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Studio Setup

Production and Project Management

Overview

- Learning Objectives

- Know how studios are set up, and how they make money
- Understand the member's roles and expectations within the studio
- Understand the importance of schedule and dailies

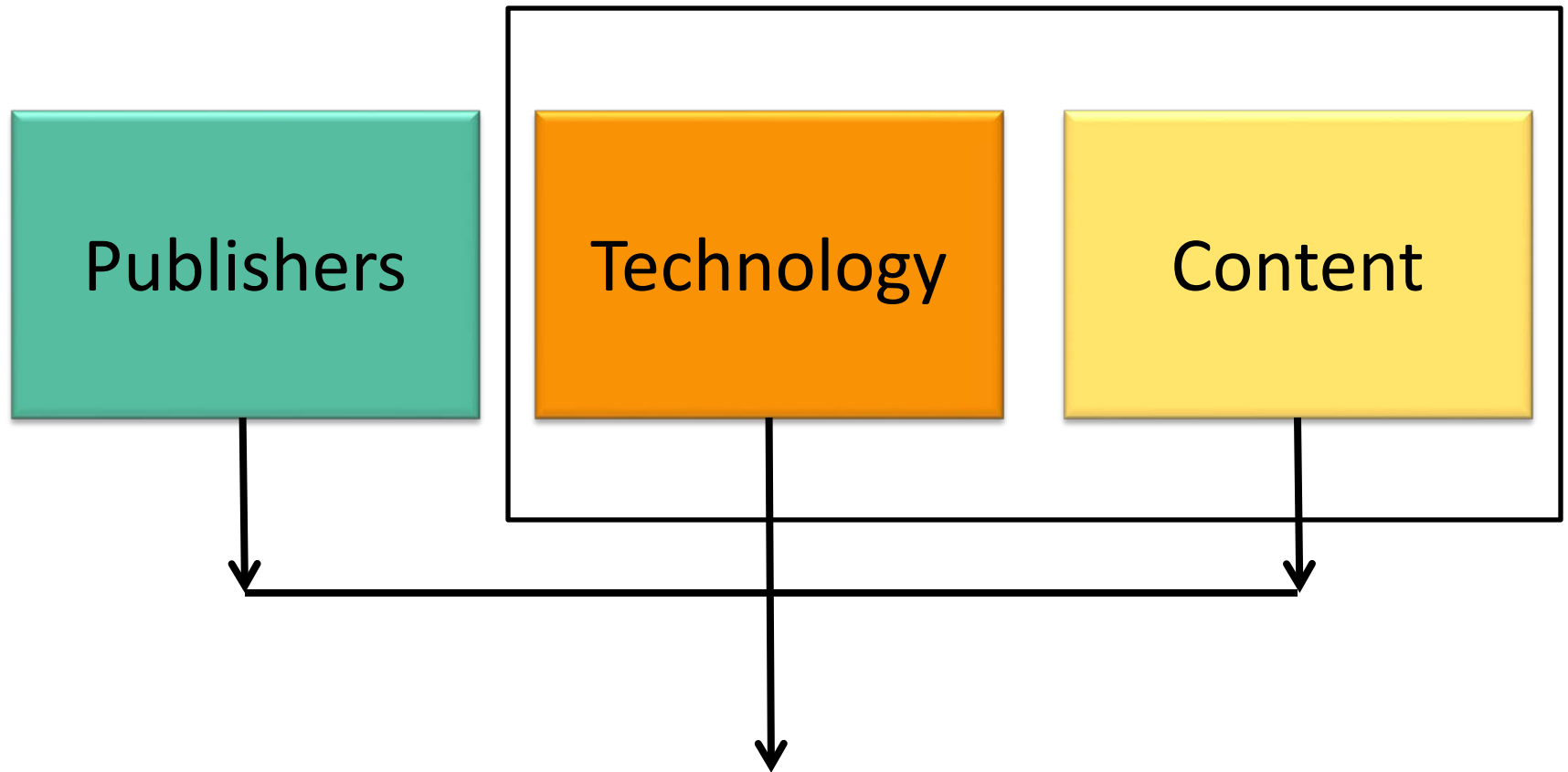
- Subtopics

- Game studios
- Studio structure
- Game development pipeline

Studio Setup

The Games Studios

Types of Games Studios



Content (Intellectual Property)

- Art, Sound, Data
 - Quake, Unreal, Halo, Half-Life, Sims, Angry Birds.
 - Might cross over to other media, eg movies.
 - Development spans across at least 2-3 years.
- Licensed Intellectual Property (or IP)
 - Existing successful licenses –Spiderman, Lord of the Rings, Harry Potter or NBA, FIFA...
 - However, not all licensed IPs prove to be successes, especially when carrying huge expectations

Technology

- Usually Work for Hire (Contractor)
 - one-time fee to deliver entire project.
- Outsource content
- Requires huge resources and usually experienced teams
- Cash flow due to long development
 - Need project pipeline to sustain.
 - Take on side, revenue generating projects (e.g web based projects) to upkeep cash flow while building IP/tech
- Not all companies can make it –industry moves too fast.

The Publishers

- We hate them, but can't live without them.
- Why do they take a fair chunk of the cash?
 - They fund the rest of the development.
 - They provide QA teams and structures.
 - They do the marketing.
 - They put the product on the shelves, or online (New distribution models –not within this scope)

Game Revenue

- **Commercial (Payware)**
 - Paid downloads, physical boxes
- **Freemium**
 - Free to play (F2P) but...
 - Advertisement supported
 - In-game purchases (pay to win???)
 - ARPU (Average Revenue Per User) / ARPPU (Average Revenue Per Paying User)
 - <http://www.gamesbrief.com/2011/11/arppu-in-freemium-games/>
- **Subscription**
 - E.g. World of Warcraft
- **Merchandising**
 - Angry Birds: 45% of Rovio's [2012] revenue from "consumer products"
 - <http://techcrunch.com/2013/04/03/rovios-revenues-up-101-to-195m-non-games-45-of-that-net-profit-71m/>

Publish



Content



Tech



ROVIO



Will not be Tested
Game Top 10

10 publishers market share 2012 (2011)

