Game Production

(adapted from “Introduction to Game Development” by Steve Rabin)

Game Production

- Developer’s view
- Publisher’s view
- Production
- Marketing
- Intellectual Property 101
Video Game Industry

Development
- Motion-capture provider
- Art/animation provider
- Contract QA provider

Developer
- Game code
- Bug list

Publisher
- Game code
- Delivery media manufacturer
- Finished goods

Platform holder (Sony, Microsoft, Nintendo)

Game code (master disk)

Distributor or rep group
- Finished goods

PR firm & ad agency
- Finished game

Game samples & marketing materials

Media (TV, magazines, Internet)
- Finished goods

Game info

Retailer (Wal-Mart, Target, Toys "R" Us, EB)
- Finished goods

Retailer
- Finished goods

Consumer

Revenue from $50 Console Game

<table>
<thead>
<tr>
<th>Amount</th>
<th>Purpose</th>
<th>Paid By</th>
<th>Paid To</th>
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<tbody>
<tr>
<td>$3</td>
<td>Cost of goods</td>
<td>Publisher</td>
<td>Media manufacturer</td>
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<td>$7</td>
<td>Publishing license royalty</td>
<td>Publisher</td>
<td>Platform holder</td>
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<tr>
<td>$13</td>
<td>Retailer profit</td>
<td>Consumer</td>
<td>Retailer</td>
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<tr>
<td>$3</td>
<td>Markdown reserve</td>
<td>Publisher</td>
<td>Retailer</td>
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<td>$8</td>
<td>Development cost</td>
<td>Publisher</td>
<td>Developer</td>
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<td>$10</td>
<td>Operating cost</td>
<td>Publisher</td>
<td>Internal (overhead, freight, co-op, bad debt)</td>
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<tr>
<td>$6</td>
<td>Marketing</td>
<td>Publisher</td>
<td>Ad agencies and media</td>
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</tbody>
</table>
Game Developers

- Can be independent, or subsidiaries of publishers
- Many developers started on PC due to accessibility of tools
  - Console development requires proprietary development kits and preexisting relationship with publisher

Game Development

- Cover: art, animation, programming, asset management, production
- Idea for the game (“intellectual property”) can come from developer or publisher
- Paid set amounts per milestone completed
  - Payments are advances against future royalty payments
  - Royalties are calculated as percentage of publisher’s “net receipts”
  - Definition of net receipts is frequently obscure
Game Development

- The Developer is responsible for:
  - Game conception
  - Prototype
  - Design
  - Technology
  - Development and implementation

Publishers

- Publishers handle:
  - Production process
  - Quality assurance
  - Licensing
  - Manufacturing and shipping to retail
  - Sales
  - Consumer marketing and PR
  - HR, finance, investor relations, legal
Publishers

- The Publisher is responsible for:
  - Funding/Budget
  - Promotion
  - Marketing
  - Distribution
  - Support

Art and Animation Service Providers

- Developers can outsource art and animation assets to external companies
- Specified at contract and included in development budget
- Art houses can become full-service developers with judicious addition of programming talent
- Cost is a function of quality, team location, and volume of assets
Quality Assurance Service Providers

- Alternative to maintaining team of full-time salaried testers
- Established in PC publishing, due to amortization of multiple hardware configurations over multiple projects
- Gaining ground in console publishing; security of sharing proprietary console equipment is a perceived concern

Platform Holders

- Console companies (Nintendo, Sony, Microsoft) control nearly every aspect of games on their platforms
  - Proprietary development hardware and software
  - Permission to become a licensed publisher
  - License to use console company trademarks in marketing materials
  - May require permission to start a game
  - Certification of a finished game
- Investment in hardware must be offset by revenue from software (around $7/unit for third-party games)
Platform Holders

- Revenue comes from:
  - Hardware sales
  - Licensing fees from compatible peripherals
  - First-party games
  - Licensing fees from third-party games
  - Licensing fees from development tools
  - Revenues from sales of proprietary delivery media

PCs are an Open Platform

- Intersecting relationships among:
  - CPU manufacturers, application software providers, graphics chip manufacturers, and box assemblers
  - CPU (Intel, AMD) and graphics chip (NVIDIA, ATI) manufacturers provide developer support and market their technology benefits directly to consumers
  - Application software providers (Microsoft) give developers free tools to ensure compatibility
  - Box manufacturers (Dell, HP) may bundle hot software titles to add value to their sale
  - Low barrier to entry for developers, but high competition for shelf space
Game Production

- Developer’s view
- Publisher’s view
- Production
- Marketing
- Intellectual Property 101

Phases Within Phases

- Pre-production
- Production
  - Early production
  - Mid-production
    - Alpha
  - Late production
    - Beta
- Post-production
Pre-Production Phase

- Game Design Document (GDD)
- Technical Design Document (TDD)
- Team selection
- Internal staffing plan

The Technical Design Document (TDD)

- TDD is a statement of the *solution* to a specific game concept outlined in a “Game Design Document” (GDD)
- Foundation for the programming work
- Identify technical challenges
- Plan for technical solutions
- Set forth asset format guidelines
Plan Everything!

