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Lindeman's Lectures: The Game Development Process

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What to Expect

- These lectures are mainly about the process of successfully bringing a game from idea to delivery
  - Major "players" in the process
  - Steps in the development lifecycle
  - What makes a good (and bad!) game
- Presupposed background
  - Not much!

Instructor Background (*Who Am I*?)

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- Dr. Robert Lindeman (Prof, “Rob")
  - Associate Professor of Computer Science
    - Computer Graphics
    - Human-Computer Interaction
    - Technical Game Development
- Research interests
  - Effective, Multi-Sensory Virtual Reality, Teleoperation
- Like to play
  - 3D Action/Platformers (Onimusha, Oni, Lego Star Wars)
  - Racing games (Need for Speed)
  - Geocaching
    - GPS-based treasure hunting in the real world
    - http://www.geocaching.com/

Student Background (*Who Are You*?)

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1. School (grad or ugrad)
2. Year (first, second, …)
3. Major (Biology, CS, …)
4. Programming: (none) 1 to 5 (master)
   - Language? → Java, C++, Flash…
5. Gamer: (casual) 1 to 5 (hard-core)
6. Number of Games Built (zero is ok!)
7. Other …
8. Email this to me today! (gogo@wpi.edu)

Course Materials

- http://www.cs.wpi.edu/~gogo/courses/osaka_2013/
- Slides
  - On the Web (ppt and pdf)
- Timeline
  - Planning
- Project write-ups
- Resources
  - Game creation toolkits, documentation, etc.
- Email: **gogo@wpi.edu**

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Projects

- 4 projects
- Project 1: Making Games in Ren'Py
  - Done solo
- Groups! (2 is good)
- Project 2: Game Inception and Design
- Project 3: Make the Game
- Project 4: Play Testing
  - Done solo
  - Play and evaluate each other's games

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Overall Lecture Topics

- Industry
- Game Design
- Artistic Content Creation
- Programming

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Before We Proceed …

Any Questions?

What Do You Think Goes Into Developing Games?

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- Consider a video game you want to build (or, one you like that has been built)
- Assume you are inspired (or forced or paid) to engineer the game
- Take 3-4 minutes to write a list of the tasks required
  - Chronological or hierarchical, as you wish
- What do we have?

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Project 1 Details

R.W. Lindeman - WPI Dept. of Computer Science
Interactive Media & Game Development, Osaka Univ. (Summer 2013)

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Ren'Py Demo

R.W. Lindeman - WPI Dept. of Computer Science
Interactive Media & Game Development, Osaka Univ. (Summer 2013)

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The Game Development Process:
The Game Industry

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Hit-Driven Entertainment

- Games are emotional, escapist, fantasy-fulfilling, stimulating entertainment
- Causes of success or failure are often intangible (but quality matters a lot)
  - Consumers are smart
- Hits come from individuals with skill, instinct, creativity, and experience (and some luck), *not* from marketing