- Activision 19.5% (15.7%)
- Electronic Arts 18.4% (19.7%)
- Ubisoft 11.2% (8.8%)
- Nintendo 10.8% (12.4%)
- Take-Two 6.4% (4.8%)
- Microsoft 5% (4.8%)
- Sony 3.5% (5.3%)
- THQ 3.3% (4.9%)
- Warner Bros. 3.3% (3.7%)
- Capcom 2.4% (1.2%)



Source: GamesIndustry International

Top 10 video games in the US in 2012

1. Call of Duty: Black Ops II (360, PS3, PC, Wii U)
2. Madden NFL 13 (360, PS3, Wii, PSV, Wii U)
3. Halo 4 (360)
4. Assassin's Creed III (360, PS3, PC, Wii U)
5. Just Dance 4 (Wii, 360, Wii U, PS3)
6. NBA 2K13 (360, PS3, Wii, PSP, Wii U, PC)
7. Borderlands 2 (360, PS3, PC)
8. Call of Duty: Modern Warfare 3 (360, PS3, Wii, PC)
9. Lego Batman 2: DC Super Heroes (Wii, 360, NDS, PS3, 3DS, PSV, PC)
10. FIFA Soccer 13 (360, PS3, Wii, PSV, 3DS, Wii U, PSP)

(Source: The NPD Group)

The top 20 Franchises

- Combine PC, PS3, Wii and Xbox 360 formats, and are as follows:

Call of Duty

Mario

FIFA

Wii Fit (includes hardware)

Assassin's Creed

Guitar Hero

Halo

Madden NFL

The Sims

Need for Speed

Battlefield

Just Dance

Rock Band

Mario Kart Wii

Lego

Grand Theft Auto

World of Warcraft

WWE

Elder Scrolls

Sonic

Source: GamesIndustry International

Popular 3D Game Engines

- Unreal Engine 3
 - Batman: Arkham City, Gears of War Series, Borderlands Series
- CryEngine 3
 - Crysis 2, Crysis 3 and Sniper: Ghost Warrior 2
- Source Engine
 - Half Life 2 series, Counter-Strike: Source, Counter-Strike: Global Offensive, Left4Dead, Left4Dead 2, Portal 1 and 2
- idTech4
 - Doom 3, Quake 4, Prey and Brink
- Unity3D
- Torque3D

Choosing a Game Engine

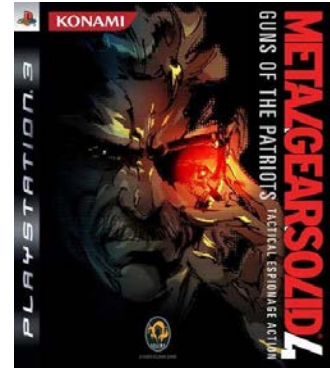
- http://www.gamasutra.com/blogs/MikoCharbonneau/20130222/187185/Choosing_the_Perfect_Game_Engine.php

Will not be tested

The Most Expensive Games Ever Made.

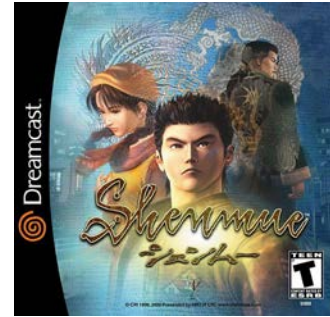
The most expensive games ...

- Halo 3 - \$55 million (Sept 2007, XBox360)
 - Bungie Software, Microsoft
- Metal Gear Solid 4 - \$60 million (June 2008, PS3)
 - Kojima Productions, Konami
- Too Human - \$60 million+ (Aug 2008, XBox360)
 - Silicon Knights, Microsoft



The most expensive games ...

- Shenmue - \$70 million (Dec 1999, Dreamcast)
 - Sega AM2, Sega
- Gran Turismo 5 - \$80 million (Nov 2010, PS3)
 - Polyphony Digital, Sony CE
- Grand Theft Auto IV- \$100 million (April 2008, PS3, Xbox360, Windows)
 - Rockstar North, Rockstar



...ever made...

- Disney Infinity - \$100 million (Aug 2013, PS3, Xbox 360, Wii U, Nintendo 3DS, PC)
 - Avalanche Software, Disney Interactive Studios
- Red Dead Redemption - \$100 million (May 2010)
 - Rockstar North, Rockstar
- Star Wars: The Old Republic - \$200 million (Dec 2011).
 - BioWare, EA and LucasArt



Disney
INFINITY
INFINITE POSSIBILITIES. ENDLESS FUN.



Grand Theft Auto 5

- Rockstar North, the Edinburgh, Scotland “GTA 5” is scheduled to be released on September 17, 2013 for the Playstation 3 (PS3) and Xbox 360.
- Games development and marketing budget at £170 million (or roughly US\$265 million)
 - enormous scale and detail in Grand Theft Auto 5
 - In its first day of release, the game pulled in US\$800 million in sales and US\$1 billion in three days



<http://amog.com/tech/gaming/157760-10-expensive-video-games/>

Will not be tested

Development Cost Over the Years

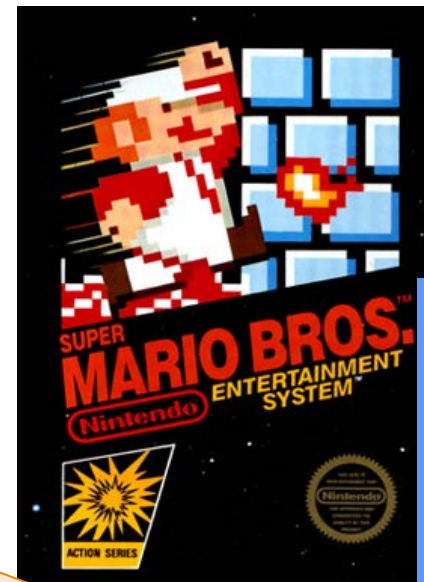
3rd Generation Consoles

III NES (8-bit video game console released in 1985)

- 1 Producer/Game Designer
- 2 Programmers
- 3 Artists

Color: Colors Displayed: 16
Colors Available: 52
Game Size: 8K to 6M
resolution is 256x240

\$50 000



4th Generation Consoles

VI Genesis/SNES(16-bit video game console released in 1988/1993)

