Secrets of Epic Games

Dr. Michael Capps
## President, Epic Games, Inc.

The Perfect Honeymoon

For a game developer and a game journalist?
go to Tokyo Game Show!

Thank you for this opportunity

- Great honor to be speaking here today
- I hope that Epic's game development process will be interesting to you!

- Will start with a review of Epic Games and how we have changed in recent years
- Then talk about the secrets of our process
- Then discuss *Gears of War* in Japan

Epic Games, Inc.

- Founded 1991 by Tim Sweeney
  - Working alone in his parent's house
  - Then a few people around the world
- Now known for multi-million selling *Unreal* and *Gears of War* games and the Unreal Engine
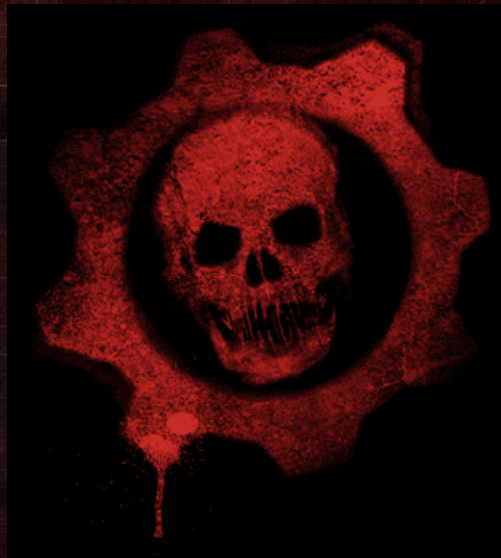
Shadow Complex

- We have deep respect for the long history of excellent Japanese games
- [Shadow Complex](), just released on XBox Live Arcade, is an homage to games like Metroid and Castlevania

XP

HEALTH **65**

Shadow Complex

- Received 9 "Best of Show" awards at E3
- Record sales for a single-player game on Xbox LIVE Arcade; metacritic score of 89
- So it seems other people love these old-style Japanese games, too!

Epic Games, Inc.

- Licensed Unreal Engine since 1996
  - used by hundreds of game teams
  - and for movie/TV production
  - as well as non-game applications like training and architectural design
- Unreal Engine 3 is, by far, the most widely used game engine this console generation
  - UE3 was the first live demo ever on PS3
  - Microsoft uses UE3 for their Xbox 360 games

Epic Games, Inc.

- I joined Epic in summer 2002
  - At the time, we had 20 employees
  - Now over 400 employees worldwide
  - 117 employees at main office in Raleigh, USA
  - Game development teams in Warsaw, Shanghai, and western USA
  - Engine support team in Seoul, Korea
- Grown so much in five years
- From one team and one game, to many worldwide

Epic Games, Inc.

- Proud to announce we will be adding a new member to the Epic family
- Right here in Japan!
  - We want to give the best possible support, in Japanese, to Japanese development teams
  - We are starting a Japanese engine support team
- We are recruiting now!
  - Territory Manager
  - Support managers familiar with Unreal Engine 3
- jobs@epicgames.com

Epic Challenges

- Combining success and rapid growth has led to many challenges for Epic Games:

- The Insufficient Pop-Tarts Problem
- Game developers want to play games
- Competing with ourselves
- Shaking the Jell-O™

The Insufficient Pop-Tarts Problem

- People at Epic were complaining
- Not enough types of Pop-Tarts in kitchen!
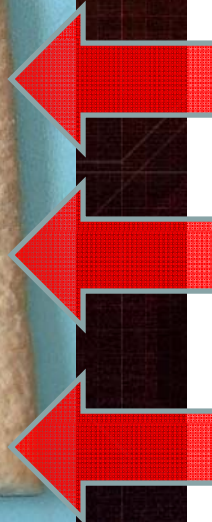
The Insufficient Pop-Tarts Problem

Surprising number of varieties…

Frosted Strawberry
Vanilla Milkshake
Frosted Wildberry
Frosted Strawberry Milkshake
Ginger Bread
Apple Strudel
Frosted Brown Sugar Cinnamon
Chocolate Chip
Chocolate Chip Cookie Dough
Cinnamon Roll
Frosted Blueberry
Frosted Cherry
Frosted Chocolate Fudge
Frosted Cookies & Cream
Frosted S'Mores (introduced in 2001)
Hot Fudge Sundae
Strawberry Cheese Danish
Frosted Chocolate Vanilla Cream
Frosted Raspberry
Chocolate Banana Split
Brown Sugar Cinnamon
NFL™ Frosted Brown Sugar Cinnamon

