Intro to Game Design

More money, more massive, more players, more problems

Fall 2015
Mondays & Wednesdays 9:30 AM-12:15 PM

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Today’s Class

• QUIZ
• **ECOSYSTEM**: a game for and about everyone
• Massively multiplayer economics
• Designing for large groups
Ecosystem: How to Play

Every player is randomly dealt one kind of creature:

- **Prickly Pod**
  - Power: +1 energy each night

- **Grass Grazer**
  - Power: Can touch each other for defense

- **Spidery Scavenger**
  - Power: Hurt other spidery scavengers

Depending on creature type you start with some:

- **Health**
- **Energy**

Gain & lose these by interacting with other players. If you run out, you’re dead; come to game HQ to respawn as a new creature.
Ecosystem: How to Play

- Put your nametag on so that other players can see your creature type
- During the **day** (lights on) walk around, and touch other players on the shoulder to interact.
  - You may only interact with each other player **once per day**.
  - Check the interaction grid (coming up next) to see what happens.
  - If you lose energy, you give it to the other player (“take” actions)
  - If you lose health, just put it down on a table near you
- During the **night** (lights off) everyone freezes.
  - Exception: prickly pods come to HQ to get more energy.
- If you **die** by running out of health or energy, come to HQ where you may pick any new creature to play as
- Write your name and energy level on the board score list
# Ecosystem: The Game Board

<table>
<thead>
<tr>
<th>Starting Stats</th>
<th>if YOU are a</th>
<th>when you encounter a:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 ♡ 4 ☢️</td>
<td>prickly pod</td>
<td>nothing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lose 2 ♡</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lose 1 ☢️</td>
</tr>
<tr>
<td>4 ♡ 4 ☢️</td>
<td></td>
<td>add 1 ♡</td>
</tr>
<tr>
<td>4 ☢️</td>
<td></td>
<td>lose 1 ☢️</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lose 1 ☢️</td>
</tr>
<tr>
<td>4 ♡ 4 ☢️</td>
<td>grass grazer</td>
<td>take 1 ☢️</td>
</tr>
<tr>
<td></td>
<td></td>
<td>nothing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lose 1 ♡</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lose 1 ☢️</td>
</tr>
<tr>
<td>3 ♡ 3 ☢️</td>
<td>spidery scavenger</td>
<td>take 1 ☢️</td>
</tr>
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</table>
Ecosystem: Postmortem I

What seems unbalanced about this game?
Ecosystem: Balance the Habitat

Designers may change the following:

• Change numbers for energy/health gain and loss. **Colored squares must have matching values.**

• Change starting stats for new creatures.

• Decide how long a day is (default 2m 30s)

• Decide how much energy prickly pods get at night

• Change powers of creatures, add rules – but keep procedures **SIMPLE!**
Massively Multiplayer Online Games

The most complex economies in the world that don’t use government-issued money (yes, more complex than BitCoin)
Before Ultima Online

At this, the main intersection of the Grand City of Aylor, the road is shiny and black as if paved with obsidian. The road extends east and west, reaching across the entire city. In the center of this large square stands a black and pink alabaster statue. Beneath the statue, many solicitors try to grab the attention of passersby. To the north is the white marble temple.

To the south, you gaze upon a large plaza with eight silver spires piercing the sky.

[Exits: north, east, south, west]

A large black and pink statue sprays streams of water into the air.
Lucasfilm’s Habitat and Lessons about Economic Holes

- Head-stealers prey on new players
- The vendomatic problem
- Not “just” entertainment
- Conceived as a virtual society
- Moral choices, community problems

Sells for 75

Bens for 100
The hardest things about massively multiplayer design

- The “play to win, take any advantage you can get” hyper-competitive attitude can wreak havoc on a multiplayer ecosystem.

Sirlin says: “if you don’t cheat you’re a scrub!” NOT ACTUAL QUOTE
The hardest things about massively multiplayer design

- The “play to win, take any advantage you can get” hyper-competitive attitude can wreak havoc on a multiplayer ecosystem.