1 Game Designer
1 Producer
3 Programmers
4 Artists

Colors: 32768 (256 on screen)

Resolution: 512x448 pixels

Game Size: 4M to 16M

\$300 000



5th Generation Consoles

V Playstation/N64
(32-bit video game console
released in 1994-96)

- 1 Lead Game Designer
- 2 Level Designer
- 1 Producer
- 1 Associate Producer
- 1 Lead Programmer
- 3 Game Programmers
- 1 Lead Artist
- 4 Artists

Colors: 16.7 million (32,000 on screen)
Polygons: 150,000 per second
Resolution: 640x480 pixels
Game Size: 4M to 64M

\$730 000



6th Generation Consoles

VI PS2/GameCube/Xbox
(64/32-bit video game console released in 2000/2001)

1 Lead Game Designer
-4 Level Designer
1 Producer
-1 Associate Producer
1 Lead Programmer
-2 Engine Programmers
-4 Game Programmers
1 Lead Artist
- 10 Artists

Colors: 16.7 million (32,000 on screen)

Polygons: 6 to 12 million polygons

Resolution: 720 × 480 pixels

Game Size: CAV miniDVD (1.5G)/DVD

**\$3 000 000 to
\$5 000 000**



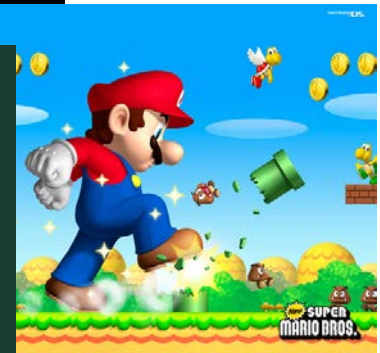
7th Generation Consoles

VII PS3/Wii/Xbox360
(128-bit? video game console Released in 2006)

- 1 Director of Game Designer
- 2 Game Designers
- 4 Level Designer
- 1 executive Producer
- 2 producers
- 1 Associate Producer
- 1 Lead Programmer (Engine)
- 3 Game Programmers
- 1 Lead Programmer (Game)
- 6 Game Programmers
- 1 Art Director
- 3 Lead Artist
- 14 Artists

**\$18 800 000 to
\$28 000 000**

Colors: 16.7 million
Polygons: 60m (Xbox360 500m)
polygons
Resolution: 4:3 and 16:9 (HD)
Game Size: DVD/Harddisk



8th Generation Consoles

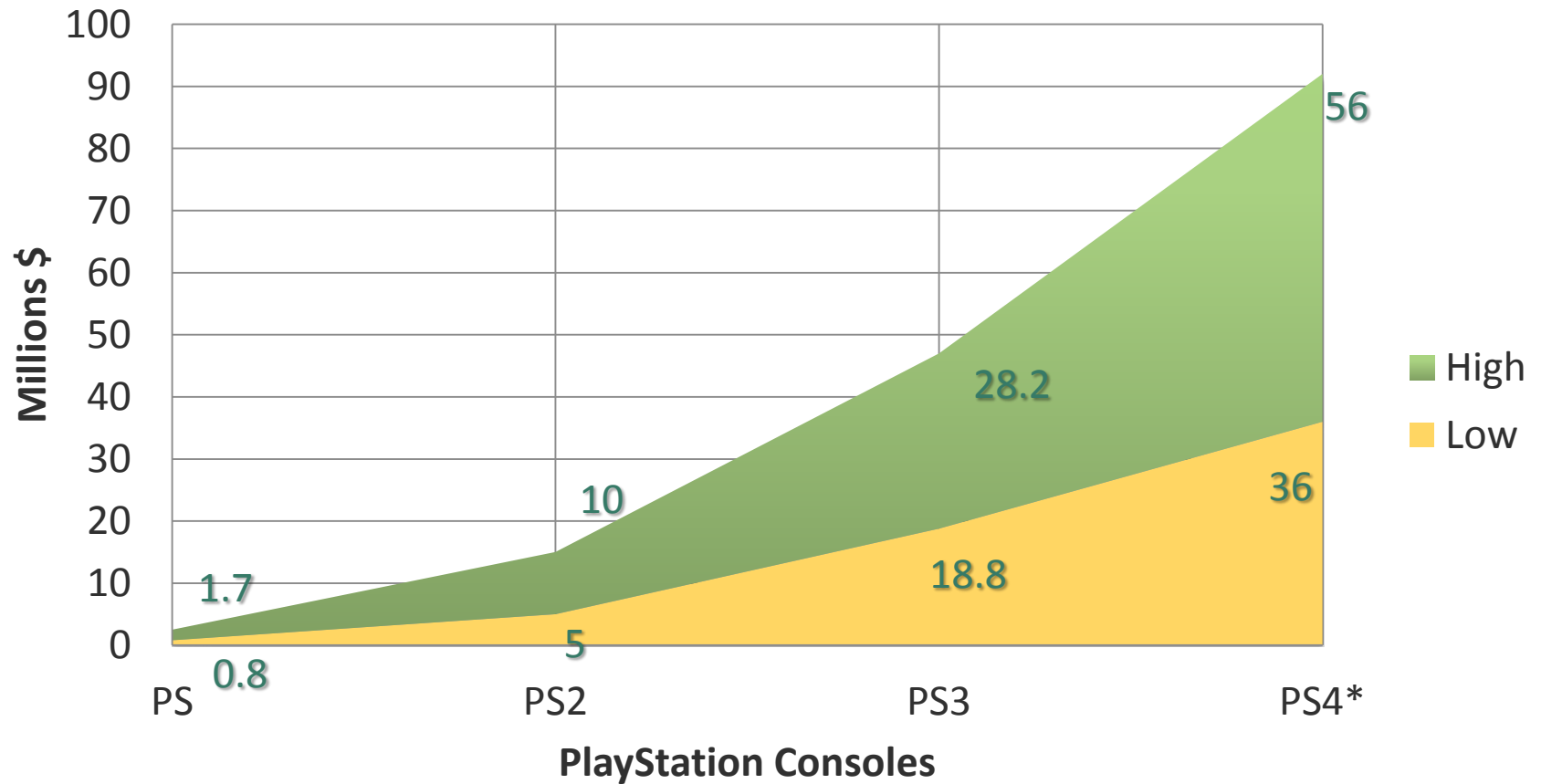
- **focus on non-graphical features**
 - Experience
- PS4 dev kit costs \$2,500, Xbox One's \$500
- Killzone: Shadow Fall (on PS4)
 - 150 staff, 2.5 year development
- Take-Two Interactive boss Strauss Zelnick “**would not be a whole lot more expensive than current consoles**”.
- Tim Sweeney of Epic Games “**development costs would double.**”



