



The New New Economy: Earning Real Money in the Virtual World

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Take a trip to Lusk and you will find a sign for a classic wood dining set for \$250. Walk or fly around Luskwood and you will find what looks like an up-and-coming development with a few properties for sale. Land is also available in Ahern, Dore and Morris, and property values are surging.

An average day in suburbia? Not quite. This is a day inside Second Life, a virtual world created by San Francisco-based game developer Linden Lab.

Welcome to the virtual economy, where currencies such as the Linden dollar trade against the U.S. dollar, companies like Internet Gaming Entertainment (IGE) create markets for everything from magic shields to potions, and entrepreneurs sell notary services and the latest fashions. One of the most popular games, World of Warcraft, reached one million North American players in August, three months ahead of its first anniversary. The games are particularly hot in America and Asia. After World of Warcraft was released in China last June, 1.5 million paying customers signed up in a month.



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Such ventures -- known as massively multiplayer online role-playing games (MMORPG) -- have spawned economies that would rival those of a small country but fly largely under the radar of economists, government statisticians and people beyond the 12-to-35-year-old demographic. However, these economies are becoming increasingly important, says Wharton legal studies professor [Dan Hunter](#), adding that they could redefine the concept of work, help test economic theories and contribute to the gross domestic product in the United States. "Increasingly, these virtual economies are leading to real money trades," notes Hunter, one of a handful of academics closely following this trend.

Another is Edward Castronova, a professor at Indiana University, who has written a series of papers examining the virtual economy which he estimates at somewhere between \$200 million to \$1 billion. In general, virtual economies are supported by assets collected during a game -- such as the power to slay a dragon -- that are then sold on the Internet for real dollars to other players looking for a competitive edge.

Steve Salyer, president of IGE, says the market for virtual asset trading could hit \$1.5 billion in 2005 and \$2.7 billion in 2006. Salyer's projections are a blend of internal data and research from outside sources such as DFC Intelligence and the Yankee Group. "Nobody can say for sure how big the market is," adds Dmitri Williams, a speech communications professor at the University of Illinois at Urbana-Champaign. "It's not like you can go on the street and poll people to find out." In addition, he notes, many of the players who buy virtual goods are internationally based in locales such as China and Korea, making the dollars they spend hard to track.

While the size of the market is debatable, experts agree that virtual economies are expanding rapidly and warrant more attention. "It's really amazing that this hasn't gotten more attention," says Kendall Whitehouse, senior director of information technology at Wharton. "You can learn a lot from these worlds."

Harvesting Virtual Assets

Virtual economies started out as simple affairs, many of them derived from fantasy role playing games like Dungeons and Dragons. And most business models for these games include a monthly subscription and thousands of players who acquire "loot" --like virtual gold, magic powers, shields and other items.

This virtual wealth was innocuous until people began paying real greenbacks for it on eBay or any number of trading sites. What changed? Players like Hunter wanted to explore virtual worlds, but didn't have time to play long enough to reach the highest levels. When time-pressed people met the gamers who spend most of their day in these worlds, a market was born. "If I want to visit a new place in a virtual world, it's hard with a job," says Hunter. "But if I have \$20, I can buy powers and explore. It's becoming a significant trade."

Here's how a transaction occurs: One "avatar," or a digital representation of a person, finds another within the game who has a desirable power. After a negotiation, the deal can be completed through an instant message screen and online payment systems like PayPal. Conversely, these trades can happen in an open market through web sites that act as stock exchanges where virtual loot is swapped for real dollars. Increasingly, companies are setting up exchanges to facilitate virtual asset trading. Linden Lab, for example, this month started its own currency exchange for its Linden dollars. Previously, an independent site, Gaming Open Market, had traded Linden dollars at an exchange rate of 1,000 Linden for \$3.30.

One of the largest players among the exchanges is four-year-old IGE, which facilitates virtual asset trades for games such as World of Warcraft, Everquest, Lineage and Final Fantasy XI. IGE president Salyer says his company buys goods from independent "farmers" -- players who harvest virtual assets -- and then sells the merchandise on his network.

