

Governance & Economics of Virtual Worlds

Foundations of Interactive Game Design
Prof. Jim Whitehead
March 7, 2008



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Help sessions

- Two help sessions
 - Help for Game Maker, RPG Maker, C#/XNA
 - **Friday, March 7 (today)**
 - ❖ 4pm-7pm
 - ❖ Engineering 2, room 180 (Simularium)
 - **Monday, March 10**
 - ❖ 6:30pm-8:30pm
 - ❖ Engineering 2, room 180 (Simularium)
 - Bring your laptop with game code
 - ❖ Otherwise, bring your game on a USB drive/CDROM, etc

Game Demonstrations

- Originally planned on having every student demonstrate their game in class
 - Not logistically possible
- Game Demo Night
 - Friday, March 14, 5pm-9pm
 - Engineering 2, room 180 (Simularium)
 - If you want to demo your game, come to this event and show it off
 - Game Maker: just tell us YoYoGames URL
 - RPG Maker, C#/XNA: bring laptop
 - ❖ or CDROM/USB Drive if you don't have a laptop

Final Class Game Demonstrations

- The best 6-7 student games created this quarter will demo their games in front of the entire class
- Monday, March 17, normal class time
- Judges from the games industry will be present
- Selected teams will have 5 minutes each to demo their game
- The best game team will win a Nintendo DS for each team member (limit 2)
- A fun, intense event

Final Game Submission

- Final game projects are due Tuesday, March 11, at 1:45pm
 - Turn in to box outside Prof. Whitehead's office door
 - Engineering 2, room 273
 - Or, turn in on class Monday (easy option)
- Read submission instructions online, on class website
 - www.soe.ucsc.edu/classes/cmeps080k/Winter08/final-project.html

Game Maker Final Game Submission

- Game Maker
 - Submit your game online to the YoYoGames website
 - ❖ Register for the site
 - ❖ Share your game by clicking on the “Share” button
 - ❖ To submit game, will need:
 - Title, brief description, genre, username of collaborator (if collaborator also has a username on the YoYoGames site)
 - At least 2, and no more than 10 images for your game
 - The Game Maker (.gmk) file for your game
 - ❖ A series of screens at the YoYo Games site will ask you for this information
 - ❖ **Do not** wait until the last minute. This process will take some time. Start at 11am Tuesday at the very latest.
 - Turn in a typed, printed out game manual
 - ❖ Must include the URL of your game on the YoYo Games website

Other Game Submission

- Non-Game Maker
 - Submit a CDROM or USB drive with:
 - ❖ All source files to your game
 - ❖ Executable image for your game (if possible)
 - ❖ Any files needed to play your game
 - Image files, sound files, etc. for RPG Maker, for example
 - ❖ **Label the CDROM or USB Drive** with your game name, team name, and member names.
 - **Your final class grade** may suffer if we are not able to associate your team's grade with you
 - USB drives: write this on a sheet of paper, fold it, and then tape it to the USB drive
 - **C#/XNA**
 - ❖ See details in lecture notes from March 4 lecture

Game Manual

- Title page
 - Game name, group name, member names
- Main text
 - 1-2 paragraph summary of game
 - **Brief** description of how to play the game
 - ❖ Does not have to be long
 - Description of how player wins or loses the game
 - ❖ What are win conditions and lose conditions? Do not assume we can just figure this out.
 - Description of the controls of the game
 - ❖ How does player move? What actions can they do? How does the player cause the player avatar to do those actions?
 - ❖ If there are cheat keys, describe those
 - Inclusion of screenshots and artwork from the game is desirable, but not required
 - **Must be typed, and printed out. No electronic submission.**
 - **Game Maker:** Must include URL to your game on YoYoGames site

Governance in Virtual Worlds

- Lecture based on Edwin Castronova, *Synthetic Worlds*, Univ. of Chicago Press, chapter 9, “Governance”, pp. 205-226.
- Any collection of people will have conflicting common or individual interests
 - Politics emerges naturally from this situation to allow negotiation among conflicting choices
- Virtual worlds therefore have politics

Would you support a dictatorship?

- Virtual worlds are not democratic
 - There are no elected leaders, representatives, city councils, mayors, judges, etc.
- Typical form of government is
 - Isolated moments of tyranny
 - ❖ Interactions with customer service representatives
 - Embedded in widespread anarchy
 - ❖ Generally there is no functional government
- If you play most MMOs, you are supporting a dictatorship
 - But it's just a game...

