Valve's Design Process for Creating Half-Life 2

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The Fuzzy Problem of “Fun”

- Obvious in hindsight -- “I know it when I see it”
- Has many solutions
- Subjective
- Defies direct analysis

An Engineering Approach

- Define your goals and constraints
- Come up with an idea of how to meet them
- Perform an experiment to test the idea
- Evaluate the quality of the experiment
- Evaluate the quality of the idea
- Evaluate the quality of your goals
- Repeat

Necessary Ingredients

- The right attitude
- Well defined, measurable goals
- Well communicated goals
  - Niche product?
  - Mass market?
- Well devised tests

Defining Goals

- "Product focus" helps you define good goals
- Care more about the quality of the product than your particular contribution to it
- Filter all goals through the lens of customer experience
- Good customer experience equals success

Engineering Game Design

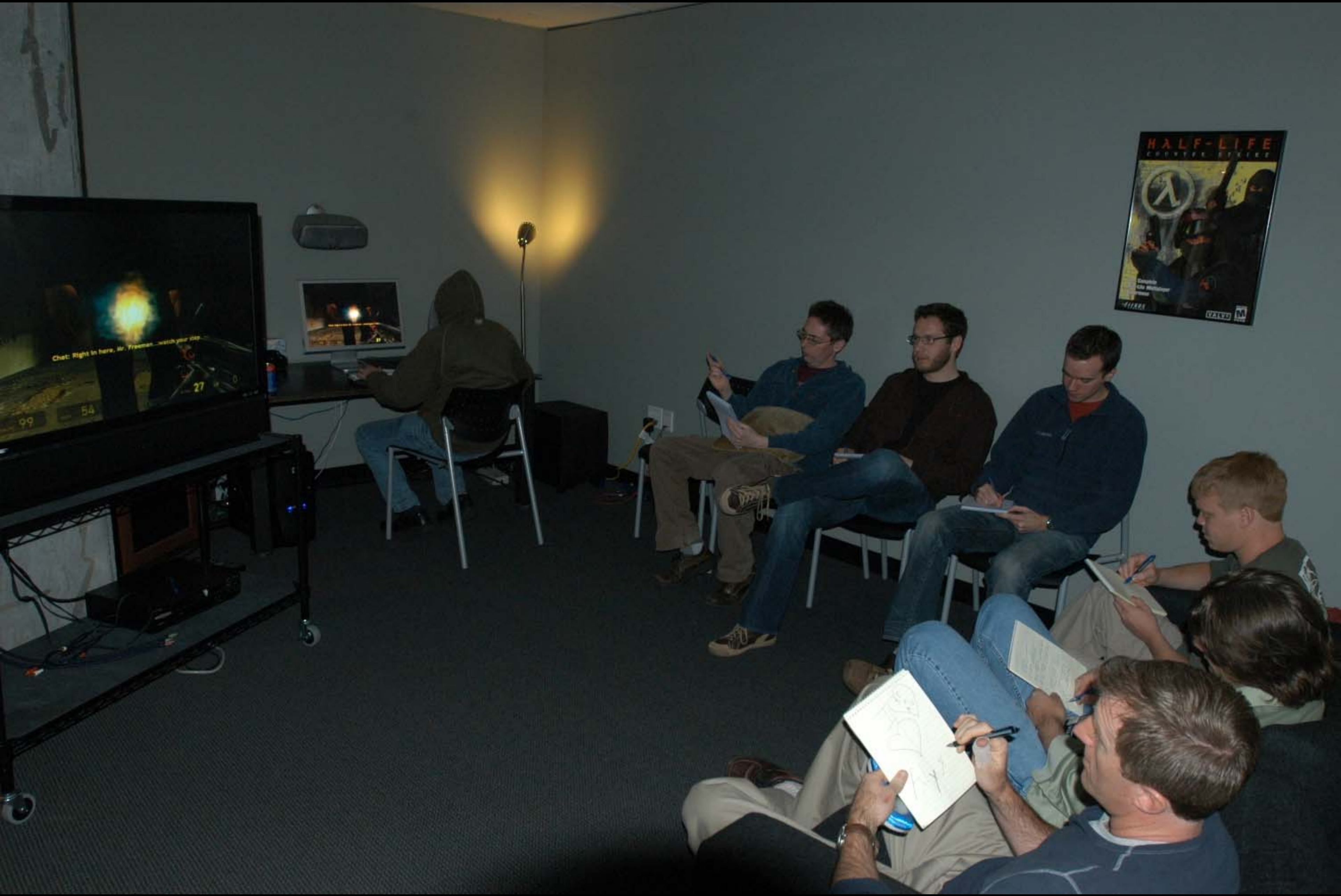
- Goal is a fun game
- Ideas are your game designs
- Playtests are your experiments
- Evaluate your designs as a result of playtests
- Repeat

