Discrimination in Closed, Proprietary Networks*, 71 U. COLO. L. REV. 1011 (2000). For the Microsoft antitrust litigation see, for example, *United States v. Microsoft Corp.*, 97 F. Supp. 2d. 59 (D.D.C. 2000), *aff'd in part, rev'd in part* 253 F.3d 34 (D.C. Cir. 2001). For a survey of the antitrust cases involving Microsoft, see Amanda Cohen, *Surveying the Microsoft Antitrust Universe*, 19 BERKELEY TECH. L.J. 333 (2004).

¹²⁰ See David Lazer & Viktor Mayer-Schönberger, *Governing Networks: Telecommunication Deregulation in Europe and the United States*, 27 BROOK. J. INT'L L. 819, 847-9 (2002); Lazer, *supra* note 109, at 480-2.

Earlier, we have noted that virtual worlds are regulated through two forms of code: software and contracts, both of which are created and maintained by the virtual world provider. When users move from one world to another, they transplant parts of both regulatory mechanisms, through their experience and through the architectures encoded into their information goods. This second point requires some explanation. Every information good that these users have created in the environment of their former virtual world reflects the constraints embedded into the overall software model of that world. Transplanting this content from one virtual world into another shapes the landscape of software encoded rules and constraints of the new host world in ways that are neither completely transparent nor expected by the user or recipient virtual world. Such imported content is viral, in that it may embed part of its DNA of constraints into the host's space.

The implantation of encoded and hidden rules represents a means of regulatory transplantation that is distinct from the transfer of human expertise. This software-based rule transplantation is important, because as Lawrence Lessig has eloquently reminded us, code is a less transparent means of regulation; it is thus rarely subjected to the same level of societal scrutiny as conventional governance suggestions made by a recent immigrant to a virtual world. Consequently, through immigration and import of information goods, a virtual world may change in unexpected ways. These flows of regulatory constraints embedded in code and transplanted from one virtual world into another provide a third, thought-provoking mechanism of regulatory interdependence to virtual worlds.¹²¹

Part V: Virtual Worlds and Real-World Governance

Over the course of this article, we have examined the challenges of governance in virtual worlds. The original picture of governance being shaped by the virtual world provider and its relationship to its customers evolved. Pointing to permeability, we highlighted the potential

for spillover effects to emerge between a virtual world and the real world and the consequent need for governance structures in the virtual world to react to activities in the real world and vice-versa. A specific such spillover – adhering to real world IP rights in virtual worlds – introduced a “constitutional” dimension, which constrains how virtual worlds may regulate not through a simple subjugation of virtual worlds under real worlds (and ‘real’ regulatory frameworks), but instead leads one to see regulation in terms of market forces and the mobility of virtual worlds’ customers. This finding in turn led us to broaden the picture once more, portraying the regulation of virtual worlds in the context of regulatory interdependence among virtual worlds.

This is the complex world real world regulators find themselves in: Virtual worlds set rules enforced through software and contract. Virtual world activity may spillover into the real world, and vice versa. Virtual world regulators are driven by commercial instincts shaping their regulatory frameworks through cross-jurisdictional interdependence. Given these parameters, how can real-world lawmakers regulate virtual worlds, if at all? We offer a number of options, each of differing value:

Regulating Virtual World Providers

Virtual world providers are the most obvious targets of real world government regulation. Because they maintain the virtual world’s infrastructure, they control the central bottleneck of virtual community interaction. Through their code and contracts, they possess the physical and legal abilities (respectively) to enforce rules in the virtual world. Because they are in control, as Gary Lichtman and Eric Posner have argued in the comparable context of ISPs, they should be held liable by real-world regulators.¹²² It does not matter whether virtual world providers own the content of their virtual worlds. The onus of liability to enforce is

¹²¹ See Viktor Mayer-Schönberger, *Into the Heart of the State: Intervention Through Constitution-Making*, 8 TEMP. INTL & COMP. L.J. 315, 317 (1994).

