Governance & Economics of Virtual Worlds

Foundations of Interactive Game Design
Prof. Jim Whitehead
March 7, 2008
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/cmps080k/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


• 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
“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.