

Bits, Bytes, and Property Rights

Chris Milroy

An entirely new universe is emerging right under our noses. It is invisible unless one has the technology to detect and interact with it, but it contains societies just like our own. This universe is digital, composed of tens of millions of humans interacting via internet-linked computers, and broken into hundreds of self-contained, virtual worlds.

The virtual universe lacks at least one other major feature, besides physicality: property rights. Analyzing why and how property rights are different in a virtual context is critical to understanding the challenges faced by legal systems and businesses as they move online in the 21st century. Until the law catches up to the emerging realities of virtual worlds, companies and individuals will have to bear substantial risks.

Following John Locke's assertion that the purpose of government is to protect property from both internal and external threats [1], most modern governments recognize the right to property as one of the basic rights of a society. In particular, the rights to prevent others from using or destroying one's property, when accompanied by limits such as those provided by eminent domain laws, are an important source of growth and development in modern societies [2]. Such rights tie users' interests to the long-term sustenance and value of resources and prevent the so-called "tragedy of the commons" [2], wherein each user of a resource consumes, in the short-term, more than the long-term optimal amount.

Virtual property, however, possesses several characteristics that make it fundamentally different from material property. Most importantly, virtual property is not scarce, in the sense that everybody could in theory simultaneously have as much as they want. Indeed, one upcoming online game, *Infinity: The Quest for Earth*, claims that the number of full potential planets in the game could reach the hundreds of billions—which means that visiting one per second for 100 years would still cover under five percent of the total game universe [3]. If everyone can have as much land as he or she wants, the need for land rights is diminished.

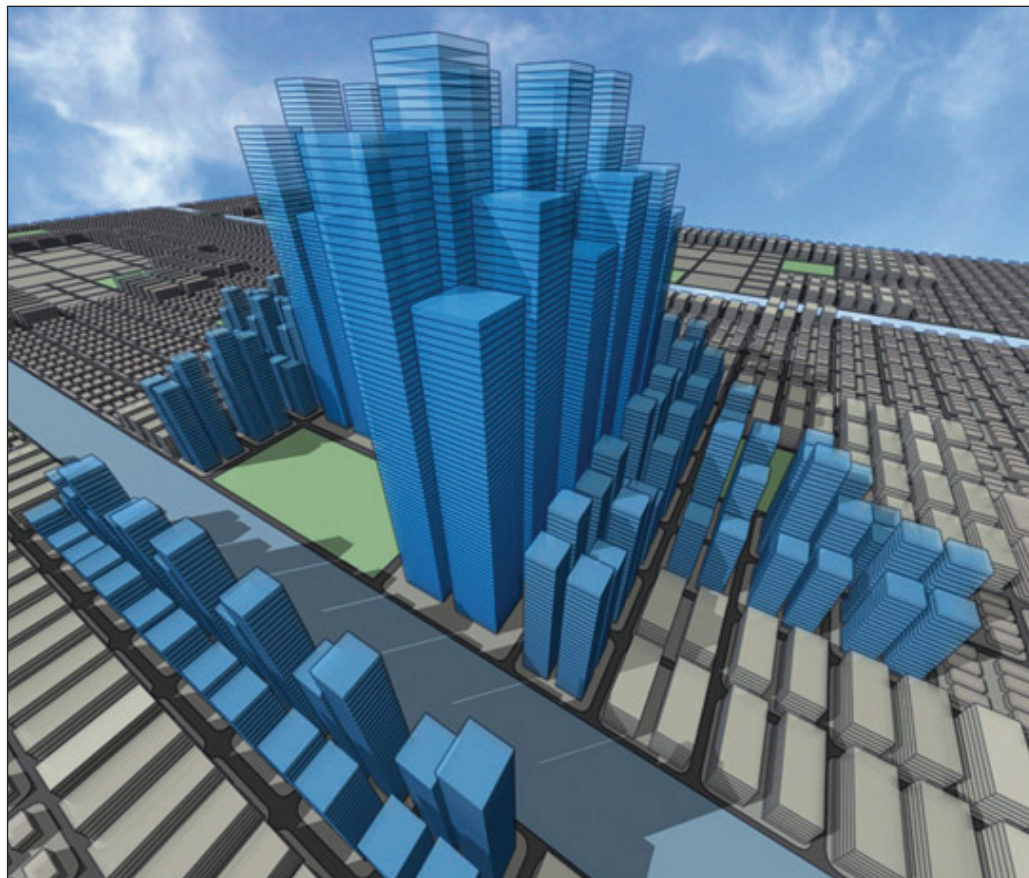
Similarly, the ease with which the owners of virtual worlds can create virtual property is a vast change from the material world. Under a