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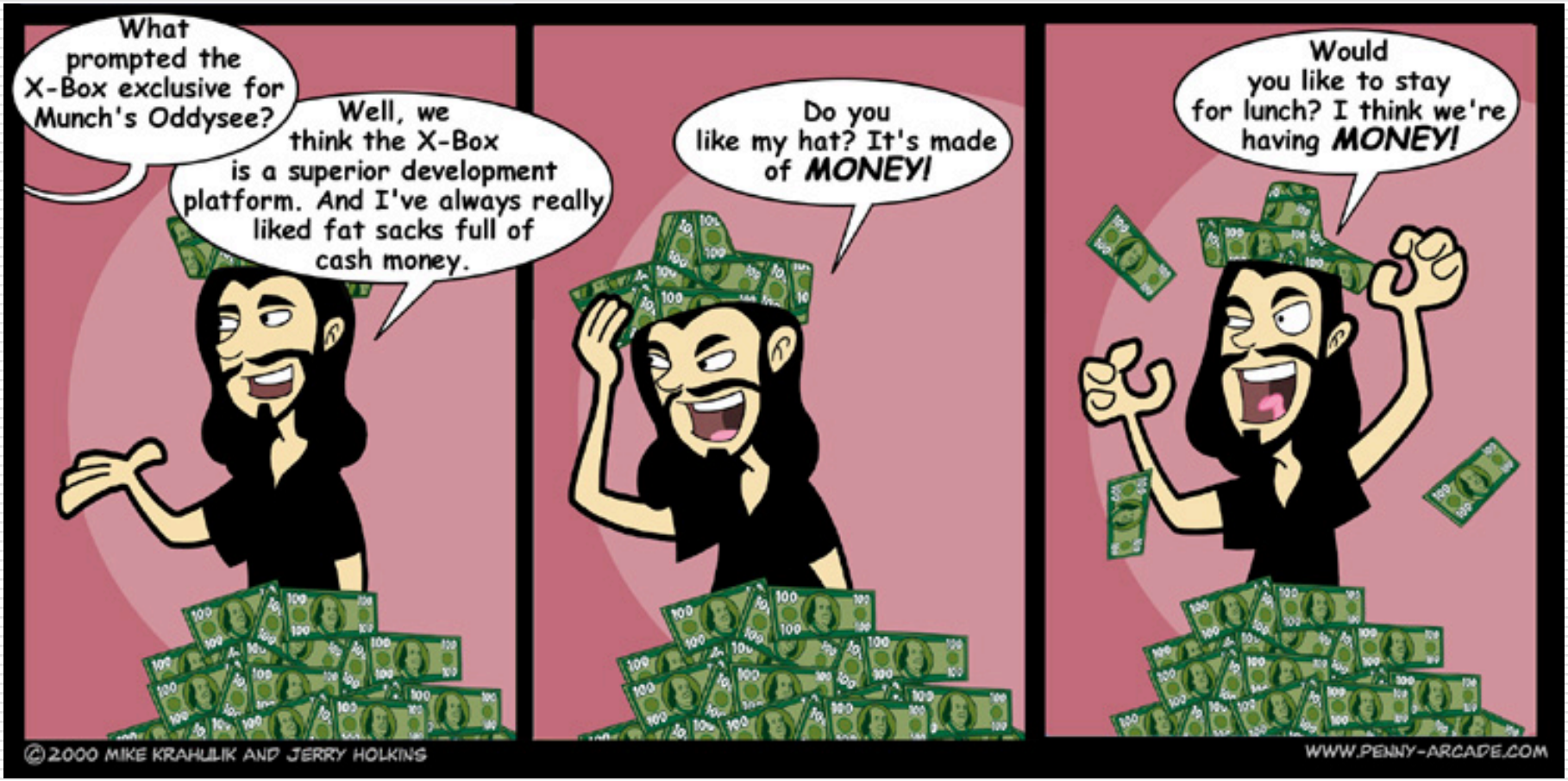
Big Business!

- Estimated $50Billion/year
- About the same as movie industry
- Music industry: $65B (2009)
- Pet food: $45B (2009)
- Game industry: Estimated $65B by 2014

How the game industry works:



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Roles

- Developers
- Publishers
- Platform Holders
- Distributors
- Retailers
- Middleware/Service Providers
- Press and Academia

Developers

- The people who actually build games
- Content design, creation, assembly
  - Game design, story, dialog, engineering, music, SFX, docs
- Size varies (one person to hundreds)
- Some are part of a publisher or *platform holder*
- Some are independent
- Examples?

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Publishers

- The people who bring games to market
  - Supervise marketing, manufacturing, distribution, public relations (PR), support
  - May also handle project management, quality assurance (QA) and licensing
- Usually assume most of the risk and reap most of the rewards
- Many specialize in particular market segments (sports, MMORPGs, etc)
- Examples?