The Tyrant

- The “Coding Authority”
 - ▶ This represents the company that owns the virtual world, along with the developers who work for this company
 - ▶ For WoW, it is Blizzard and its developers
 - ▶ The Coding Authority reserves for itself dictatorial power over everything in the world
 - ▶ Within the world, its powers eclipse even those of real-world dictators
 - ▶ Powers are spelled out in the EULA and the Code (or Rules) of Conduct for the world
 - ❖ The vast majority of users enter the world without realizing what these documents require.

A strange sort of despotism

- Unlike most despots, the governed in virtual worlds pay monthly dues, and have a choice of other despots
- There is much incentive to keep inhabitants happy, and paying their dues
- “Perhaps, then, this is the best possible form of government: a highly efficient despotic regime that, thanks to competition with other despotic regimes, does its best to provide legitimate services for the people.”
Castronova, p. 208

Despotism or Anarchy?

- Hard to find any governance at all
 - Interactions with customer service representatives are infrequent
 - ❖ They frequently do not take action based on a used request
- Due to this, the Customer Service State is very hands-off
- Leads to a state of anarchy (lack of government)

What about Guilds?

- Guilds are an institution within the game that could potentially provide government-like features
 - Guilds are typically run politburo-style
 - ❖ Close group of friends controls leadership and membership
 - ❖ Democratic guilds are uncommon
- Guilds typically operate in their own best interests, not for that of society as a whole
- Guilds are often the most flagrant violators of social norms

Why Anarchy?

- There is no incentive for anyone to govern
- Coding authority:
 - Good government costs too much
 - ❖ Would require too many customer service representatives
 - ❖ Chief drawback to Customer Service State: will provide the minimum level of services to retain population
 - ❖ Leads to a minimalist state
 - But, do not want to cede real power to users
 - ❖ Makes game world unpredictable, creates new power center

Discussion: Democracy?

- Is democracy the answer to poor governance in virtual worlds?
 - Have multiple countries in the virtual world
 - Each with its own (elected) government
 - ❖ Some territories may remain anarchic
 - Governments have real powers
 - ❖ Can tax, jail, evict, kill, etc.
 - If a bad government gives citizens the urge to migrate, they would only have to leave the territory, not the world
- Key question: how to integrate AI into the governance structure of the world

Thought Questions

- How far does this go?
 - At what point do people develop stronger ties to their virtual nation than their real world nation (if ever?)
 - Imagine a realm of overlay nations on top of existing nations
 - At what point does a virtual world become a real nation?
 - How can citizens ensure the longevity of a virtual world even after it is no longer economically viable as a product?

Economics in Virtual Worlds

All Virtual Worlds Have Economies

- An integral part of the playing experience
- An active marketplace makes the world feel “alive”
- Real world economics is the study of choice under scarcity
- The ultimate scarce resource is time
- Players in virtual worlds must choose how to allocate their in-world time
 - This creates the in-world economy

Objective of Economic System in a Virtual World: Fun

- Real-world economic systems are guided by policy decisions based on ethical choices
 - Utilitarianism, Kantianism, etc.
- In a virtual world, policy choices are guided by the need to make the world fun
- Central question: **what makes an economy fun?**
 - Edward Castronova poses this question in “Synthetic Worlds”, p. 175, Univ. of Chicago Press, 2005.
 - He goes on to describe features that make an economy fun

Consumption and Acquisition

- It is fun to acquire something that you have come to desire
 - You enjoy using the object
 - Fun to collect information about the object's qualities and prices, and make a choice about what to buy
 - Process of making a choice under scarcity is enjoyable, a kind of puzzle
 - Joy of acquisition, accumulating an empire of objects
 - ❖ One player in Ultima Online had over 10,000 shirts, just for fun

Fair Returns to Work and Skill

- Performing an activity that may (or may not) be fun, and get a great reward for them
- Virtual worlds frequently find players performing boring, mundane tasks to achieve some kind of advancement
 - Example of player in EverQuest who waited for days near a ruin to await a particular NPC, who carried the Glowing Black Stone
 - Getting the stone indicated you had waited by the ruins a very long time – you had survived a horrifically boring experience

Creation of Things

- It is fun to make things
- It is fun to take simple things and combine them into more complex things
- Rags-to-riches arc is very enjoyable for people

Mission and Purpose

- A fun economy gives people a meaningful role to play
- Roles need to be individual
- Contributing to some larger-level competition adds to the fun
 - Contributing to your clan/nation winning

Robust Competition Under Equal Opportunity

- Competing with other people is fun
- But it must be fair

- **Risks and Bargains**

- An economy should have some uncertainty, luck should play a role
- Some actions should be rewarded, and others punished, at random
- A risk system should ideally reward rational risk-taking
- “A world without risk is not just boring, it is empty of things to cherish.”