Wii U



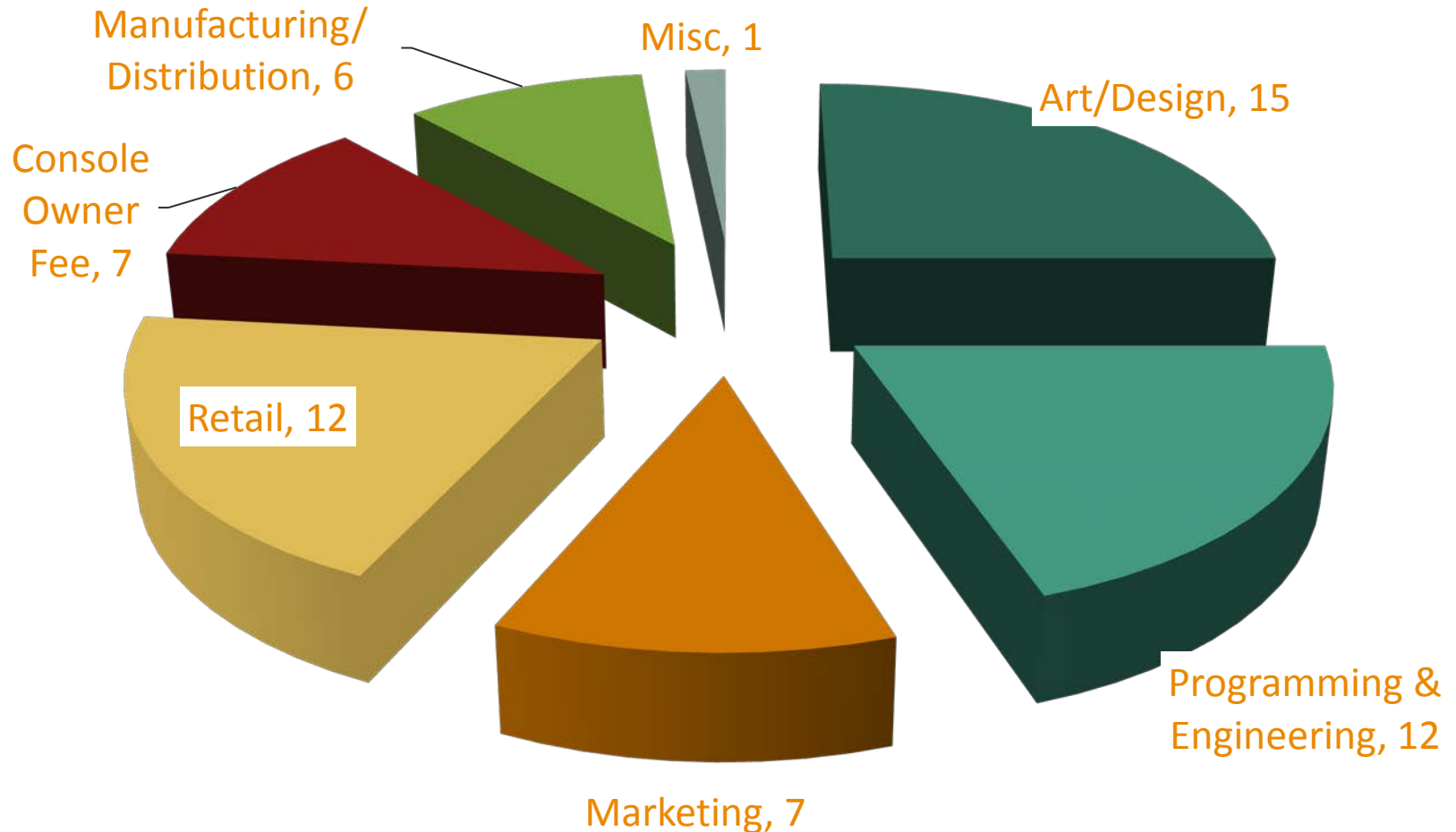
Average PS Titles



Development Cost

- AAA games now cost far too much to make.
 - more content → more man hours than previous generation games.
- The average development budget for a multi-platform next-gen game is \$18-\$28 million, according to new data.
 - development costs for single-platform projects at an average of \$10 million.
- The figures themselves may not be too surprising, with high-profile AAA games often breaking the \$40 million barrier.

Breakdown of \$60 Title



*The amount paid to independent video game developers can be anywhere from 10% to 70%