¹²² See Douglas Gary Lichtman & Eric A. Posner, *Holding Internet Service Providers Accountable*, July 2004, U Chicago Law & Economics, Olin Working Paper No. 217, <<http://ssrn.com/abstract=573502>> (last visited June 2, 2005).

linked to their ability to control, and they obviously possess that control. In this important way, virtual world providers are like Napster.¹²³

By the same token, real world lawmakers may wish to think twice before regulating virtual worlds. The more liable they hold providers for enforcing real-world rules in their virtual worlds, the less these providers will be able to delegate virtual world rule making to their participants. In turn, this inability to delegate reduces the attractiveness of such virtual worlds. Users may decide to switch to a virtual world with a more libertarian or democratic governance structure – one in which real world laws are either not being strictly enforced, or one in which they have a voice in determining what real world laws shall apply in their virtual world. The desire to switch will be particularly strong if users are residing in a different real-world jurisdiction from their virtual world provider. In such cases they would be subjected to rules from a different real-world jurisdiction in their virtual world – a real-world jurisdiction to which they may not have a connection and in which they do not have a voice.

At the same time, virtual world providers who operate from more lenient real-world jurisdictions would become more attractive to users compared with providers domiciled in restrictive real-world environments. In a typical case of regulatory arbitrage, users will join virtual worlds which are situated in states that are more hospitable not just to virtual worlds in general, but to private ordering and self-governance of virtual worlds in particular. Two sets of regulatory competition are likely to emerge. First, there is regulatory competition among virtual world providers. Second, insofar as virtual world providers create a positive revenue stream for the jurisdiction in which they are domiciled, regulatory competition may emerge among real world lawmakers. In combination, these two dynamics may lead to a

¹²³ Napster operated a centralized database, indexing all files on the network. It was found liable for contributory and vicarious copyright infringement by the Ninth Circuit in 2000. The court held that Napster's actual knowledge of the infringing activities, and its material contribution to infringement by its ongoing provision of the site, provided a basis for contributory liability, see 239 F.3d at 1017 (9th Cir. 2001). For further analysis, see Robin D. Gross, *9th Circuit Napster Ruling Requires P2P Developers Ensure No One Misuses Their Systems: Supreme Court's "Betamax" Defense to Secondary Liability Narrowed*, http://www.eff.org/IP/P2P/Napster/20010226_rgross_nap_essay.html (last visited June 8, 2005).

diminishing ability of real world lawmakers to regulate virtual worlds effectively, creating a dynamic of more regulation with less effectiveness.

Constraining Regulatory Competition

Alternatively, real world regulators may limit real world regulatory competition through real world inter-jurisdictional coordination. Finding common regulatory ground among real world lawmakers would limit the ability of virtual worlds' users to switch to virtual world providers outside of the reach of real-world regulators. As has been argued elsewhere such coordination does not need to be comprehensive and coverage does not have to be complete in order to reduce competitive dynamics.¹²⁴ Virtual world providers who are already required to follow their jurisdiction's real-world rules would welcome real-world regulatory coordination, in as much as this coordination is leveling the playing field. However, given differing societal values, achieving sufficient real world coordination is not without difficulties.

If coordination is hard to achieve, real world lawmakers could also opt to constrain regulatory competition among virtual world providers by making it difficult for users to switch providers. After all, if users cannot switch providers or can do so only with great difficulty, providers face less competitive pressure to retain users, the main fuel of regulatory competition among virtual worlds. Such a restrictive measure, however, may be politically difficult to support and technically difficult to implement. What elected real world lawmaker would want to be perceived as being against property, against markets, against democratic rule, and against choice, even if only in virtual space?

Real world regulators may choose another, more palatable third strategy to constrain regulatory competition. They may opt to restrict users from choosing virtual world providers outside their real-world jurisdiction. Users could still choose among providers within their

¹²⁴ See Lazer, *supra* note 109, at 484-7.

jurisdiction. This tactic could successfully limit regulatory competition around attracting new users and level the playing field for virtual world providers by interdicting users from joining virtual worlds outside of their real world jurisdictions. Competition among virtual world providers would still continue, but direct competitors would all reside in the same jurisdiction and be bound to enforce the same real world rules in their virtual worlds. In this way, the global market of virtual worlds would be broken into national markets along jurisdictional (and thus real-world regulatory) borders.