Apple Cinnamon
Blueberry
Strawberry Kiwi
Chocolate Strawberry
Chocolate Vanilla
Strawberry Blueberry
Dulce De Leche
Guava Mango
Chocolate Banana Split
Orange Cream
Knock Knock Jokes *Frosted Berry Who*?
Barbie™ Sparkleberry
Barbie™ Wildberry
Hot Wheels™ Cinna-Match 1 Brown Sugar
Cinnamon
American Idol™ Blue Raspberry
Indiana Jones™ Brown Sugar Cinnamon
Pictionary
Nix Family Laffy Taffy Flavors
Strawberry
Brown Sugar Cinnamon
Chocolate Fudge

The Insufficient Pop-Tarts Problem

The Insufficient Pop-Tarts Problem

- Must treat best employees like volunteers
  - Epic is considered a top game company
  - Hundreds of teams use our technology
  - Thus, every Epic employee could work almost anywhere in the industry
- How do you motivate a "volunteer" staff?
- Hint: the secret is not the volume and variety of snack foods
  - You need to think about *why* they complain about Pop-tarts instead of worrying about shipping games

Visualize Success

- What's the goal of our company culture?

    - People to work harder than usual
    - People to work hard on the same thing
    - Over a consistent period of time

Visualize Success

- In other words, we want a team with
  – Unity of purpose
  – Willingness to sacrifice for that purpose

- This doesn't mean 'sacrifice your family'
  – Fails the 'consistent period of time' test…
- Just 'sacrifice enjoyable inefficiencies'

Enjoyable Inefficiencies

- Squabbling about toaster pastry variety
- Intolerance for failure
- Territorial behavior
- Random web browsing
- Random 'research projects'
  - And other tasks that look like important work but don't help to ship games
- ~~Playing games during lunch~~

Successful Teams

- Project Lowlife:
  - "Get Unreal Tournament 3 running on almost any PC"

- America's Army:
  - "Keep a secret and shock the world"

- Scion Studios:
  - "Beat Epic at their own game"

Team Case Studies

- Epic Games
  - Be the one of the best game companies and game technology companies

  - Okay, so we think we did that. So now:

  - "Against the odds, stay on top!"

- I tend to see the best motivation from
  Mission (Im)possiblempossible

GAME DEVELOPERS WANT TO PLAY GAMES

Good developers are gamers

- We prize creativity in our company
- We want people who are impatient, who push hard to get features into a game

- Creative people are often visual thinkers
  - Who don't like to read long design documents
  - And don't like to write them

Traditional design process

- Designer has an idea
  - Then he writes a design document
  - Then he prays the team understands his idea
- So many problems can happen
  - Too detailed? No one reads it
  - Too simple? Can be ambiguous
  - People who can't understand the idea may will fight against it
  - Programmers are too busy to experiment

Visual Prototyping

- Unreal Engine has a visual scripting language (Kismet) used by level designers
  - Mostly used for small tasks like placing waves of enemies
- Kismet is simple, but very powerful
  - Full universal programming language
- When our level designers couldn't get help from busy programmers, they started making prototypes by themselves
- This had a huge positive impact on communication and productivity

Gears design process

- Have a great idea
- Someone makes a visual proof of concept
- Playtest, improve, repeat
  - This iteration is very rapid
- Pitch meeting to formally propose the feature
- Designer writes a summary document
  - Links to videos and prototype
- Feature is formally scheduled