Will not be tested

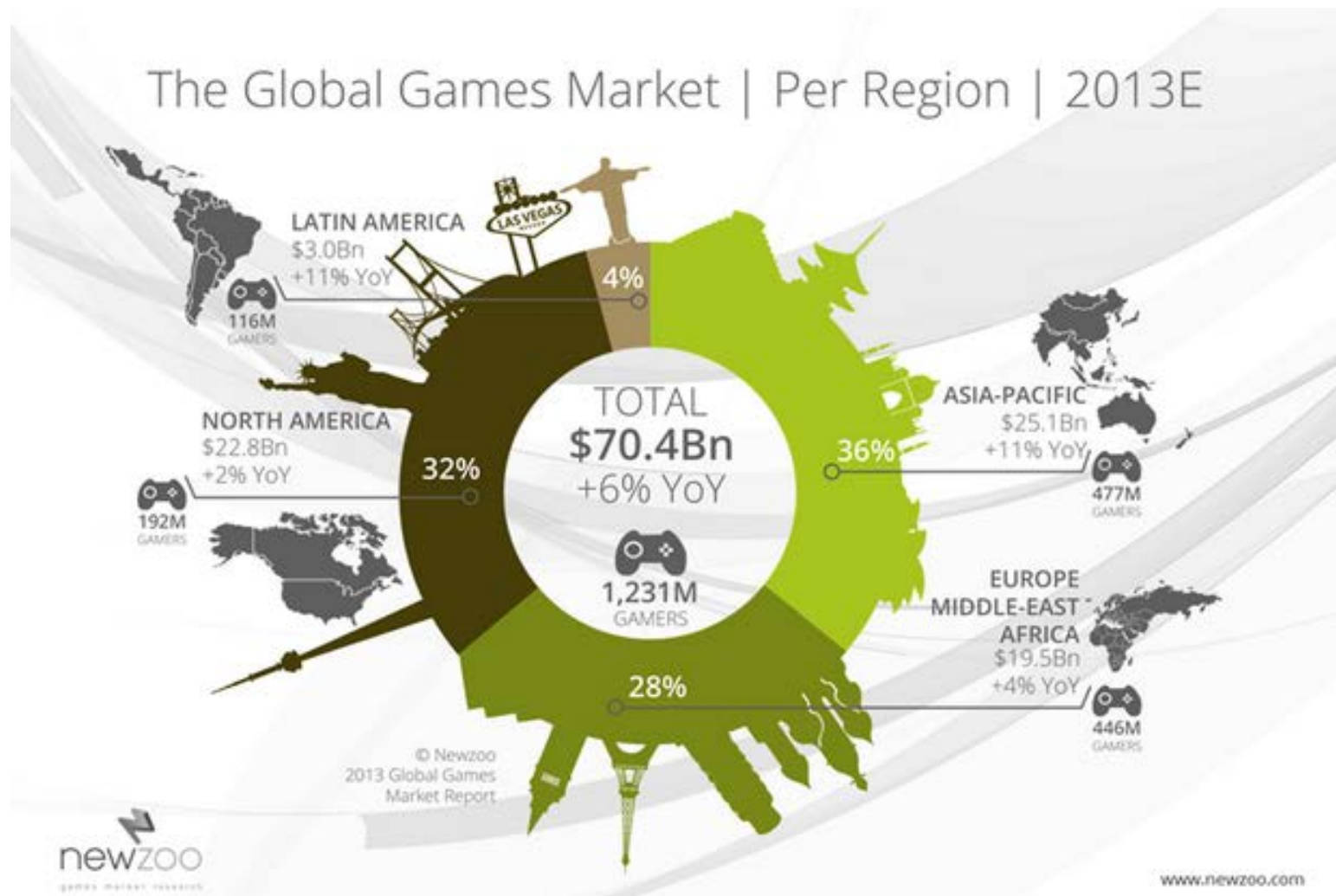
Market Trends

Global Games Market



<http://www.newzoo.com/infographics/global-games-market-report-infographics/>

Global Games Market



<http://www.newzoo.com/infographics/global-games-market-report-infographics/>

Going Mobile

- 18% (or \$12.3 billion) for mobile games, 42% for console.
- Global Mobile Gaming market to grow at a rate of 27.14% over the period 2012-2016
- Global mobile games market is expected to rise from \$5.4bn in 2008 to more than \$12bn in 2013, and will hit \$13.9 billion in 2016

Comparison

- Android/Apple/Microsoft
 - Device Market share: 75%/17.3%/3.3%
 - App Store actually earned 2.6 times as much absolute revenue as the Android-based Google Play
 - Apple iPhone game revenue

	Google	Apple	Microsoft
Number of users (in millions)	900	600	12
Number of apps (in thousands)	800	1250	160
Number of developers (in thousands)	150	235	45
Number of downloads (in billions)	48	50	.65
Paid to developers (in millions)	900	5000	100

<http://www.forbes.com/sites/tristanlouis/2013/08/10/how-much-do-average-apps-make/>

Why Mobile?

- Shorter turnaround time.
- Big guys entering mobile business
 - EA Mobile, Namco Mobile, UbiSoft
 - IPs ported to mobile platform –Spiderman, X Men, Splinter Cell

	Google	Apple	Microsoft
Average revenue per app	\$1125	\$4000	\$625
Average revenue per developer	\$6,000	\$21,276	\$2,222

Developing an iPhone Game

- Development Cost – \$10,000-\$250,000
 - Angry Birds cost about \$125K-\$180K to develop
 - Hardc-ore game (render, sound, maths, physics, gyroscope etc) about \$125,000
- Other Cost
 - \$99 Apple Annual Fee
 - 30% cut they take for each sale
 - marketing cost around \$2,500

<http://www.tuaw.com/2012/04/02/developing-my-first-iphone-game-the-inside-story/>
<http://www.bluecloudsolutions.com/blog/develop-app-angry-birds/>

Emerging Trends

- Future of Gaming: 5 Exciting Emerging Trends
 - Virtual Reality (VR), **Secondary Screens**, Open-Source Gaming, **Augmented Reality (AR)**, Cloud Gaming
 - <http://www.hongkiat.com/blog/future-of-gaming/>
- Gaming in 2013: Five Industry Trends to Watch
 - Free-to-Play, **More Sequels, More Reboots, and More Familiar Faces Are On the Way**, The Indies Will Inspire, **“Kill Used Games”**, New Consoles.
 - <http://www.technologyguide.com/feature/gaming-in-2013-5-industry-trends-to-watch-for/>
- What's Next? Chris Pruett on industry trends and future of games
 - http://www.gdconf.com/news/whats_next_chris_pruett_on_ind.html

Indie Game Developers Starting Your Own Studio

Indie Game Developers

- Game development is heavily bound by huge capital investments by the **game publisher**.
- 'Indie' is commonly used in the game industry to represent a small team or an individual who **independently** develops a commercial-quality video game.
 - Indie developers cannot match the resources or might of the large producers.