Publisher Relationship with Developers

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- Star developers can bully publishers, because publishers desperate for good content
- Most developers are bullied by publishers, because developers are desperate for money
- Publishing swings from big to small and back depending on the market
- Most also have in-house developers

Platform Holders

- The people who make and sell gaming hardware (Examples?)
- Most are also publishers, developers and digital distributors
- Sell platform licenses and replication services to publishers
  - Stringent certification, final approval
- Sell required hardware, software and support to developers

Distributors

- The people who move boxes and bits
- Middlemen between publishers and retailers
- Compete on price, speed, availability
- Low margins (around 3%)
- Digital distribution is changing everything

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Retailers

- The people who sell boxes
- Also sell shelf space and advertising to publishers
- Earn 30% margin
- Mass market: Toys-R-Us, Big Camera, Yodobashi Camera
- Specialty stores/chains: GameStop
- Digital distribution: 30% and growing

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Service Providers

- Sound, Music, Voiceover
- Artists (2D, 3D, concept)
- Quality Assurance (testing)
- Public Relations
- Advertising

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Middleware Providers

- The people who make and sell development tools
- Game engines, asset creation, source control, project management
- Difficult business
  - Few customers, large upfront cost
- Profitable if you can break in

Service Providers

- The people who help publishers and developers
- Art: Concept, 2D/3D assets, packaging
- Audio: Sound FX, music, dialog
- QA: Playtesting, platform certification
- Public relations, advertising, career placement, vocational training
- Conference/award organizers, professional societies (IGDA)

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Press and Academia

- The people who talk about games
- Paper/electronic magazines and books for players, industry
- Web sites (Gamasutra), blogs
- Colleges, universities, institutes
  - Theory, research, career development
  - Academic journals and conferences

What does it cost to make a game?

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- $50-100K: Budget phone/casual
- $100-500K: Indy, nice phone/casual, budget DS, ultra-budget Wii, many PC games
- $500K-1M: Budget console, better DS/PC
- $1-5M: A titles (Titan Quest)
- $5-100M: AAA titles
- $100M+: Out-of-control AAA
  - Star Wars: The Old Republic = $300M+

World of Warcraft

- $50 Million to make
- 6 Million players @ average of about $12 / month for 2-3 months = $200 million a year
- (Less the cost of running those servers)

Development Models: Developer Driven

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- Developer creates concept, builds demo
- Developer pitches concept/demo to publisher
- Publisher agrees to fund it
- Developer gets advance $$$ against royalties based on net receipts
- Developer uses advance to build game
- Publisher boxes, ships, markets, collects $$$
- Developer MIGHT get more $$$ if advance is earned out

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Gross and Net Receipts

- Gross receipts
  - The amount of money a publisher is paid from the sale of a game
- Net receipts
  - The amount of money a publisher actually earns from the sale of a game after deducting various expenses
- Developer royalties are based on net
- But what is the net? Better find out!

Development Models: Publisher Driven

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- Publisher originates concept (usually a license)
- Selects and hires developer(s)
- Developer earns milestone-based fixed fee and/or advance against royalties (based on "net receipts," of course!)
- Developer builds game
- Publisher boxes, ships, markets, collects $$$
- Developer might get more $$$ if royalties are part of deal *and* advance is earned out

Development Models: Independent

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- Developer originates concept
- Builds game with self-funding, somehow
- Developer persuades Web-based publisher (s) to carry the game
- Publisher operates Web store
- Developer gets 30-40% of each sale
- Popular games may get picked up by a retail publisher and sold in boxes
- Some developers self-publish, keep 100%

Games are a Tough Business

- Less than 10% of published titles break even
- Development and marketing costs are rising
- Licenses and sequels lower risk
- Self-publishing is very risky
- You pay a "fun tax" to work in games

Exercise: Getting to Market

- 2 minutes to write a one-sentence game description of a game you want to make
- Form up into pairs or teams
- 2 minutes to decide on ONE of your ideas

Exercise: Allocate Points

- You have **14** points
- Allocate 0-6 points for each of the following facets:
  - P: Prototype/Pitch
    - How much effort you place on developing a solid prototype to pitch to publishers
  - D: Development
    - How much effort you place on development
  - M: Marketing/Sales
    - How much effort you place on marketing your project
  - F: Fun
    - How effective your design is in terms of how much consumers like your product

Exercise: Roll the Dice!

- Everyone stand up
- For each roll of the die, please sit down if the number is greater than the points you allocated for that facet
  - P: Prototype/Pitch
  - D: Development
  - M: Marketing/Sales
  - F: Fun

Exercise: How Many are Left?

- Yes, luck is a factor
- You can control it some with ***skill*** and ***money***
- But there's never enough of either to make it a sure thing