Visual Prototyping Examples

- Cover worm
  - Creature you can take cover behind
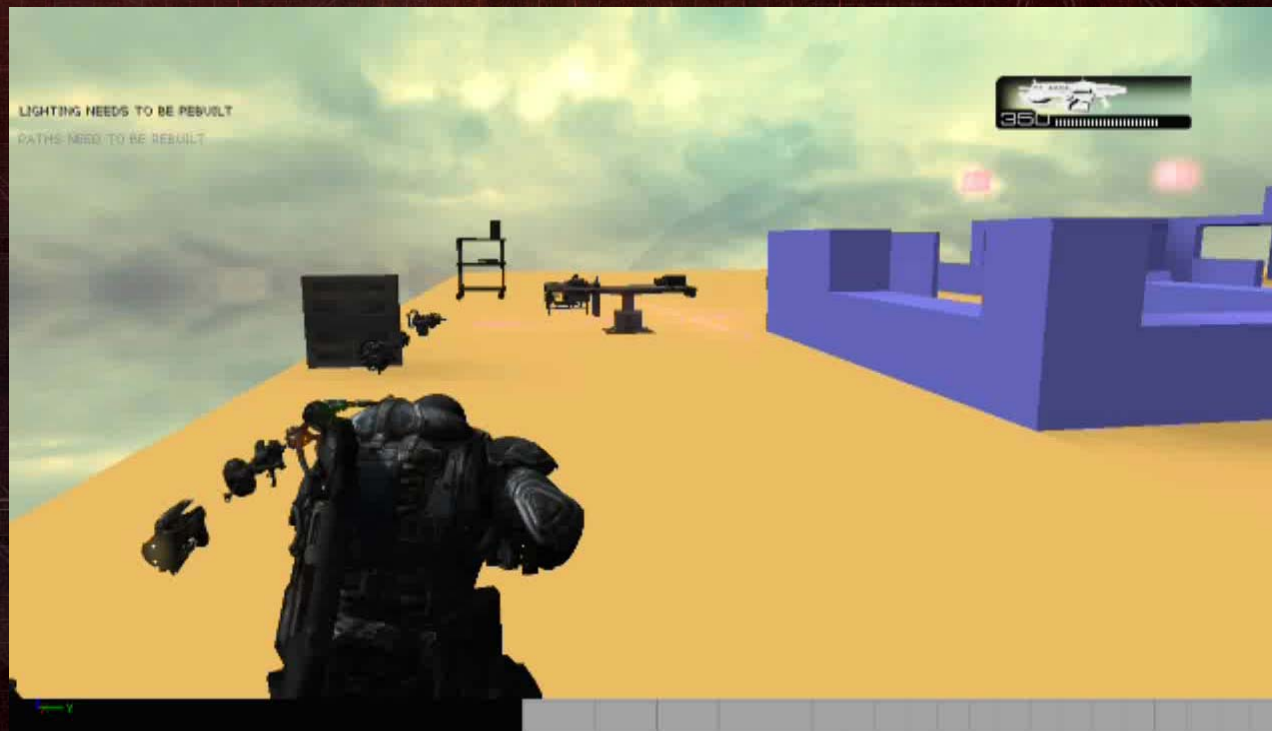 - In prototype, we made him from stone blocks

Visual Prototyping Examples

- <u>Perching system</u>
  - Easy to see it would hurt game play

Visual Prototyping Examples

- **Flipping over furniture for cover**
  - Quickly saw it was fun
  - Kismet prototype was actually shipped!

Visual Prototyping Results

- Our team spends less time reading and writing, and more time playing
- This makes game developers happy ☺
- We are able to try new features very quickly, even without programming time
- Quickly trying new ideas helps us "find the fun" as fast as possible
- This makes ME happy ☺

COMPETING WITH OURSELVES

Competing with Ourselves

- The original *Gears of War* won 30 Game of the Year awards
- Even the *marketing* won awards

- Beating that is … difficult
- Everyone expects sequels to be bigger and better
- And the team expects it of themselves
- The key is *finding the fun,* fast as possible

New, Better, More Process

- Canvassed the team for ideas
  - Organized ideas into 16 different categories (weapons, creatures, etc.)
- Met with stakeholders to choose best
  - *New* features for that category
  - features to make *Better*
  - features deserving *More* emphasis
- Helped us work on the most important fun things first

Example NBM Results

Category	Feature
MORE	Living Battlefield Moments
NEW	Crowd system
BETTER	Hit Reactions
MORE	Destructible elements
NEW	Huge Scale Creatures
MORE	Locust Variations
NEW	Meat Shield
BETTER	Cover Controls
NEW	Party System
NEW	Combat Trials Mode (Horde)