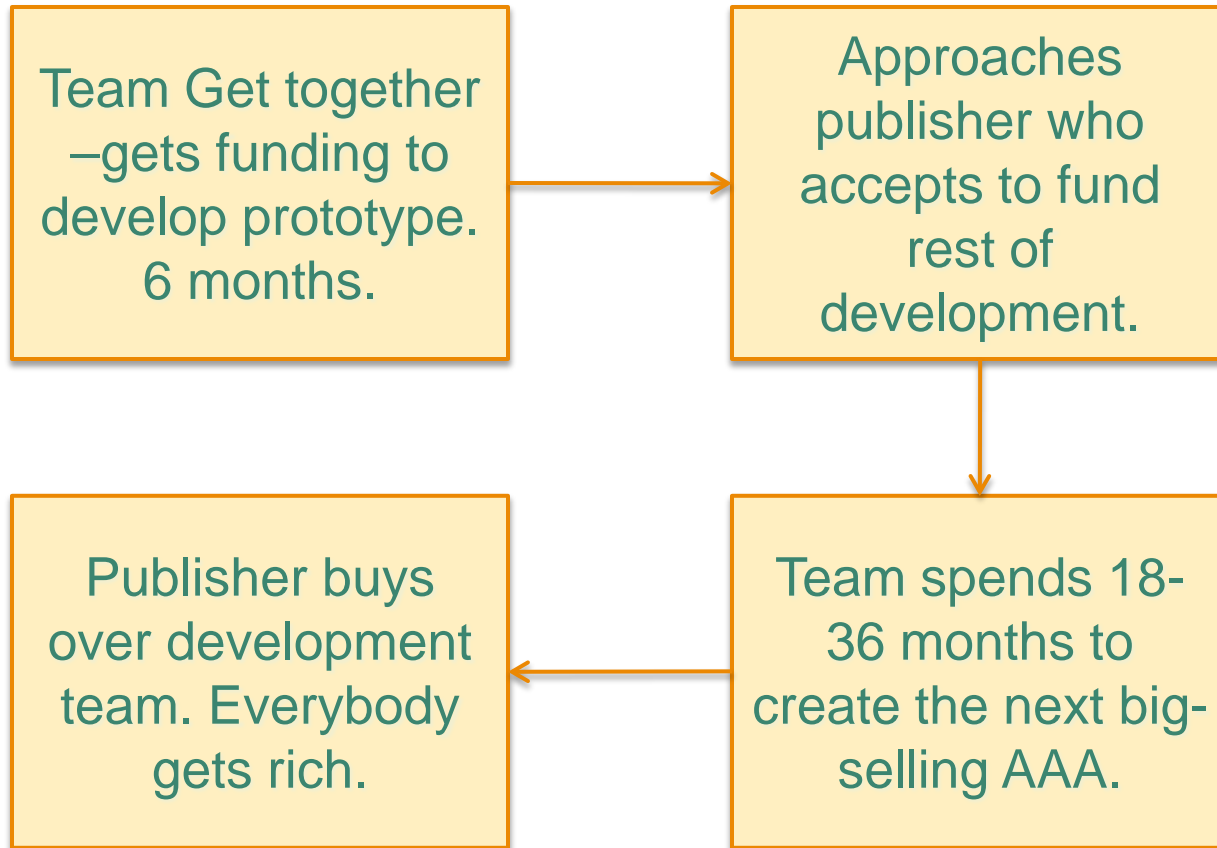
A Game Studio in the Clouds by Emeric Thoa

http://www.gamasutra.com/view/feature/179712/a_game_studio_in_the_clouds.php

The Secret of Success???

- Life is a marathon, not a sprint.
 - Develop fast and release often
- “The Price is Right”
 - \$49.90 or \$4.99
- Get noticed!
- Find partners.
 - Big is good. “Built in Singapore”, “Games Fest”
- Know the people.
 - Press, Agencies
- Find strong backers (sponsors)
 - Microsoft, Apple, ???
- Be pragmatic: “A great game need not be great technology.”

Business Model



Challenges by Developers

- As salaries increase, studios try to contract non-critical tasks to companies in countries with cheaper labour.
- Art Assets
 - More polygons → higher res texture → more animation → more storage (terabytes!)
 - Faster machines
- Development team
 - Better console → more code per second → more and better people → more stations
- More cost!