All these options suffer from one potentially fatal flaw. They posit that virtual world providers are discrete entities with unified control over their infrastructures and, as such, are capable of maintaining a bottleneck of control over their users. In essence, these options all assume that reining in virtual world corporations will be a task akin to reigning in the Napster file sharing network, with regulators able to go after the corporation which provided the central file-sharing directory on a central server. However, because virtual world providers do not themselves provide content if they follow the *Second Life* model, but rather (like peer-to-peer file-sharing client) only provide the mechanism of sharing, there is – at least in principle – no reason why virtual worlds need to reside in *one* particular physical place, such as a server farm that is controlled and operated by a real-world commercial organization, like Sony or Linden Lab.

It is perfectly possible to envision a virtual world that exists on a decentralized peer-to-peer (p2p) infrastructure, much like current p2p file sharing technology. To be sure, this architecture would call for technical capabilities that may not yet be fully in place, like bandwidth for the significant data traffic between peers, local storage space on peer computers, and (perhaps) even more computing power.¹²⁵ However, Moore's law and related improvements to the availability and affordability of computing power, storage, and bandwidth may create such capabilities in the near future. Creating the software engine for a

¹²⁵ See John Borland, *A Virtual World with Peer-to-Peer Style*, CNET NEWS.COM, May 9, 2005, http://http://news.com.com/A+virtual+world+with+peer-to-peer+style/2100-1025_3-5698499.html?tag=nefd.lede (last visited June 7, 2005).

p2p-based virtual world certainly requires significant effort, but numerous (and sophisticated) peer-to-peer software products evidence that this task is surmountable, if – and this is the decisive condition – there is sufficient demand for such software. Taking only the Linux kernel as an example, the market demand for a POSIX-compliant operating system that runs on Intel architecture drove a student project from a Finnish university into a formidable competitor to Microsoft in less than 8 years.¹²⁶ What would happen if virtual worlds received similar support from developers and a set of corporations that are poised to gain from the expansion of real-world software markets into P2P virtual worlds? Such projects are not hypothetical: a community-built project called Solipsis is getting very close to releasing a 1.0 production version of a 3D virtual world.¹²⁷

In fact, any regulation imposed on virtual world providers which alienates the users of that virtual world could turn into the catalyst for the advent of completely dispersed, decentralized, and *global* virtual world system, which would be, as the p2p phenomenon so starkly demonstrates, practically impossible to reign in without fundamentally modifying the Net's architecture. If real-world regulators push too hard, we may soon witness "Napster's Second Life", and p2p based virtual worlds may eventually transmogrify into an unregulable space that is both everywhere and nowhere, realizing at long last John Perry Barlow's, David Post's and David Johnson's early visions. So what, then, can real-world regulators do?

Defensive Posture – Restricting Permeability

If the regulation of virtual worlds does more harm than good by undermining real-world regulatory authority, real-world lawmakers may want to focus their regulatory zeal not on

¹²⁶ For more information on Linus Torvalds and the Open Source movement, see LINUS TORVALDS & DAVID DIAMOND, *JUST FOR FUN: THE STORY OF AN ACCIDENTAL REVOLUTIONARY* (2001); *see also* David Daimond, *The Peacemaker*, WIRE, issue 11.07, July 2003, *available at* <http://www.wired.com/wired/archive/11.07/40torvalds.html> (last visited June 8, 2005); Steve Hamm, Linus Torvalds' Benevolent Dictatorship, BUS. WK. ONLINE, August 18, 2004, http://www.businessweek.com/print/technology/content/aug2004/tc20040818_1593.htm?chan=tc& (last visited June 8, 2005)

¹²⁷ *See* Solipsis at <http://solipsis.netofpeers.net/> (last visited September 14, 2005).

subjugating virtual worlds, but on isolating them. If permeability between virtual worlds and real worlds is lowered, regulators may hope that spillover effects can be contained. For example, real world regulators may opt to prohibit the real world sale of information objects from virtual worlds, reinforcing a division between the two worlds. Such a strategy of embracing the “separateness” of real and virtual worlds would carefully craft a regulatory framework to limit virtual world externalities from spreading into the real world. On the other hand, it would be a stark about-face for real-world regulators, who have successfully battled this “separateness” since its inception. It also remains to be seen to what extent such a separation is feasible.