Now Test Against Your Values

- Just like life, decisions are helped by checking against core values
- Consistency is key for compelling IPs
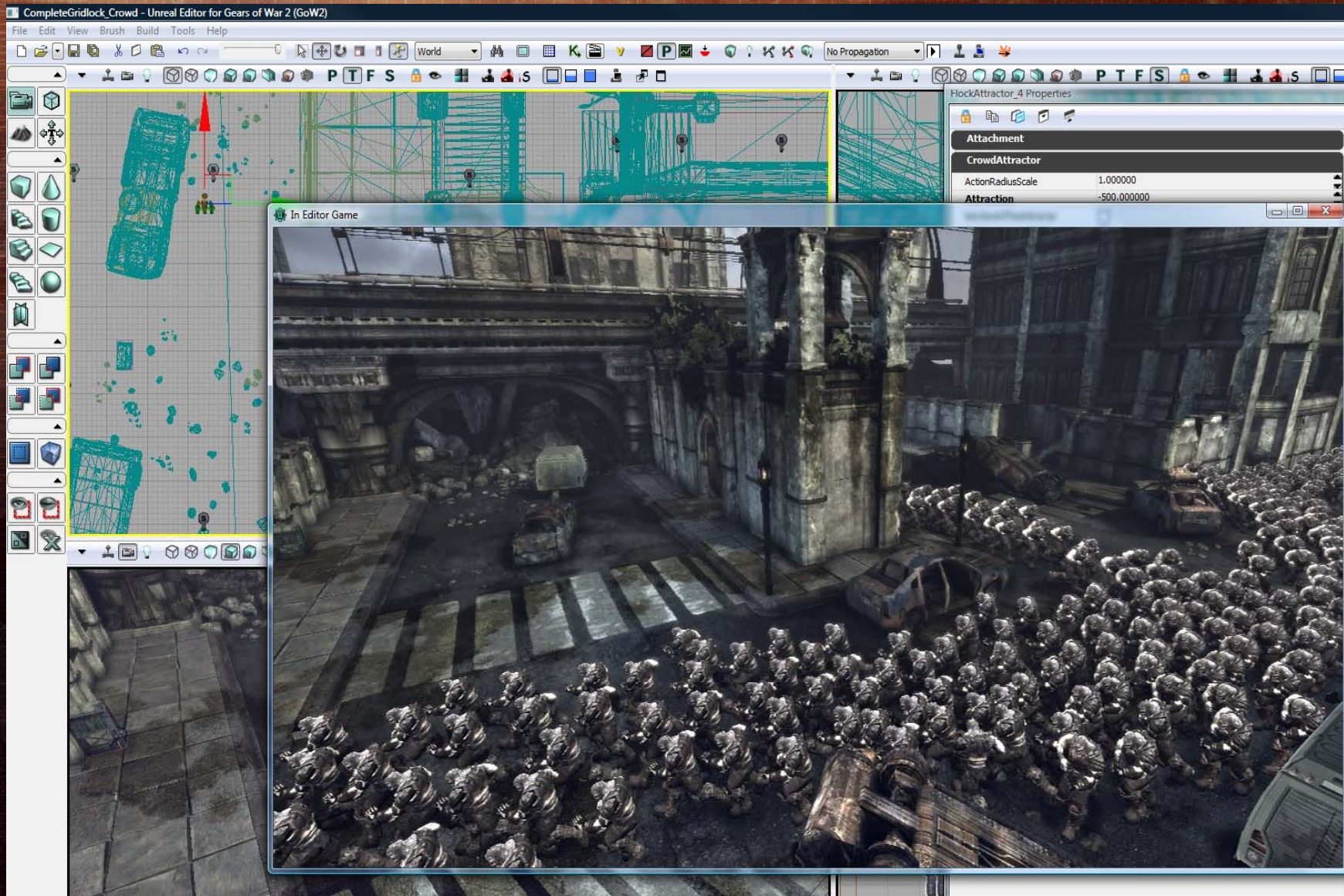- Gears was designed around a series of key franchise pillars and themes