labor-based theory of property, such as the one espoused by Locke, it would seem that the property in a virtual world is nearly valueless to the creator (since it takes little time to generate any individual piece of property from computer code) but potentially very valuable to the person who buys and develops it. On the other hand, if the goal of property rights is to promote economic growth and development, the

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lack of scarcity in virtual worlds suggests that such rights are unnecessary except insofar as they fulfill the function of intellectual property rights: creating artificial scarcity for socially-useful purposes. The choice of a philosophical foundation is therefore highly important prior to extrapolating laws governing virtual property.

This leads to a whole host of instances where standard property rights would seem misapplied in a virtual context. If courts assign virtual property a value in non-virtual currency—as Chinese courts did in 2003, when they awarded damages to a man whose account in the popular Chinese online game *Hongyue* (Red Moon) was hacked and his virtual



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weapons stolen [4]—then the companies that own virtual worlds increase their liability every time they create an in-world object that could be stolen or accidentally erased.

On the other hand, failure to establish ownership rights to virtual property will leave the inhabitants of virtual worlds unprotected. In South Korea, which does recognize virtual property, the police received 22,000 complaints of cyber-crime involving virtual property and arrested over 10,000 teenagers in a single year [5]. One would expect that such violations, which appear to cause enough material damages to warrant state intervention in countries such as China and Korea, are simply going unreported in countries that do not have such laws.

If corporate liability is tied to the value of virtual property, then an important legal question will have to be answered. How should the law treat world-owning corporations, which have such omnipotent control over the people—or their representations, called “avatars”—in the worlds? Corporations can control every characteristic of virtual property: the amount of it available (scarcity), whether it lasts forever or degrades over time (durability), and how effective it is at producing other property or achieving tasks (utility). Each of these qualities affects the value of the property, and changing any one of them could potentially be interpreted as stealing value from the in-world owners of the property.

Such interpretations are not much removed from the interpretations being asserted in court cases today. In *Bragg v. Linden Lab*, the plaintiff claimed that the defendant (Linden Lab, the owner of the virtual world *Second Life*), by deleting his account after he allegedly engaged in transactions that subverted *Second Life*'s land auction systems, owed him damages for the value of the property that was removed from his control by such deletion; the case has now been settled for undisclosed terms [6].

The other major legal issue surrounding virtual prop-

erty is how it relates to the material property, owned by the company managing the virtual world, on which the virtual world runs. If virtual property has value, then shutting down the server on which the world resides would be akin to destroying an entire country. As far back as 2001, economist Edward Castronova determined that the virtual world *Everquest* produced a per capita gross national product (GNP) that, in dollar terms, fell between those of Russia and Bulgaria; its nominal hourly wage was found to be approximately \$3.42/hour, using the conversion rate derived from sales of in-world goods on websites like eBay [7]. Newer worlds like *World of Warcraft* have over 100 times