Moreover, if real world governance abandons virtual worlds by insisting on separation, users of such worlds will want to have this governance vacuum filled. Put differently, a strategy of separation may only exacerbate and accelerate the development of robust virtual world governance structures. Although this result may not be a bad thing, a strategy of separation undercuts the ability of real world governance structures to influence the evolution of virtual world governance. In this way, real world governance loses doubly.

Real world assisted virtual world self-governance

The ultimate alternative may be the pragmatic realization on the part of real-world regulators that robust democratic governance must derive from those that are governed, not from an outside regulatory body. The best that one could wish for virtual worlds is that they are able to bring about their own governance structures and encourage the development of systems that are participatory and fair.

Consequently, real-world regulators may want to find themselves in the uneasy role of midwives for the birth of self-governance in virtual worlds, inculcating the values that they hold dear from real-world governance systems into these nascent attempts at self-governance. This work may be the best and most lasting contribution real-world regulators can make. It ensures that democracy’s enduring values are encoded in each virtual world’s

governance DNA, thereby facilitating a pragmatic working out of policy and regulatory challenges faced by virtual worlds, including those caused by permeability with the real world.¹²⁸

This midwife strategy has the advantage that it does not depend on the existence of specific control bottlenecks. If the *demos* agrees to institute a set of rules, the virtual world could be run on a distributed peer-to-peer infrastructure as well as a more centralized architecture. Platform-independence is the eminent advantage of self-governance: it does not require an external enforcement structure (in the form of a provider that has control of information bottlenecks).

One may look at this option for real-world regulators and find it to be a poor-man's version of other alternatives, having reduced the role of real-world regulators to providing advice and guidance. To be sure, much of the success or failure of the initiative will depend on the ability of real-world regulators to advise ably and guide well. But helping a fledging *demos* to develop its very own governance system is more than just window dressing. Ensuring that the appropriate values are embedded in the governance system of a virtual world is nothing short of injecting one's expertise into a people's *constitution*. As one of us has examined in the context of real constitutional endeavors, such value implantation can outlast any other form of regulatory intervention, and if done correctly, is vastly superior to other options.¹²⁹ This strategy may therefore not simply be the most pragmatic, but also the most congruent with the brave new world that virtual worlds are establishing.

Conclusions

In this article we examined the phenomenon of virtual worlds and how our real world's legal system will interact with these worlds. We started by describing virtual worlds, examining

¹²⁸ Viktor Mayer-Schönberger, *supra* note 121, at 326-8.

their astonishing growth and size. We then looked at the in-world governance challenges virtual worlds face, including spill-overs from the virtual economies to the real world. In the following part we examined the economics of virtual world providers and the importance of intellectual property ownership in virtual worlds. We applied the theory of cross-jurisdictional interdependence to virtual worlds through the modes of competition, coordination and transplantation. We suggested that as economic pressures make it difficult for virtual world providers to resist granting IP rights to users, virtual world providers will find themselves in fierce competition with each other, not in small part based on the regulatory framework they can offer their users. In the final part of this article, we predicted that these cross-jurisdictional dynamics among virtual worlds would restrict the ability of real world lawmakers to exert control over virtual world. Too much real world legal control, we suggested, could lead to virtual worlds moving to a peer-to-peer distributed network, in which – as p2p file-sharing has amply demonstrated – territorially bounded and democratically legitimized real world law would lose most if not all of its power. To avoid such an outcome, we concluded with advice to real world lawmakers against regulating virtual worlds, and proposed instead that they encourage virtual worlds to develop participatory law making and fair law enforcement mechanisms.

¹²⁹ Viktor Mayer-Schönberger, *supra* note 121, at 333-4.