Gears Overall Themes

- Destroyed beauty
- Humanity's last stand
- Nightmarish horror
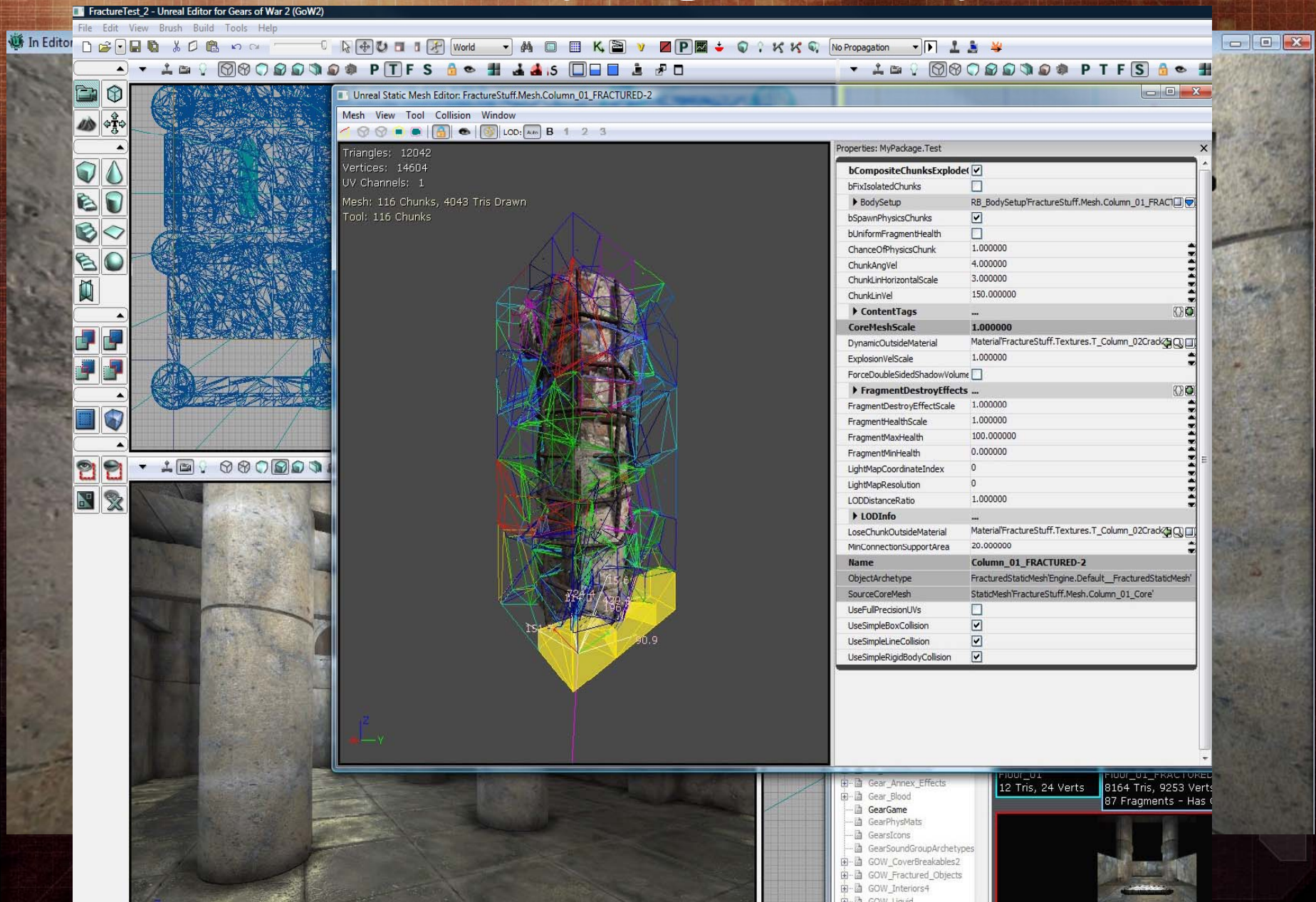- Never fight alone
- Marcus is the lead

Humanity's Last Stand

- "Humanity's last stand" isn't a 4-man commando mission
- For *Gears of War* 2, we wanted the feeling of a massive war, humans vs. Locust

Humanity's Last Stand

Destroying Beauty

Gears 2 Design Results

- –~50% more campaign content
- 50% more multiplayer levels
- Completed in ~50% of the time
  - We found the fun quickly!
- Much more polished gameplay
- Result: roughly same average review score
  - Which was unsurprising, and fundamentally a huge success
- So you have to find the fun in the work

SHAKING THE JELL-O

Shaking the Jell-O™

- Had good fortune to deliver a string of hits
- These deliveries often involved last-minute heroic effort
- Therefore the team is now convinced of their godlike super-powers!!

Shaking the Jell-O™

– invulnerable to schedules…

– invulnerable to creative burnout…

– invulnerable to sleep-deprivation...

Managing Overachievers

- Must watch staff closely so they don't push too hard
- I have three rules about time in the office:
  - 8 hours a day
  - 1:30 p.m. to 5:00 p.m. core hours
  - Leave by 2 a.m.
- Guess which one causes the most grief?

- Our mantra early in development is:
 "It's a marathon, not a sprint"

Managing Extra Hours

- We find crunch-time is necessary in a creative medium
  - Should be driven by team's ambition, not schedule inaccuracy
- We find some people get upset if we're *not* crunching
  - "Does no one realize we need to start working harder?"
- Crunch is imperfect by definition
  - We change the system regularly based on employee feedback

Eventually It *Is* a Sprint

- Now we have the team meeting where we say:
  "Leave it all on the field!"

