Introduction to Game Development

By
Abdelrahman Shaheen

Agenda

- What are video games?
- What are video games genres?
- How big is the game industry to date?
- How to develop a video game from start to finish?
- What are the roles in the video games industry ?
- What is the career path for every team member?
- How to get into the video games industry?
- References

What are video games?

- A video game refers to any interactive content played by electronically manipulating images produced by any computer program or application on any display.

- Mobile & Tablet Games

- Web Games

- Console Games

- PC Games.

What is the difference?

- Interactivity is what makes games differ from movie and other art forms.
- The content of the game as a medium is what makes it differs from other software. And obviously it is more fun.

What are video games genres?

- Games are often classified into genres, which purport to define games in terms of having a common style or set of characteristics, e.g. as defined in terms of perspective, gameplay, interaction, objective, etc.

What are video games genres?

| Adventure	Action	Action Adventure	Platform
Fighting	First Person Shooter (FPS)	Real-time strategy (RTS)	Turn-based strategy games
Role playing games (RPGs)	Rhythm games (music games)	Puzzle games	Traditional games
Massively multiplayer online	Stealth games	Survival horror games	Simulation games
Racing games	Sports games	Educational games	

How big is the game industry to date?

- Avatar vs GTA 5 (Equal Revenue Generator).
- Video Game market is highest in entertainment industry (More than Film Industry).

How big is the game industry to date?

- **The Dark Knight**
  $239 million as its first week revenue
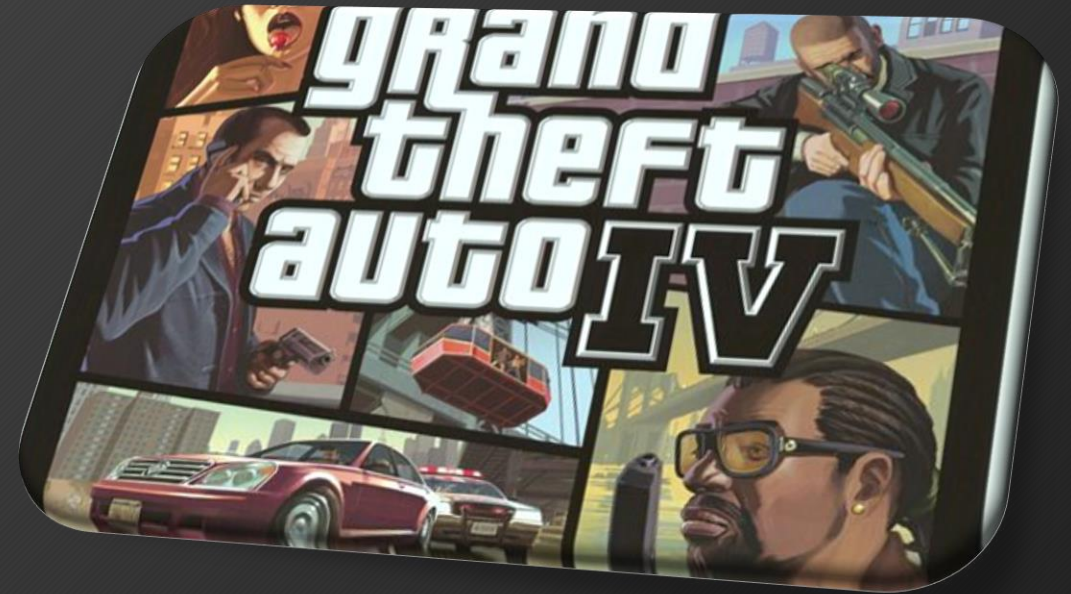
- **Grand Theft Auto 4**
  $500 million as its first week revenue

Top 100 Countries by Game Revenues | 2015

- **Totals:** **$91,252,478,000**

- **Top countries:**
China: $22,227,194,000
United States: $21,962,491,000
Japan: $12,328,860,000
 South Korea: $4,022,366,000
Germany: $3,654,669,000