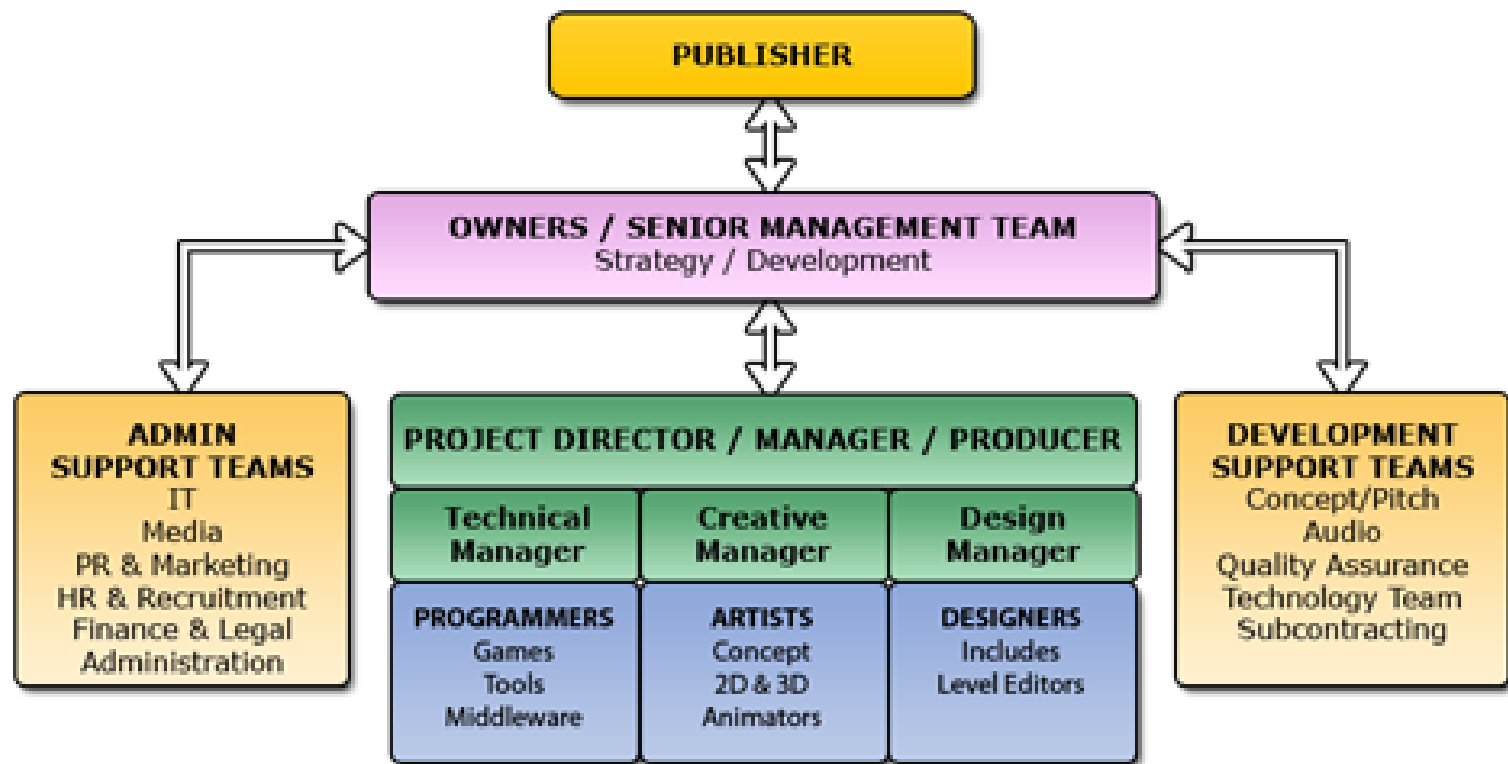
Case Study: Go Indie

- When Game Developers Go Indie, Everybody Wins
 - <http://www.wired.com/gamelif/2010/08/indie-games/>
- **Endless Space**: When Triple-A Developers Go Indie
 - http://www.gamasutra.com/view/feature/182470/endless_space_when_triplea_.php
- GDC Austin: From AAA To Indie - **Tiger Style** and the Making of **Spider**
 - http://www.gamasutra.com/php-bin/news_index.php?story=25261
- The Opportunities And Dangers Of Going Indie by Paul Hyman
 - http://www.gamasutra.com/view/feature/134821/the_opportunities_and_dangers_of_.php
- From Two Years to Two Months: Transforming a Studio by Eduardo Baraf
 - http://www.gamasutra.com/view/feature/132712/from_two_years_to_two_months_.php

Studio Setup

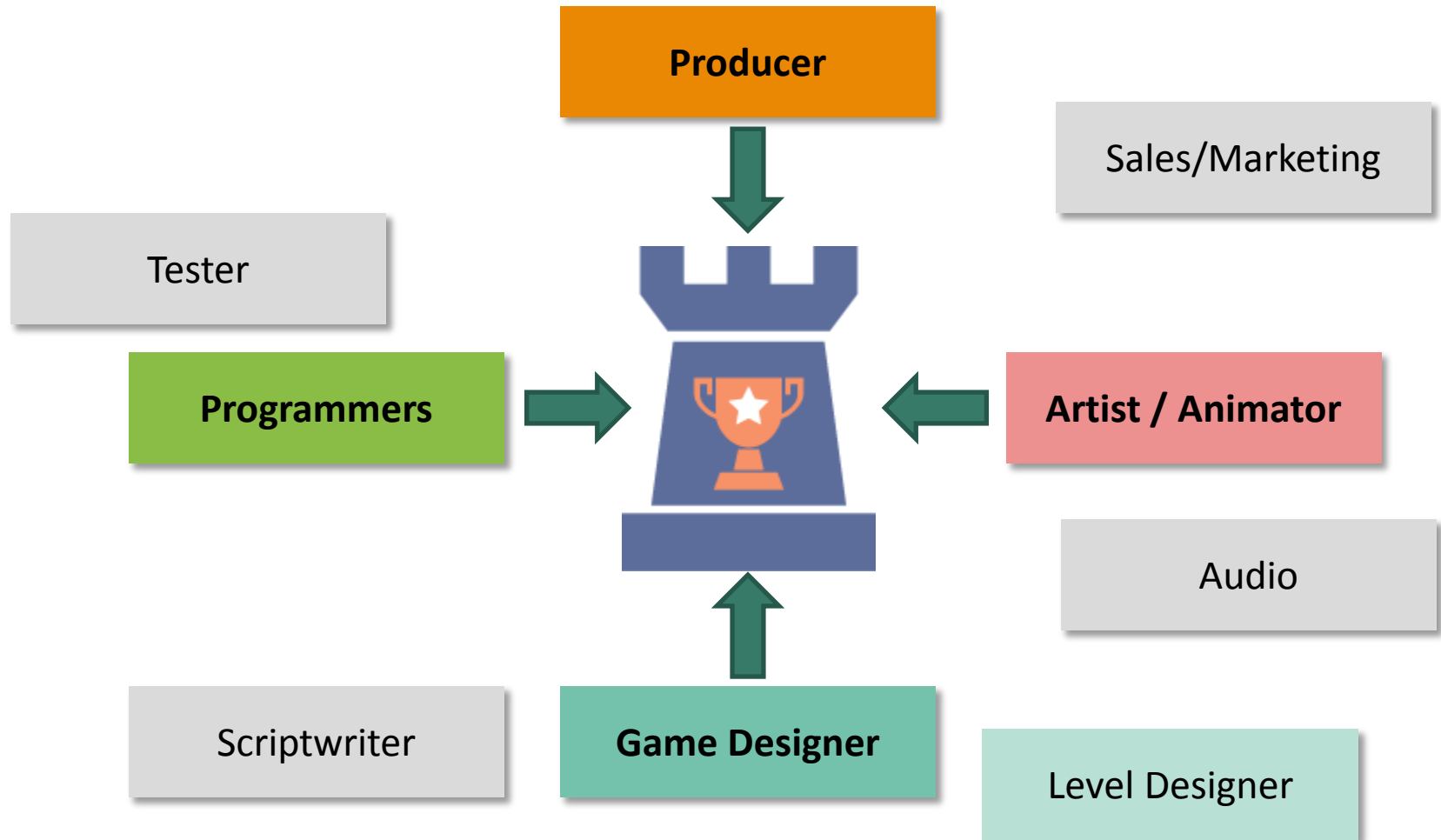
Game Studio Structure

Studio Structure



http://www.blitzgamesstudios.com/blitz_academy/game_dev/company_structure

The Team



The Producer

- Oversees the team and work on a day-to-day basis
 - what's going on in every department
- Negotiates contracts, reports to upper management/stakeholders
- Validates design papers and milestones
- Arrange testing with QA