- Company-wide push to ship the product

- Dinners, masseurs, flowers for the wives…

- Release entire teams from crunch
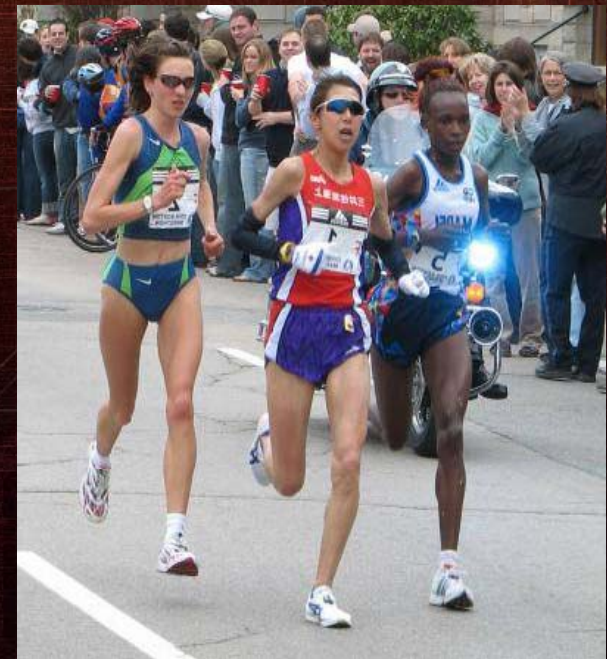
Cut Early, Cut Often

- Most crucial management task in this phase is scope reduction
  - Teams tend to underestimate effort, due to aforementioned superhero experiences
  - Every feature takes polish time away from the other features
  - Must avoid the sunk cost fallacy by looking at opportunity cost
  - Keep test burden in mind
  - Save it for the sequel!

Don't Shake The Jell-O™

- During "leave it on the field" phase caution is key
- Every change has the potential to create even more unwanted change
  - every fix risks more bugs!
- To mitigate risk, we raise the minimum bar over time
- We decide in advance where the quality bar will rise and it defines the shipping schedule

GEARS OF WAR
IN JAPAN

So why delay Gears in Japan?

- Our experience with the first *Gears of War* was very frustrating
  - Translation into Japanese: no problem
  - Passing censors: huge problem
  - Large team worked on customizing content
    - Removing many violent or bloody scenes, and many gameplay effects
  - We released 2 different games: Japan version and "rest of the world" version
  - This meant every Title Update, and all Downloadable content, had to be done twice

So why delay Gears in Japan?

- We received great reviews
- We've heard many compliments from Japanese game developers
  - We were very pleased when Jun Takeuchi, the producer of *Resident Evil 5*, said their controls were influenced by *Gears of War*
  - Which is funny because *Gears* was heavily influenced by *Resident Evil 4*
- *Gears* was the only western game in the top 10 sales on Xbox 360 in Japan
  - But that was still less than 1% of *Gears* sales worldwide

So why delay Gears in Japan?

- *Gears 2* was even more bloody than the first game

- It has an entire level that takes place inside a monster

So why delay Gears in Japan?

- We thought that:
  - We could never make a version for Japan that would fit our creative vision
  - We would need too much work to make the Japanese version
  - Time was very short, we were making a much bigger game in only two years
  - And supporting two versions of the game would be too difficult
- So for *Gears of War 2* we decided to not make a version for Japan (or Germany)

So why delay Gears in Japan?

- But our fans in Japan were very vocal about playing the new game
  - we saw many Japanese fans were buying the English version and playing online
  - and Microsoft Japan asked us to show support for the Japanese market
  - but we were very concerned about the amount of work needed

Gears of War 2 in Japan

- We asked for a review of our content, thinking it would be impossible to fix
  - Censorship rules had changed, and we were surprised how little work was needed

- So we shipped *Gears of War 2* in Japan 10 months after the "rest of world" version
- And we received a 38/40 and Platinum award from Famitsu!

What's the Epic Secret?

- Our culture and its unique traditions
- Lessons handed down through our "generations" of products
  – Take on near-impossible challenges
  – Making games can be a fun game
  – Cut early, cut often
  – Don't shake the Jell-O™
  – It's a marathon, not a sprint
  – Leave it all on the field
- Most important of all…

Always find the fun!

Questions?