- **What about Egypt ?**
#54
revenue: $95,817,000

Source: NewZoo game market research

companies

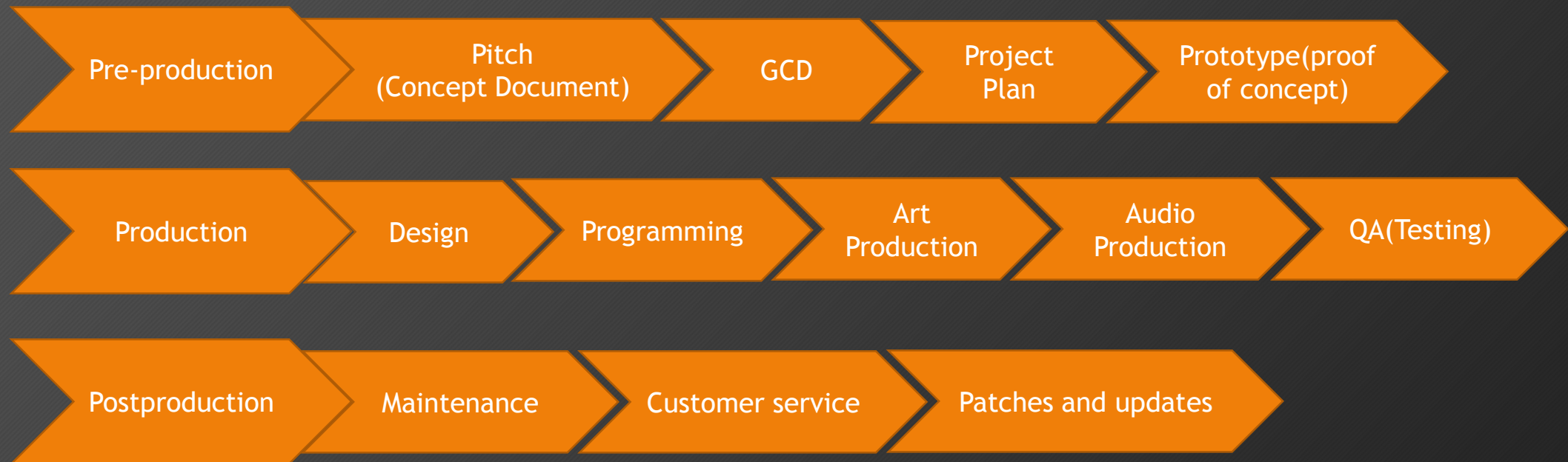Source: http://www.gamedevmap.com

How to develop a video game from start to finish?

- Game development process

| Pre-production | Pitch (Concept Document) | GCD | Project Plan | Prototype(proof of concept) |

| Production | Design | Programming | Art Production | Audio Production | QA(Testing) |

| Postproduction | Maintenance | Customer service | Patches and updates |

Pre-production

- Pitch
- Game Design Document (GDD)

Production

- Game Design
- Game Art
- Programming
- Audio
- QA

Game Design

- Game Genre.
- Design Documents.
- The content and the rules of the game.
- Describe what the game what looks like and acts like.
- Game design is very critical and require experience and knowledge.

Game Art

- Artists create all the images in a game including all the landscapes, buildings and characters.
- 2D
  - Concept Art
  - Sprites
  - Texture Art
  - UI Art
- 3D
  - Concept Art
  - Modeling
  - Texture
  - Animation

Programming

- Game Engine
- Gameplay programming
- AI Programming
- Graphics Programming

Audio

- Recording, design and editing of sound effects.
- Sound design and audio engineering are growing in importance.
- These people will produce music, sound effects, dialogue and oversee voice performance.

QA

- QA means testing – from functionality and game play to localization (testing in-game text and audio in foreign languages). All bugs are reported, fixed and re-tested.

