Design:
Pervasive Game Design Strategies
Mobile and Ubiquitous Games
ICS 163
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Content adapted from:
Pervasive Games: Theory and Design
Experiences on the Boundary between Life and Play
Pervasive Game Design Strategies

- PacManhattan
- Tangible Experience Design
- The Magician’s Curtain
- Runtime Game Mastering
- Games Telling Stories
- General Issues of Game Design
- Disruption
Pervasive Game Design Strategies

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Pervasive Game Design Strategies

• PacManhattan
  • Created by NYU students in 2004 in a Big Games class
  • Based on a visual pun of seeing similarities between the Pacman board and the streets of New York
Pervasive Game Design Strategies

- PacManhattan
  - Performative play component - spectacle
- Design goals
  - Multiplayer
  - Fun
  - Human-Scale
  - True to original game play
Pervasive Game Design Strategies

- PacManhattan
  - Original design included custom GPS beacons
  - Abandoned due to complexity
  - Instead each runner had a game master/controller
  - Continually connected by voice phone
  - Controllers manually updated position on a game board in the operations center
Pervasive Game Design Strategies

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Pervasive Game Design Strategies

- PacManhattan
  - Information asymmetry leveraged in design
  - Pacman can see all data
    - locations, dots
  - Ghosts can not see Pacman data
    - Of course, real world info trumps the game board
  - PowerPills implemented with a ribbon on four lampposts
    - Untying them reverses play for 60 seconds
Pervasive Game Design Strategies

- PacManhattan

- Result created an unexpected bond between controller and player

- Game was fun and athletic

- Did not devolve into just a “stunt”

- Solitary game became social

- Social expansion was clearly present

- Traffic made the game somewhat dangerous

- Recreated around the world
Pervasive Game Design Strategies

- PacManhattan vs Human Pac Man
Pervasive Game Design Strategies

• PacManhattan vs Human Pac Man
Pervasive Game Design Strategies

• Things to consider when designing a pervasive game
  • Holistic approach
  • Each decision impacts other aspects of the game
  • Some decisions may be in conflict with others
  • **Normative**: Things you should do
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Pervasive Game Design Strategies

• Tangible Experience Design
  • Pervasive games should be focussed on tangible experiences
  • Exciting real-world tasks that provide feelings of achievement
  • Lend themselves to recounting after the fact
Pervasive Game Design Strategies

- Setting and Surpassing Expectations
  - Establish expectations in game play
  - Then exceed them
- Escalate previous experiences
  - “Find the clue inside the rat”
- Use unexpected twists
- Change the game dynamic
- Use far-out game play
- Players may respond in kind
Pervasive Game Design Strategies

• Linked Tasks
  • You must complete Task A before beginning Task B
  • Adds meaning to tasks
    • simple tasks that are chained make more sense
    • “finding a location via a puzzle, then going there”
  • Linked tasks can form the entire game structure
  • Scavenger Hunts
  • Force collaboration through interdependence
    • “Disruption”
Pervasive Game Design Strategies

• Real Challenges
  • Breaking historically accurate codes
  • Climbing actual structures
  • Do not need to be difficult if they are meaningful
    • “fixing a printer jam”
  • Know your players well
  • Provide hints
  • Foster teamwork and networking
Pervasive Game Design Strategies

• 360 Illusion

• “Indexical Environment”: A perfect representation of the game world from real world environments.

• This is an ideal

• Acting in the game world and real world is the same

• Integrate into the environment

• Establish a clear level of indexicality

• Choose thematics wisely

• Encourage collective make-believe
Pervasive Game Design Strategies
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- National Training Center, Fort Irwin, CA
- 15 towns
- 350 Non-Player characters
- Combat training before going to Afghanistan
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Pervasive Game Design Strategies

• The Magician’s Curtain
  • Goal: The illusion of a coherent game world
  • Player’s must play along and not
    • “look behind the curtain”
  • hacking the game is always possible
  • “This is not a game” (TINAG) aesthetic
  • Used in Alternate reality games
  • A design approach that denies “gameness”
  • A player’s stance that helps to reinforce the curtain
Pervasive Game Design Strategies

• The Magician’s Curtain
  • Seamless Life/Game Merger
    • Extreme form of magician’s curtain
    • The boundaries of the game world are unclear
    • Real world is used as part of the game
      • “The Game”
    • Placing game ads in real places
    • Interaction with outsiders is required
    • Player’s can’t leave the game
    • Careful use of ludic markers
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Pervasive Game Design Strategies

• Runtime Game Mastering
  • Being in charge of a game while it’s running
  • Most games are not automatic
    • Too difficult to predict all player actions
    • Responding to player actions requires finesse

• Jobs:
  • monitor game progress
  • influence the state of the game
  • decide how to respond
Pervasive Game Design Strategies

• A Game Master in a pervasive game:
  • might have to be multiple people (temporal expansion)
    • requires communication
    • shifts
    • information pass-down strategy
Pervasive Game Design Strategies

• Gods and Power Users
  • God Mode
    • Game Master has no role in the game
    • Access to all information
    • Invisible to players
  • Power User Mode
    • Game Master has a character in the game
      • with special abilities, *diegetic* roles
  • Hybrid
    • Switching between the two modes
Pervasive Game Design Strategies

- **Active Game Management**
  - New content created on the fly
  - Sustains a responsive game world
  - Dynamic difficulty levels
  - Steer the game
  - Human backup in the case of technology failure
Pervasive Game Design Strategies