What does “playtest” mean?

- QA?
- Balancing?
- Focus testing?
- Fun?

Running a Good Playtest

- Are playtesters having the experience you designed?
- Is the experience you designed desirable?
- Learn about things that affect customer experience
  - Game code/NPC behavior
  - Effects art
  - Environmental art
  - Sound
  - Training
  - Pacing
  - Difficulty


Chat: Right in here, Mr. Freeman... watch your step.
99
54
27
HALF-LIFE
COUNTER-STRIKE
VALVE

Running a Good Playtest

- Make sure the people responsible for the design and execution are there
  - Simplifies evaluation
  - Prioritizes
  - Motivates
- Simulate the player "in their living room"
  - Don't give them hints
  - Don't answer any questions
  - Don't provide extrinsic rewards
- Use external playtesters

Questioning Playtesters

- Don't rely too much on questions
- Often you learn more from what playtesters **don't** experience
- Ask non-leading questions
- Can be great for measuring effectiveness of certain elements
  - Storytelling
  - Perception

Design Iteration

- Often this occurs late in production
  - Some of your designs work, others don’t
  - Fix the most egregious problems
- Late playtesting is less valuable
  - It’s too late to make substantive changes

Playtesting as Production

- Use playtest results to drive production!
  - Create 15 minutes of gameplay in rough form
  - Playtest
  - Use playtest to prioritize work for next week
  - Repeat until complete
- We felt done as soon as playtesting was no longer painful to watch

RAILING
32
RAILING
32
WALL
RAILING
32
RAILING
32

HEALTH
100
SUIT
60

Small Increments

- ➢ Do the smallest amount that lets you learn something about the player experience
- ➢ Use 1-2 week increments
  - Shorter results in not enough time to make changes
  - Longer results in churn and flail

“I’m Just Worried That…”

- Don’t let theoretical problems prevent playtesting
  - They might not actually be problems
  - If they **are** problems, the playtest will prioritize which to solve first
  - Playtest may generate ideas of how to solve actual problems better
- Don’t worry about how it looks
  - Art production is less risky than gameplay production

Other Benefits

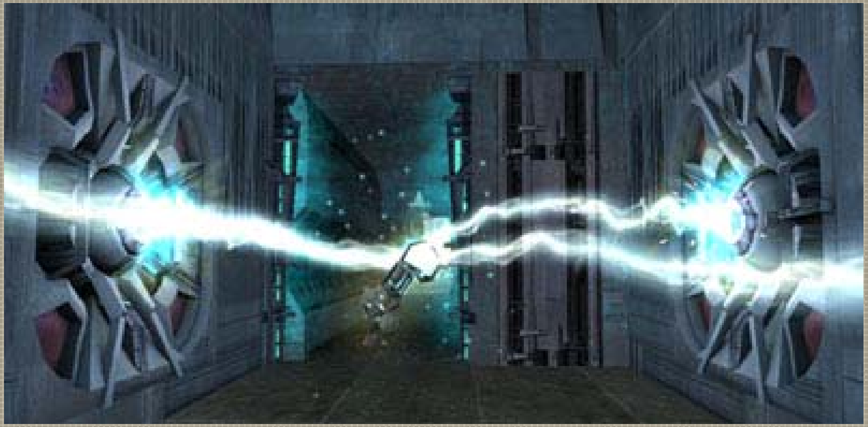
- Useful for learning
- Easy to measure an element’s incremental value or damage
- A great way to avoid design arguments
- Can use playtest results to drive other aspects of production