The Game Designer

- Responsible for the game concept and gameplay
- Will often give an artistic direction to follow

The Level Designer

- Responsible for the layout of the game levels
- Uses Game Play Elements
- Creates maps using the Level Editor
- Tries to create interesting and balanced challenges for the player

Artists/Animators

- creates the graphical elements of the game
- draw concepts for the characters and environment highlighted in the Game Design Documents.
- create characters meshes/animation cycles.
- textures and the lighting

Programmer

- analyze software requirements of game development projects and technical approaches.
- integrating the video, art and sound assets into a playable game
- program special effects/components of the video game.
- create in-house tools that facilitate production flow
 - viewers

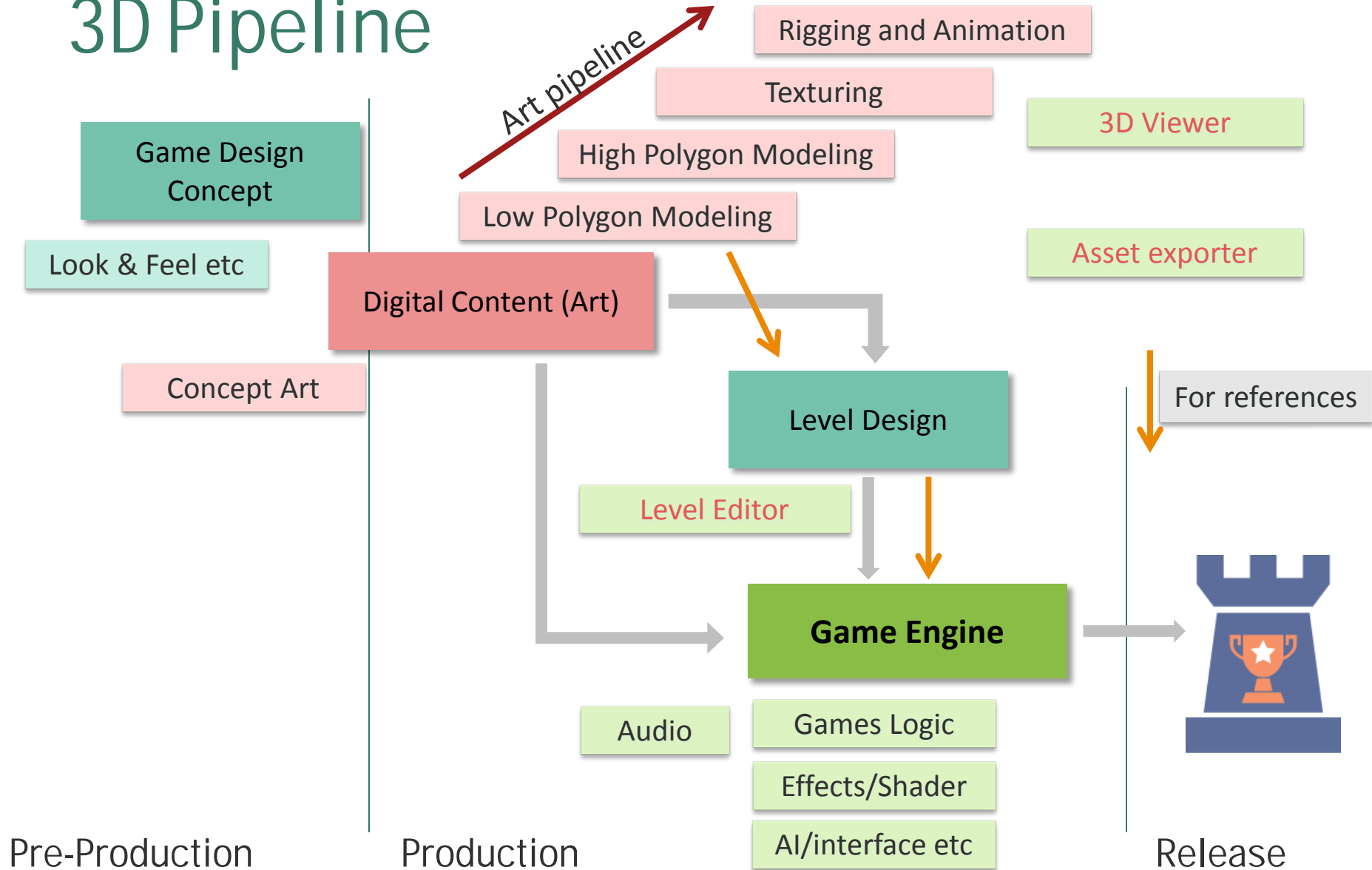
Not to be Forgotten

- Management
- Audio: Actors, Voice talent
- Sales/Marketing
- Testers/QAs

Studio Setup

Game Production Pipeline

3D Pipeline



Automated Pipeline Tasks

- Applications, scripts or man intervention are required to go through the pipeline's steps
- ... but if a script can do the job automatically , it can save time and money !
- Software/hardware: character exporters, compiler, renderer, compositing software...
- People: submitting files, starting build process, checking output...

Managing the Pipeline

- Pipeline process should be documented
- Tasks should be assigned
 - don't ask the content designer to do the build because no one else bothered doing it before...

Class Exercise

Costing and Budgeting

All men are
created equal

Planting trees

Challenging Math

10 workers were assigned to lay a brick wall in 3 weeks.

2 weeks passed and 3 workers were re-assigned to another job.

How many more days is needed for the reminding workers to complete the wall?

They worked
7 days a week

They don't fall sick

Case Study: Business Model

- Budgeting and Scheduling Your Game
 - http://www.gamasutra.com/features/20010504/ahearn_03.htm
- The New Studio Model by Stuart Roch
 - http://www.gamasutra.com/features/20041029/roch_pfv.htm
- GDC Online: Strong Team Culture, Customer Focus Key To *League of Legends* Success
 - http://www.gamasutra.com/view/news/30881/GDC_Online_Strong_Team_Culture_Customer_Focus_Key_To_League_of_Legends_Success.php
- How to be a Better Game Designer
 - http://www.gamasutra.com/view/feature/185588/how_to_be_a_better_game_designer.php