• Keeping track of the game
  • Technology is tempting and helpful
    • Surveillance
      • Cameras, sensors, microphones
    • Log files
  • Humans can interpret
    • Controllers/ Moles
  • Self-reporting
• Monitoring online forums
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- Games Telling Stories
  - Games of Progression vs Games of Emergence
    - Games of Progression have a strong narrative
      - This motives the players
      - It is the reward
      - Not as interesting the second time
    - Games of Emergence have a rich rule base
      - That cause multiple plays to be fun
  - Which kind of game is PacManhattan?
Pervasive Game Design Strategies

- **Replayable Games of Progression**
  - Create *different points of view*
  - Play the game as one team then a different team
  - Foster *social play*
  - The story is important but the interaction between people is what is fun
- Include way *too much content*
- So multiple replays still offer new discoveries
Pervasive Game Design Strategies

• Games Telling Stories

• Distributed Narrative
  • Small story fragments
  • Different teams have to piece them together
  • Make the story matter
  • Connect with traditional media
  • Clues are not necessary
  • Collective action thwarts story design sometimes

• Think outside the box
Pervasive Game Design Strategies

• Games Telling Stories
  • Collective Story
    • There are two stories
      • The designed narrative
      • The story of how the game unfolded
    • The collective story
    • Design for this as well
      • debrief sessions
      • photo albums
      • post-game websites
Pervasive Game Design Strategies

• Games Telling Stories
  • First Person Story
    • A game that focuses on one person
  • To make it work
    • Appeal to the narcissism of the player
    • Minimize role-playing
    • Personalize the story
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• General Issues

• Sustaining Critical Mass
  • Limit the time and space of play
  • Reward extensive play (e.g., staying online)
  • Provide single-player content
    • (e.g., maintenance work, resource allocation)
  • Provide two-player content
  • Conceal the lack of critical mass
    • If players don’t know the mass isn’t there yet, they won’t abandon the game as fast
Pervasive Game Design Strategies

• General Issues
  • Pacing the Game
    • Test and iterate
    • Allow for variable pacing
    • Make it foolproof
    • Don’t let one player’s delay ruin the game
  • Prepare for dedicated players
Pervasive Game Design Strategies

- General Issues
- Business Model
  - How this thing is funded has a big impact on the design
- Dragonbane
  - 1 million euro
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• Disruption

• Goal
  • to physically demonstrate the threat of decentralized action, inspired by Maneki-Neko, Distraction

• Players: Brea-Olinda High School students

• Split into four teams

• Time frame
  • 2 hours

• Technology
  • text messages, GPS, paper
Pervasive Game Design Strategies

1. Start
2. Go to the 5th floor mailroom
3. Take an envelope from Prof. Patterson's mailbox and write a large "A" on it. Put a copy of "Software Engineering Notes" in it.
4. Go to Donald Bren Hall Room 5084
5. Proceed to DZ
6. Find the Location (33.643324, -117.842282)
7. Wait for the printer to print a piece of paper with four pictures on one side and "A" on the other
8. Cut the four pictures apart and place in the envelope. Seal the envelope with the pictures and magazine in it.
9. Go to the sixth floor outdoor patio
10. Find the words "Launch Pad" on the ground. Stand on them. Do not climb on the ledge. Do not try and look over the ledge.
11. As loud as you can, sing "You are my Sunshine"
12. Drop the Envelope over the edge of the building closest to you. Do NOT try and look over the edge (too dangerous)
13. Catch the envelope labeled "A" when the singers throw it to you
14. Proceed to FRC
15. Find and take an envelope marked "C"
Pervasive Game Design Strategies

Start

Go to Donald Bren Hall Room 5084 (3:1)

Obtain an envelope marked "C" (3:2)

Travel to (33.644633, -117.840651) Find the "Go Study Abroad" Bulletin Board (3:3)

Post Envelope "C" on the bulletin board located there (3:4)

Travel to (33.644271, -117.841201). Look for a line of soldiers and attack them with finger guns loudly shouting "bang" (3:5)

Take envelope "A" (3:6)

Go to Location Donald Bren Hall Room 4084 (4:1)

Find and take an envelope marked "D" (4:2)

Find and take an envelope marked "D" (4:2)

Proceed to (33.644271, -117.841201) (2:5)

Catch the envelope labeled "A" when the singers throw it to you (2:4)

Form a single file line and march in a large circle around that GPS point (2:6)

Travel to (33.642531, -117.839763) (4:3)

Continue marching until someone pretends to shoot you. Immediately drop your envelope "A" and run to the bulletin board at (33.642531, -117.839763) (2:7)

Post envelope wood post near bulletin board next to that GPS point (4:4)

Wait there and listen for someone singing "You are my sunshine" (2:3)
Pervasive Game Design Strategies

Go to the Bren Hall sixth floor outdoor patio. (3:7)

Find the words "Launch Pad" on the ground. Stand on them. Do not climb on the ledge. Do not try and look over the ledge (3:8)

As loud as you can, sing "You are my sunshine" (3:9)

Proceed to (33.643324 -117.842282) (4:8)

Find the words "Drop Zone" on the ground. (4:9)

Wait and listen for someone to sing "You are my sunshine" (4:10)

Catch an envelope labeled "A" from the singers (4:11)

Bring envelopes "A" and "B" back to home base and tape the contents to the white board in the indicated manner. (4:12)

Drink some water (4:14)

Bring envelope "C" back to home base and tape the contents to the white board in the indicated manner (1:18)

Pick up envelope "B" (4:1)

Look for a human star and sing "Twinkle Twinkle Little Star" to them. (4:6)

End
Pervasive Game Design Strategies

- Disruption
- Game Design
  - Training in GPS the day before
  - Hint sheets for locations pre-made
  - Control room watching movements
  - Team play
  - A little social expansion
  - Not much temporal expansion
  - Heavy focus on linked mysterious tasks