Property and Crime

- Owning things feels good
- Having things stolen feels bad
- Seeing criminals brought to justice feels good
- For some, committing theft is fun
- Perhaps a fun economy should have property, theft, and jail?

Chaos and History

- A fun economy should have macro-level (world-wide) major events and epochs
- Provides a sense of history
- Upheavals provide opportunities for advancement, as well as for losing wealth
- Overly stable game worlds are boring

Principles of Synthetic Economy Design

- Say you were to create a virtual world
- What design principles would you use in creating this world?
- Castronova offers several proposals in *Synthetic Worlds* (pp. 182-204)

Make Sure There Is Economic Activity

- Key to generating economic activity is trade
- How to get trade? Players must have unbalanced needs.
- Ensure players have many different needs
 - Food, clothes, equipment, housing, transportation, entertainment, etc., and all require money
- Ensure players can only create a small part of these needs by themselves
 - That is, do not allow players to be self-reliant without trading
 - Needs must be met with consumables, not durables
 - Players must be required to refresh their needed items
- Create specialized economic roles
 - Each person has something the other wants, since each person specializes in the production of different goods.
 - Gives each player a meaningful role

Consciously Locate and Publicize Economic Activity

- Marketplaces must be located so as to respect transportation
 - Eerily abandoned city in EverQuest, with marketplace nearby in a tunnel that is a major transportation hub.
- Important to put geographic distance between resources needed to make things
 - Have berries numerous in one region, and wheat in another – need to trade to make pies
- Economic activity should generate a buzz – people should be able to notice that the activity is taking place
 - Marketplaces are social spaces too

Generate Earnings and Investment

- In order to buy things, players must be able to sell things, especially their specialization
- A challenge is setting the wages appropriately

Generate the Value of Things

- How are prices set?
 - Want to ensure things cost enough to be valuable, but not so expensive they are too difficult to obtain.
- Merchant AI is a common technique
 - Buys items at one price
 - Sells items at a higher price
 - Typically have infinite supplies of money and items.
 - When players go on quests, they obtain items, which are then sold to the Merchant AI, effectively converting them to money

Problems with Merchant AI

- Merchant AI assumes:
 - Infinite supply
 - Infinite demand
 - At different prices!
 - Assumption is that the local economy is so small, no amount of import/export will affect global prices.
- If buy/sell prices are too close:
 - There is no incentive to trade with other players.
 - Merchant AI is typically more convenient.
- If the spread is larger:
 - Players can get a better deal with player to player trade

Control the per-capita capital stock

- “Inflation” is a common problem in virtual worlds.
- Typically two issues that are perceived as one problem:
- A gradual increase in price level (actual inflation)
- Gradual increase in the amount of physical capital per player
 - That is, a real increase in earning power for players: their money buys more stuff

Inflation

- As players perform actions to make money (killing monsters, making items), they are effectively increasing the money supply.
 - The game just declares there to be new gold pieces
 - Not a transfer of wealth (the monster never really had the money), but a creation of new money
- More money chasing a fixed, or slowly growing, set of goods, leads to these goods being more expensive.
- Killing monsters and looting cash from them is always inflationary, since it introduces cash without introducing new goods to buy.

Increase in Physical Capital

- Experienced players in virtual worlds accumulate better equipment over time
 - They sell or trade their old equipment to newer players when upgrading.
- In worlds where gear never decays, the stock of physical capital (gear) increases over time.
- This leads to a decrease in the cost of gear – as players play the game, they create more gear, increasing supply.
- The real cost of the gear decreases over time, making it easier for new players to buy gear
- This has the effect of increasing their purchasing power.
- It has the side-effect of making it easier for new players to go on quests, get cash, and buy better gear.
- Also means that later players have an advantage over early players

Introduce Social Mobility

- One problem is that once players become rich, they stay rich
 - Not very exciting
 - Need to make it possible for rich players to lose their riches
- Require rich players to actively monitor a portfolio to keep wealth?

Recover from Breakdowns

- In complex virtual worlds, players occasionally find loopholes that allow them to gain immense wealth quickly
- Leads to inflation, and only those players taking advantage of the loophole getting ahead.
- One solution is progressive taxation of quickly achieved wealth
- Gain too much money in one day, and the system takes 98%.
- Removes incentive to find loopholes.