- Generate task lists from GDD & TDD
  - Including:
    - Programming
    - Assets
    - Demos
    - Approvals
    - Green lights
    - Vacations, holidays
    - QA
  - Work backwards from completion

Budgeting

- Personnel costs
  - Salary x time x involvement %
- Developer/Contractor payments
- Equipment & software
- Supplies
- Travel & meals
- Shipments
In Production

- Here are some example development periods for different platforms:
  - 4-6 months for a high-end mobile game
  - 18-24 months for an original console game
  - 10-14 months for a license / port
  - 16-36 months for an original PC Game

Beginning of Production

- Programming now underway
- Kick-off tasks - art creation
- Kick-off tasks - audio creation
Red Flag Spotting

- The usual causes of red flags:
  - Team conflicts
  - Personnel issues
  - Design problems
  - Money troubles
  - Technical glitches
  - Change requests
  - Schedule delays
- Take immediate action

Development Milestones: Milestone Definitions

- An example milestone schedule for a 20-month development cycle:

<table>
<thead>
<tr>
<th>Milestone Phase</th>
<th>Month 1-3</th>
<th>Month 4-6</th>
<th>Month 7-9</th>
<th>Month 10-12</th>
<th>Month 13-15</th>
<th>Month 16-18</th>
<th>Month 19-21</th>
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<td>Pre-Production - Core Concept Doc</td>
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First Playable – Proof of Concept

- Key game prototype features:
  - Core gameplay mechanic
  - Key selling pts/ pts of difference
  - Game engine / technological proficiency
  - Artistic / styling guide
  - Demonstration of control / camera system
  - Example gameplay goals

Development Milestones: Alpha Definition

- At Alpha stage, a game should:
  - Have all of the required features of the design implemented, but not necessarily working correctly
  - Be tested thoroughly by QA to eliminate any critical gameplay flaws
  - Still likely contain a certain amount of placeholder assets
Development Milestones: Beta Definition

- At Beta stage, a game should:
  - Have all content complete
  - Be tested thoroughly for bugs and gameplay tweaks
  - Be shown to press for preview features

Development Milestones: Gold Master Definition

- At Gold Master stage, a game should:
  - Be sent to the platform holder/s (where applicable) for TRC testing
  - Be sent to press for review
  - Be sent to duplication for production
  - Be backed up and stored
The Producer (In Production)

- Managing time of production
- Expecting the unexpected
- Red flags in mid-production
- Licenses
- Working with platform holders
- Working with marketing

Post-Production

- Marketing
- ESRB rating
- Box & docs
- Strategy guide
Quality Assurance

- Test plan
- The QA database
- QA - the view from inside
- The QA-producer relationship

Marketing

- How can a developer build a brand for the company?
- How do you maximize the coverage for a title?
  - What media categories can you get to?
  - What techniques do you use?
  - How do you involve fans?
Cover all of the Media Bases

- Developer Media
  - Game Developer
  - Gamasutra

- Game Print, Online
  - EGM, GameSpy, Fan Sites
  - PC Gamer

- TV and Radio
  - G4, Tech TV
  - Local and Network TV

- Consumer Mags
  - Wired
  - Time

- Daily Newspapers
  - New York Times
  - San Francisco Chronicle

- Business Pubs
  - Fortune
  - Forbes

ENTHUSIAST MEDIA

- Value
  - Perhaps the best exposure for your game in creating early sales
  - Builds a following with game fans
Fan Sites Will Give More Coverage

- Hundreds of fan sites exist; you just have to do some research

Maximizing Press Coverage for a Game Title

Marketing is the “force” of production
Intellectual Property 101

- Patents
  - Protect certain novel, useful and nonobvious *inventions* having a utilitarian function
- Copyrights
  - Protect *creative expression* in a fixed medium
- Trademarks/Tradedress
  - Confer exclusive rights in any word, symbol or device that *serves to identify* the source or origin of goods or services
- Trade secrets
  - Protect commercially valuable *secure information* whose contents are secured from public knowledge and disclosure

IP Content of Video Games

- Patent examples
  - Hardware technology, media on which game is recorded, and software that enables game to perform its functions
- Copyright examples
  - “Software”, artwork, storyline, characters, props, costumes, text, dialogue, sound effects, music
- Trademark/Tradedress examples
  - Business name of the developer and publisher, game title, mascots (Mario and Sonic), designs, unique packaging
- Trade secret examples
  - Confidential know how used to program, budgets, secret projects, contract terms
Patents