**Traditional solution:** BAN BAN BAN BAN BAN BAN

**Unorthodox solution:** LET CHAOS REIGN
The hardest things about massively multiplayer design

- The “play to win, take any advantage you can get” hyper-competitive attitude can wreak havoc on a multiplayer ecosystem.
- **Trade between players** is basically a vector of contagion that spreads problems, causes imbalances to become more apparent: everyone in the same kiddie pool.

Profit-seeking solution: NO TRADING

Unorthodox solution: LET CHAOS REIGN (with long travel times)
The hardest things about massively multiplayer design

• The “play to win, take any advantage you can get” hyper-competitive attitude can wreak havoc on a multiplayer ecosystem.

• Trade between players is basically a vector of contagion that spreads problems, causes imbalances to become more apparent: everyone in the same kiddie pool.

• Other people are the worst part of a lot of multiplayer games, according to the majority of customer service complaints—but also the reason to be there?

Popular solution: SOLO IF YOU WANNA

New spin: BOUND AND GAGGED
Ultima Online, Zach Booth Simpson & Raph Koster
Economies in MMOs turn out to be nothing like real world economies!
(not really surprising, but interesting to look at why & how)

First: factors that affect a virtual economy are controlled very differently.
What factors affect the stock price of a real company?

- How many people buy or sell the stock
- Change in how popular orange juice is to drink
- Changes in the rules of the stock market
- Passage of laws affecting stocks or oranges
- Weather: was it a good year for oranges?
- Change in management (new company CEO, etc)
The Special Case of MMO Economics

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In a virtual economy, some are affected by player choices…

...but the rest are affected by the choices of the people running it!

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“Loss Aversion”
Most people would rather keep what they’ve earned and keep it secure,
rather than risking it to get more.
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Behind one of these doors is a prize!
From the time I say “Go” you may pick one… before a ten-second count is up.
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- Hacks and cheats *and even simple design oversights* can massively affect the whole economy
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- Players are playing for very different reasons from each other
The In-Game Economics of Ultima Online

Original Economic Flow

1. Virtual Resource
   (a) Gold from sales to NPCs
   (b) Gold harvest
   (c) Spending

2. Natural Resources
   (a) Exchange
   (b) NPC supplier
   (c) Raw Materials
   (d) Raw Material manufacturing
   (e) NPC manufacturing
   (f) PC manufacturing
   (g) Gold

3. Gold
   (a) Inventory
   (b) Decay
   (c) Barter & Exchange
   (d) Selling to NPCs
   (e) Degradation

4. Raw Materials

5. Goods

6. Inventory

Current Economic Flow

1. Virtual Resource
   (a) Gold from sales to NPCs
   (c) Spending

2. Natural Resources
   (b) NPC supplier
   (c) Goods
   (d) Non-gold harvest
   (e) Purchase from NPCs

3. Gold
   (a) Exchange
   (b) Gold harvest
   (c) Purchase from NPCs
   (d) Sent to Vendor
   (e) Non-gold harvest
   (f) Purchase from NPCs
   (g) Sent to Vendor

4. Raw Materials

5. Goods
   (a) Exchange
   (b) Decay

6. Inventory
   (c) Barter & Exchange
   (d) Distribute
   (e) Selling to NPCs
   (f) Decay

7. Vendor
   (a) Vendor sales

Drain
Original Economic Flow

1. Virtual Resources
   - (c) Spawning
   - (d) Gold from sales to NPCs

2. Natural Resources
   - (b) Gold harvest
   - (a) Exchange

3. Gold
   - (a) Exchange
   - (b) Purchase from NPCs

4. Raw Materials
   - (b) Botched manufacturing
   - (a) NPC manufacturing

   - (a) Non-gold harvest
   - (a) PC manufacturing

   - (b) NPC suppliers
Taking a Closer Look

Original Economic Flow

1. Virtual Resources
   - (c) Spawning
   - (d) Gold from sales to NPCs

2. Natural Resources
   - (b) NPC suppliers
   - (a) Non-gold harvest
   - (b) Gold harvest
     - (a) Exchange

3. Gold
   - (a) Exchange
   - (b) Purchase from NPCs

4. Raw Materials
   - (a) NPC manufacturing
   - (b) Botched manufacturing
   - (a) PC manufacturing
Taking a Closer Look
The In-Game Economics of Ultima Online

Why a closed loop?