Playtesting as Production

- Solutions to playtest problems can be iterative
- Solve your problems in the right order
- Look for trends
  - Don’t overcorrect
  - Don’t oscillate
- Finish successful elements before moving on

Product-level Benefits

- Allows you to schedule to a particular quality metric
- Scopes game design risk for key features
- Allows you to optimize toward your most successful elements
- Allows you to measure risk, speed, cost



Playtesting as Production in Larger Projects

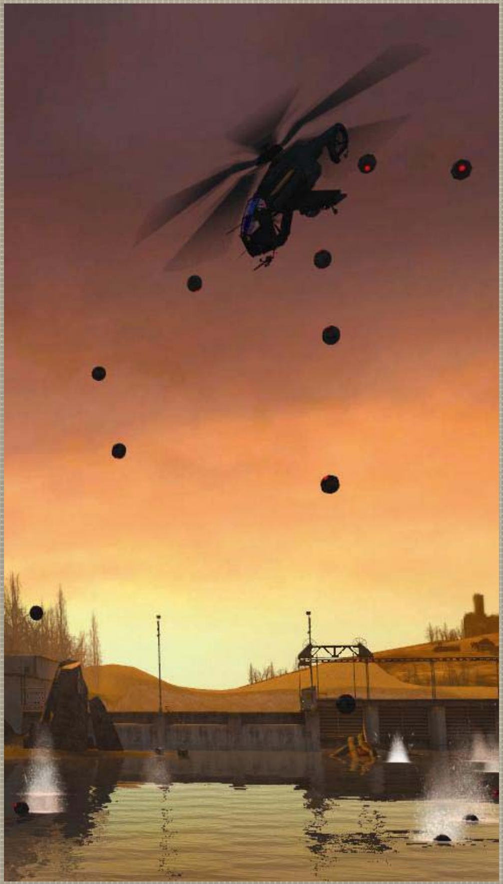
- Create multiple small independent design teams
  - Each chapter was done by a particular design team
- Create a sandbox for each team to work in
- Create processes to help with global decisions
  - Story
  - Global mechanics (weapons, NPCs)
  - Art
  - Consistency
  - Quality

Process #1: Establish Initial Constraints

- A preproduction phase established initial product decisions
  - Story elements and settings
  - Art concepts/style guides
  - Major design principles
  - NPCs, mechanics, weapons, vehicles
  - Chapter progression and themes
- Prototype gameplay maps were created

Process #1: Establish Initial Constraints

- Some decisions were used by design teams as constraints
  - Story, settings, design principles
- Others were treated as suggestions
  - Mechanics, weapons, enemy NPCs were picked up by design teams
  - Some elements never were adopted
- Some major elements in the shipping game were developed after this phase



Process #2: Promote Design Economy

- Encouraged reuse of existing game elements in new ways
- Useful in helping with global consistency and quality
  - More of your game is about the same elements
  - More hands working on each element improves quality
- Used teamwide playtests to expose elements to other design teams
  - Successful elements naturally diffused through the game

+

= FUN

Process #3: Establish Strike Teams

- Formed to address cross-team issues
- Some strike teams existed for the entire project
  - The "Weapons Cabal"
- Most were more transient
  - Occurred when a design team used another's gameplay elements
- Decisions in well-tested maps were treated as constraints

Process #4: The "Overwatch Cabal"

- Evaluated global product-level quality at Alpha
- Communicated high/lows to all design teams
  - List constructed from company-wide feedback
- Consisted of a member from each design team and art/sound/animation teams
- Design teams were responsible for addressing feedback
  - Cuts/changes were driven by individual teams
  - All changes were made during the Alpha period

Alpha

- What kind of changes should you make during Alpha?
  - Don’t introduce major new elements
  - Be ruthless and cut your worst problems
  - Do add density if necessary using existing elements
- Some aspects of your game can’t be measured until it’s all there
  - Pacing
  - Difficulty curve
  - Variety
  - Chapter-to-chapter inconsistencies

Conclusions

- Engineering process can be applied to game design
- Let your production teams drive your design
- Use playtesting to drive game production
- Large teams can use this technique if the appropriate processes are in place
- Allow for a final iteration over your entire game once it’s playable from beginning to end