A large unresolved question about virtual worlds is whether mining and trading digital assets can be defined as real-world work. For instance, should the U.S. government track employment in these worlds? Hunter and Whitehouse both suggest that life in the virtual world is indeed work. After all, work is merely creating something tangible that is valued by others. "Economics is really just about choosing preferences," notes Hunter. "If I'm willing to spend \$20 on a magic breast plate, that's tangible. Increasingly, these worlds are becoming workspaces."

For some highly-skilled players, it could actually be a significant source of income. If a player in Asia can acquire one power an hour by playing a game and then sell it for a profit to another player, he could make a living wage, accounting for exchange rates. Not surprisingly, such farming operations have been set up across the globe to facilitate these transactions. It has become "a cottage industry," says Castronova. "Individuals farm gold (virtual assets) for a company and then take a wage as independent contractors."

In the U.S., it's unlikely that a virtual world worker could produce enough U.S. dollars to make a living. But the equation changes significantly for players in China and other parts of Asia due to weaker currencies compared to the U.S. dollar, says Castronova. He estimates a gamer could pull in roughly half the U.S. minimum hourly wage -- between \$3 and \$4 -- by mining these virtual economies. "For foreign laborers, this can be a reasonable wage," he adds, noting, however, that the big money isn't made in mining loot but in bringing together farmers and taking a cut of the proceeds. "The money isn't in the farming, but the facilitating."

IGE's Salyer downplays that assertion, noting that the costs of maintaining a trading network and customer support "offset revenue measurably." He does acknowledge that players like IGE will generate the most revenue in the short run, but adds that independent contractors can earn big profits as well. For example, in Second Life -- a game that launched in June 2003 and that now has about 60,000 players -- Australian resident Nathan Keir, known as Kermitt Quirk in the game, created Tringo, a cross between bingo and Tetris. According to *The New York Times*, Keir made \$5,000 selling virtual copies of the game within Second Life and later sold worldwide licensing rights for a low-five figure sum and royalties to San Francisco-based Donnorwood Media. Since Linden Lab allows players to keep the intellectual property

of anything created in Second Life, Keir was able to sell his game in the real world.

To Cory Ondrejka, vice president of product development at Linden Lab, Keir's tale is an early indicator of what's possible in virtual economies, which share characteristics with their real world counterparts. "Our game is based on what you own. It's land speculation, reselling land, being a landlord and creating goods and services," says Ondrejka. "It's not much different than the real thing. We're just scratching the surface."

Economic Petri Dish

Experts such as Hunter argue that the burgeoning virtual asset market embedded in games like Second Life and World of Warcraft will create economic petri dishes to monitor consumer behavior, currency changes and productivity.

As a result of the gains in the virtual economy, game companies may increasingly look like financial institutions, says Whitehouse. For instance, Linden Lab has changed its business model, which was initially based on subscriptions. Today, the company takes an increasing role in its Second Life economy -- trading currency, selling land, allowing members to build and then charging a tax.

The structure of Second Life means Linden Lab has to know a little economics -- including the role of a Central Bank -- since executives are something akin to virtual Alan Greenspans. Linden Lab controls money supply and land supply. Too much currency could lead to a crash on the open market. Too many plots for sale could depress property values. According to Ondrejka, Linden Lab's Second Life game, which generates \$2 million worth of transactions a month, has managed its money supply based on a dollar amount per player. "It's the equivalent of developing a monetary policy for a population that's growing 10% a month," he says.

Worlds like Second Life can provide for micro-economic insights on the way people react to changes, adds Ondrejka. Linden Lab has already learned one lesson: Don't tax too much. In 2003, a group of players protested what they viewed as excessive taxation on players who built those properties that added the most value to society. The issue was resolved by introducing permanent structures to the game. Previously, a player's property left when he did, but was still taxed as if the property were there full time. Today, property and businesses can remain in the game -- and potentially generate revenue -- even when a player isn't online in Second Life. "This greatly simplified the system, allowing residents to forward invest," says Ondrejka.

Castronova notes that those types of skirmishes are what make virtual worlds so interesting for economic studies. For instance, a flat tax could be tested along with inflation models, money supply changes and elasticity of demand. "As academic people, we had economic theories, but didn't have the opportunity to test them out at the social level," he says. "We couldn't experiment before. These worlds are a tool to experiment and change characteristics of central banks."