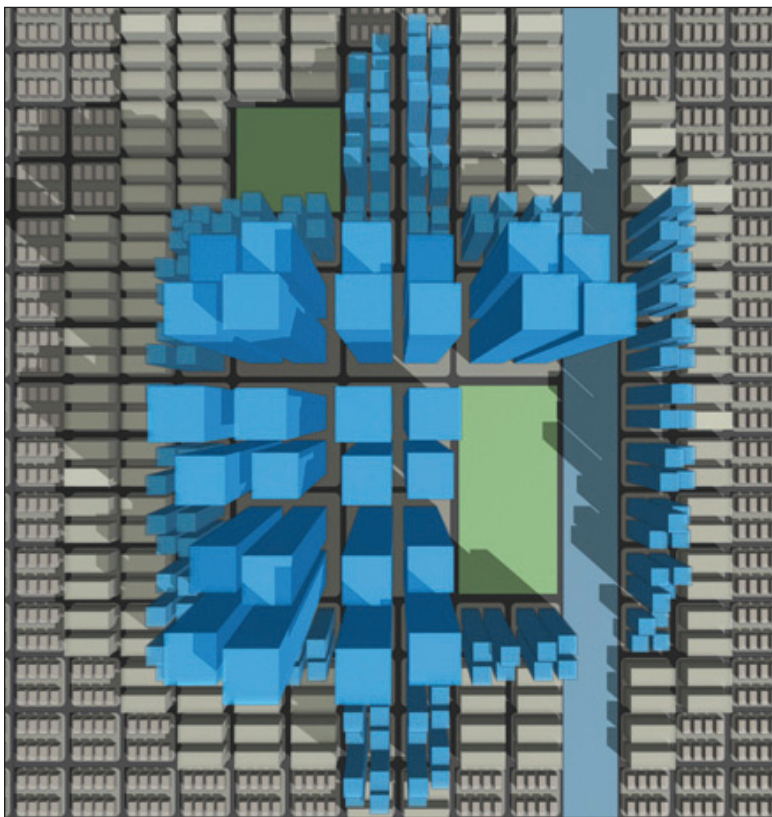
“ Citizens of virtual worlds would pay a tax to the world-owners ”

the inhabitants that *Everquest* had, so the dollar value of the property contained therein is likely much greater. In *Second Life*, almost 200 citizens are earning over \$60,000 per year in US\$ from their activities in-world, buying and selling virtual goods, services, and ideas for profit [8].

When virtual worlds have that much material property value, the economic consequences of shutting them down are substantial. Players' claims to the value of their virtual possessions may take the form of a request to require a company to continue operating a virtual world after it has decided that the world is no longer profitable. It is not currently clear, given the vague legal status of virtual property at present, what courts would make of such a demand.

Since virtual worlds have to be hosted on servers in physical locations, real-world governments have varying claims and interests over their economic and legal implications. The Swedish government recently started taxing income derived from virtual worlds, as Dan Miller, Senior Economist for the U.S. House of Representatives' Joint Economic Committee notes, and United States citizens could potentially be required to pay taxes to Sweden under that law [9]. Beyond taxation, governments may want to involve themselves in the internal affairs of virtual worlds for purposes of regulation, for protection from political speech, or for other reasons. Enforcement becomes a major challenge under these conditions: who is allowed to intervene in virtual worlds, and for what reasons?

All of these issues are extremely complex and have been the subject of intense legal debate. Various theories have been advanced to reconcile modern law with the unique status of virtual environments, and some user groups have started to establish their own solutions as well. Internally, users have formed in-game governments and political organizations that control property and resolve disputes between members. Examples include guilds in *World of Warcraft*, corporations in *EVE Online*, and a variety of pseudo-self-governing entities in *Second Life* including “Extropia” [10] and “The Confederation of Democratic Simulators” [11]. While these organizations have



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no legal force in the material world—they cannot stop the virtual world owners from shutting down the simulation, for example—they do have some measure of power within the virtual world, deriving fundamentally from the consent of the governed.

On the legal side, Edward Castronova has described what he calls “interration” (from *terra*, Latin for world), allowing a world to be defined by its owner as either allowing or disallowing conversion of in-world assets into material currencies [12]. Allowing such a process would open in-world income up to taxation and regulation. An interrated world—one that chose to legally form a entity

property rights and risk world-builders moving their operations to other nations.

Perhaps the same principle that applies in the material world would work in relation to the virtual: in exchange for robust protection of property rights, citizens of virtual worlds would pay a tax to the world-owners, which would pay for the upkeep and security of the servers on which the world is run and other maintenance costs. In effect, citizens would become shareholders in the world in which they live, the god-like power of the owners limited by the rights ceded to the citizens. Worlds would then be free to establish their own governments—if they wanted them. This policy would

not only have the benefits of providing a money-sink for world owners (an important element in controlling inflation and maintaining value in the world) and limiting owners’ liability for the results of in-world events, but it would also distribute power democratically, capitalizing on the leveling power of the internet.