- **Works Protected**
  - Inventions and processes protected by utility patents can be “any new and useful process, machine, manufacturer or composition of matter, or any new or useful improvement thereof...”
  - So-called “method” patents are utility patents that cover computerized processes and functions
  - The design of physical objects, such as the Xbox, can be protected separately by a design patent

Patents

- **Standards**
  - To qualify for utility patent an invention must be:
    1. New
    2. Useful
    3. Nonobvious
      - Nonobviousness requires that the invention be sufficiently different from known technology and knowledge so as not to be obvious to a person with ordinary skill in the field of the invention.
Patents

- **Ownership**
  - In general, the inventor is the owner of the patent
  - The inventor may assign rights to the invention to others, such as the inventor’s employer, through written agreement
  - They may be multiple inventors in group works
  - Registration is essential to secure patent rights

- **Exclusive Rights**
  - The patent owner can exclude others from making, using or selling the patented invention or objects embodying the patented invention

Patents

- **Duration**
  - A utility patent is granted for 20 years from the date the application is filed
  - Patents issued prior to June 8, 1995, exist for 17 years from the date the patent is granted
  - The patented invention may be freely copied once the patent expires
Copyrights: Standards

- A copyright has 2 requirements:
  1. Originality
     - To be original, the work must not have been copied by the author and have a small level of creativity
  2. “Fixation in a tangible form” met if the work is recorded in any medium such as:
     - Text, videotape, photograph, sound recording, or CD

Copyrights

- Works Protected
  - Almost any recorded original expression such as:
    - Literary works
    - Musical works (including lyrics)
    - Dramatic works (including music)
    - Choreographic works
    - Pictorial, motion picture, graphic and sculptural works
    - Sound recordings
    - Architectural works
Copyrights

- Ownership
  - Ownership of a copyright belongs to author or authors of the work
  - The author is generally the creator of the work, but certain works made under contract as "works for hire" are owned by the person contracting for the work
  - Registration is not required but confers enforcement rights

- Exclusive Rights
  - A copyright owner has five exclusive rights:
    1. Reproduction right (copy, duplicate or imitate)
    2. Modification right
    3. Distribution right
    4. Public performance right
    5. Public display right
  - Moral rights are granted to visual artists to prevent improper attribution and protect the integrity of the work

- Duration
  - For works created by an individual or individuals after January 1, 1978, the copyright lasts for the life of the author plus seventy years
  - Copyrights in anonymous works and works made for hire exist for a period of 95 years from the date of first publication or 120 years from the date of creation, whichever is sooner
Trademarks/Tradedress

- Works Protected
  - Any word, symbol, name, slogan, picture, design, shape, color, sound or smell that serves to identify the source or origin of goods or services can be a trademark
  - A service mark is a trademark applied to services instead of products

Trademarks

- Standards
  - A trademark must be capable of distinguishing the owner’s goods or services from the goods or services of others
  - The relative enforcement strength of a trademark is determined on the basis of the degree of such differentiation:
    1. Arbitrary or coined
    2. Suggestive
    3. Descriptive
    4. Generic
Trademarks

- Ownership
  - A trademark is owned by the first party to use it in connection with the goods or services
  - Registration is not essential but establishes important enforcement rights

- Exclusive Rights
  - A trademark owner has the exclusive right to use the trademark in connection with specific goods or services
  - Subsequent users of the same or similar mark are deemed infringers

Trademarks

- Duration
  - A trademark continues as long as it remains in use
  - Federal registrations are subject to renewal every ten years
Trade Secrets

- Works Protected
  - Each state has its own laws, but many have adopted versions of the Uniform Trade Secrets Act
  - The UTSA provides that information that derives “independent economic value” from not being publicly known and whose secrecy is properly guarded is protected from unauthorized use by others

Trade Secrets

- Standards
  - Trade secrets must have commercial value and remain secret
  - There is no requirement that they be recorded and there is no provision for registration
  - Unlike patents and copyrights, trade secrets can include ideas that have no current utility or application
Trade Secrets

- **Ownership**
  - An employer generally owns trade secrets developed by employees and by independent contractors hired to develop or create such information

- **Exclusive Rights**
  - The owner of a trade secret can maintain it as long as secrecy is properly maintained

IP Transfers

- The owner of IP rights can transfer all rights by written assignment or a portion of rights by a written license

- Rights transfer between an employee or independent contractor is dependent on:
  - The nature of the rights transferred
  - The existence of an enforceable agreement between the parties setting forth the terms of any such transfer
Avoiding Infringement

- Existing patents, copyrights and trademarks can be searched
- Trade secrets cannot be searched, but violation generally requires intentional theft
- Copyrights are only violated if there is actual copying of the protected work
- Patent infringement does not require intent or even knowledge of the patent
- The standard of infringement for trademarks is whether there is a “substantial likelihood of confusion” between trademarks among intended consumers