In theory, to prevent inflation: gold & materials entering the economy and never leaving it—prices go up, new players can’t buy anything, etc.
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Everything got stuck right here: hoarding.
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Because it’s a closed loop, nothing new entered up here! Game ground to a halt.

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No longer a closed loop:

Designers can adjust faucet & drain separately so that faucet never stops. Hoarding was still a problem for drains!
Suggestions (from 1999) for better drains

• Taxes (on property, wealth, income). Players hate this idea... too realistic! But where the drain comes from losing?

• Maintenance. Make everything deteriorate. Sounds find to people until they lose something or run out of money.

• Natural Disasters. They destroy all your stuff, just like in reality!

• Lotteries. Also known as “the stupid tax.”

• Consumables. One of the drains that players accept without question, but in order to be worth buying & using up, they have to affect gameplay significantly.

• “Indulgences.” Now better known as vanity items—pets, special color variations, etc. This is why you see them in so many MMOs!

• Recycle Bins. Exchange goods (takes up more db space) for cash.

• Other interesting examples? Selling the ability to “shout” temporarily in a zone. Gigantic efforts taking donations from thousands of players.
Result: players making tons of cheap items no other player would buy to level skills up; NPC vendors wind up with tons of stuff, no money
Proposed Solution: less “realistic” skill economy where players can’t practice by doing, but have to spend some of the gold they get on training their skills.
Taking a Closer Look
Years Later: the improved player economy

![Auction Interface](image)

<table>
<thead>
<tr>
<th>Auction Item</th>
<th>Rarity</th>
<th>Time Left</th>
<th>High Bidder</th>
<th>Current Bid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Star of Elune</td>
<td>Very Long</td>
<td>No Bids</td>
<td>81 85 20</td>
<td>102 31 50</td>
</tr>
<tr>
<td>Noble Topaz</td>
<td>Very Long</td>
<td>No Bids</td>
<td>81 85 20</td>
<td>102 31 50</td>
</tr>
<tr>
<td>Talasite</td>
<td>Very Long</td>
<td>No Bids</td>
<td>57 18 20</td>
<td>71 47 76</td>
</tr>
<tr>
<td>Four of Lunacy</td>
<td>Very Long</td>
<td>No Bids</td>
<td>37 95 0</td>
<td>47 50 0</td>
</tr>
<tr>
<td>Bonechewer</td>
<td>Very Long</td>
<td>No Bids</td>
<td>30 36 0</td>
<td>37 95 0</td>
</tr>
<tr>
<td>Primal Earth</td>
<td>Very Long</td>
<td>No Bids</td>
<td>27 15 48</td>
<td>33 94 35</td>
</tr>
<tr>
<td>Mithril Casing</td>
<td>Very Long</td>
<td>No Bids</td>
<td>24 27 48</td>
<td>30 34 36</td>
</tr>
<tr>
<td>Fel Iron Bar</td>
<td>Very Long</td>
<td>No Bids</td>
<td>22 80 0</td>
<td>28 50 0</td>
</tr>
<tr>
<td>Fel Iron Bar</td>
<td>Very Long</td>
<td>No Bids</td>
<td>22 80 0</td>
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</tr>
</tbody>
</table>

**Deposit:** Remember price

**Starting Price:**

**Buyout Price (optional):**

**Auction Duration:** 12 24 48 Hours