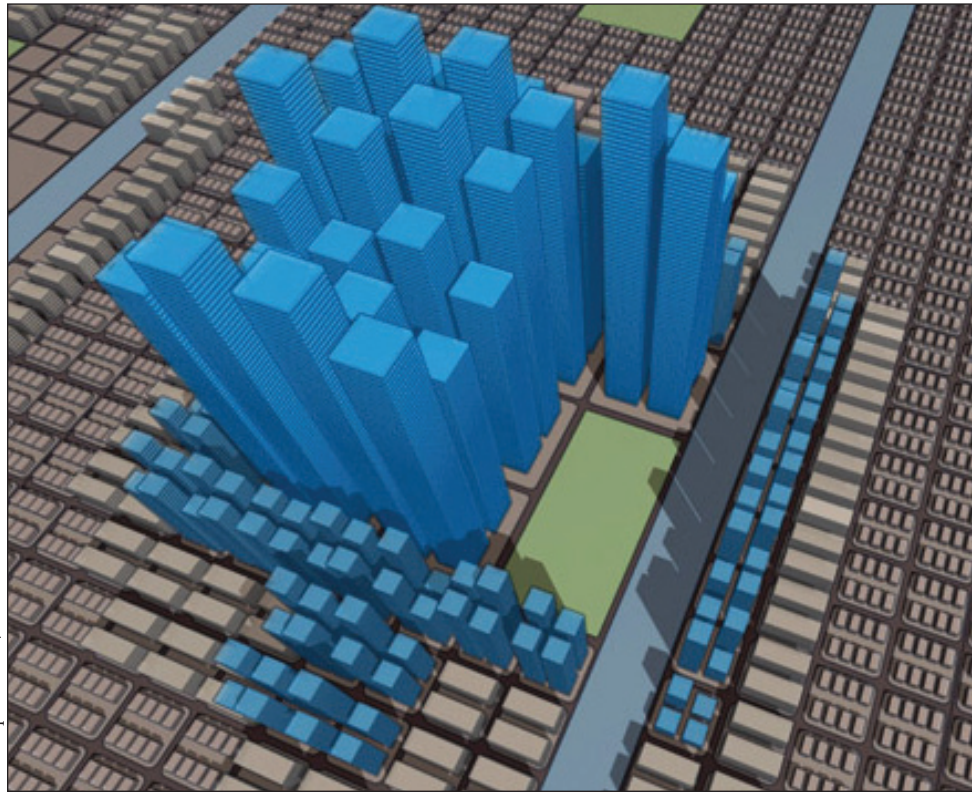
If we fail to act swiftly, we face the likelihood of a new virtual frontier growing up wild and unregulated. Unlike the frontiers of old, this one is global, pervasive, and high-tech—and potentially all the more dangerous because of its reach. Virtual worlds could provide a place where all inhabitants are really equal, free from the constraints into which they were born. To provide that freedom, though, they need to themselves be free of the intrusion of the material world. Virtual property, thoroughly defined and applied, may provide exactly this condition: a way to delineate the boundary between the real and the virtual that provides maximum

freedom and adequate incentives for development.

If we do not deliberately and rapidly establish virtual property law, however, we may be left with a system wherein citizens of virtual worlds cannot be confident of anything—not even that they will still exist tomorrow. How can worlds grow beyond being games, in such an environment?

This is humanity’s first chance to create a universe from scratch—it would be a shame to waste it. ■

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completely disconnected from the material world—would not be subject to real-world governments because its virtual assets would not be convertible to material ones or vice versa [12]. It would, in effect, become an entirely separate world. Worlds that did not go through interrateration, however, would be treated as effectively sovereign countries—with taxes on “imports” to the material world through purchases of virtual goods.

The number of people interacting in virtual worlds will likely continue to grow exponentially with increasing internet access. These pressing questions will need to be addressed soon, so that these worlds can grow in a secure and stable environment. Individual countries will have to answer the question of whether they can fail to protect

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