The Importance of Credibility

Like any fledgling economy, however, commerce in virtual worlds could become fragile if buyers and sellers can't trust central banks and the markets that trade magic weapons, shields and powers. "The economy has to be credible," says Whitehouse. "You can't just revalue currency and exchange rates on a whim. It's not unlike putting your faith in a government's central bank. [In Second Life], Linden Lab has to be credible."

Aside from the behavior of central banks, fraud is also a potential issue as impotent powers are sold to unsuspecting buyers. To combat those problems, IGE guarantees that its articles are genuine and its transactions are secure. Other video game companies, such as Sony, have created their own methods to

verify items. eBay, with its buyer and seller rankings, also deters fraud.

Castronova notes that Internet scams such as "phishing" -- sending unsolicited emails that mimic real e-commerce providers -- are also a problem. These emails go after players looking for immense gaming power that will allow them to jump a few levels. But once the purchase is complete, the buyer can't use the power because it doesn't deliver what was promised. Another worry is that hackers could penetrate a game and complete what is essentially a virtual bank robbery, converting virtual dollars to real ones, says Hunter.

CNET's News.com in August reported that a group of cheaters illegally created a huge amount of "Everquest II" currency over a weekend. Sony, creator of the game, says the wayward players caused the game's economy to suffer 20% inflation in just 24 hours before they were caught. Castronova acknowledges that fraud can become a big issue as the dollar volume of transactions increases, but for now, he says, "fraud isn't a bigger issue here than it is elsewhere."

Furthermore, as these markets evolve tensions are likely to surface between game players who are in it just for fun and those looking to profit, says Timothy Burke, a history professor at Swarthmore College who has written several papers on virtual worlds.

Burke argues that the conflict between the profiteers and the purists who want to keep commerce and game playing separated can't be ignored. Why? The purists are the ones who make games popular through word of mouth, spend the most time playing and view these virtual worlds as a place to meet their friends. If games become too capitalistic, these players could quit and dry up the market for virtual assets. Burke says the purist would argue that commerce saps the fun out of games. "Is it fun if a game has an economy that looks like the real world?" asks Burke. "It's a philosophical debate."

Castronova splits the gamers into thirds: purists who don't want transactions for money to occur, casual players who want to buy power, and those who don't care.

Social concerns and economic markets are increasingly intertwined in virtual worlds as they become more commercial, Williams adds. "The perceived economic value of these markets comes from the social dynamics of playing the game. People play because they are social and any economic model has to account for that. It's a constant tension."

According to Hunter, the balancing act between economic and social desires will ultimately find an equilibrium point, but for now "the desire to have access to these markets is extremely strong."

Codes of Conduct Required

Whitehouse sees no reason why virtual economies can't continue to gain momentum. In the not-too-distant future, companies like IGE could emerge as global e-commerce giants. Nevertheless, there will be questions to resolve as virtual economies grow, says Hunter. For instance, who will ultimately have jurisdiction of these virtual worlds? What will be the social implications of working in a virtual world?

Salyer suggests that regulation will be a key topic as virtual economies grow. The BBC reported on August 10 that a Korean man died from playing online games for more than 50 hours straight. And in China, officials have moved to limit the time gamers can play because of concerns about addiction and overuse. According to an August 23 report in the *Financial Times*, China recently introduced "an 'anti-online game addiction system' intended to protect players from the mental and physical perils of spending too much time in front of computers." The system, "which will encourage players to play less by cutting the benefits they gain in online games, is to be implemented by local Internet companies that have

signed a code of conduct drawn up by China's press and publications administration." According to Salyer, "While the implications are difficult to determine as they relate to the U.S. and other free market countries, it will be increasingly incumbent upon market participants to respond to such issues."

Castronova expects virtual worlds to become more commercial as companies find more efficient ways to mine virtual assets and as transaction volume increases. Companies could use virtual worlds and economies to try out new products and organizational structures, he adds. "Companies will have to begin paying attention. Playing these games can totally change hierarchical structures. What do you tell your CEO when the guy in the mailroom who is a level 89 wizard just ordered a vice president to surrender his parking spot and he actually did it?"

Hunter expects that virtual economies will grow to the point where they will become a vital sector of the U.S. economy. "This is something I would encourage my children to do," says Hunter. "There will be significant trade here, both in the virtual and real world."

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