- QA is one of the best entry points into the industry for first-time job seekers . Graduates may accept a role as a tester to get their 'toe in the door' of a studio
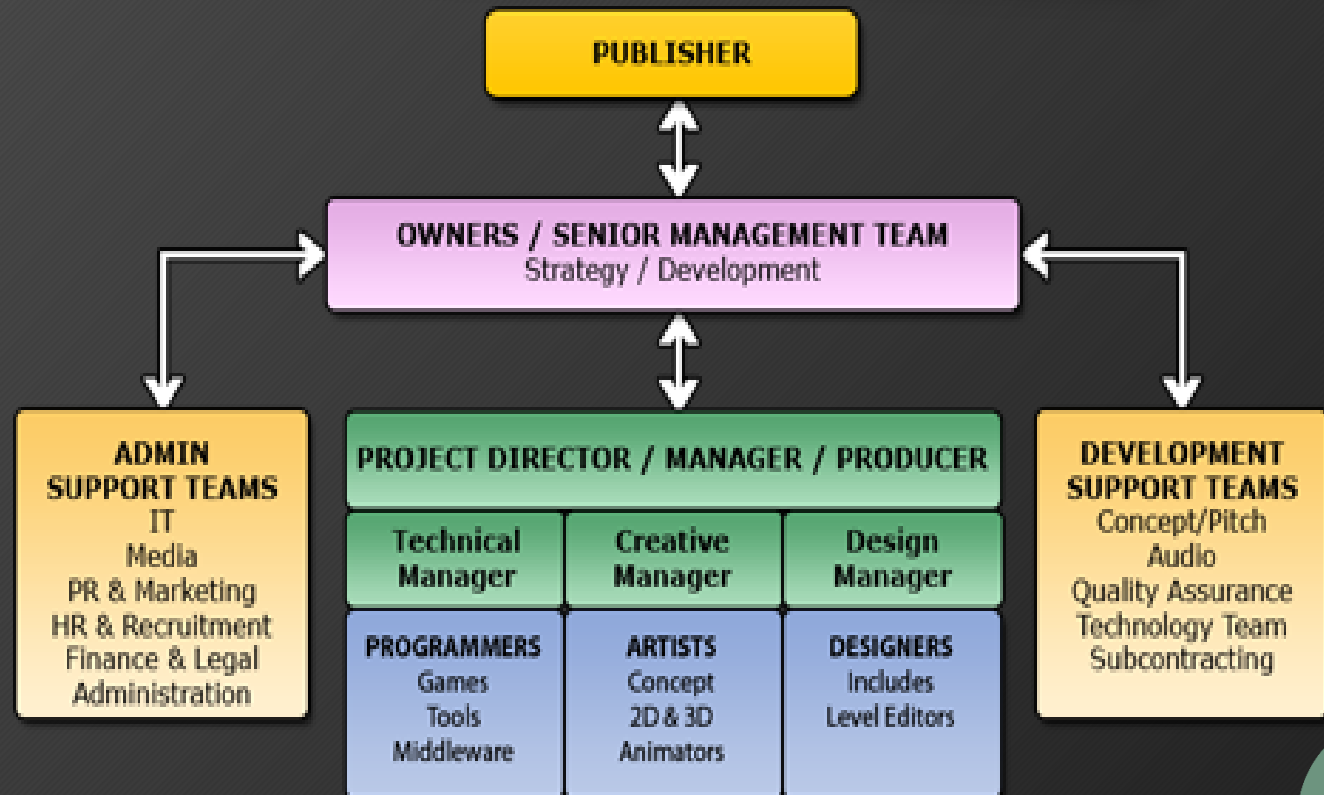
Postproduction

- Maintenance
- Customer Service
- Patches and updates

What are the roles in the video games industry ?

- Producer
- Publisher
- Development Team

Producer

- May also referred to as project manager, project lead, or director.
- Internal producer working for the developer, manages the development team, schedules, reports progress, hires and assigns staff, and so on.
- External producer working for the publisher , oversees the developer progress and budget.
- Producer's responsibility includes PR, contract negotiation, liaising between the staff and stockholders, schedule and budget maintenance, quality assurance, beta test management, and localization.

Publisher

- A video game publisher is a company publishes video games that they have either developed internally or have hade developed by an external video developer.

- Responsible for manufacturing and marketing, include market research and all aspects of advertising.
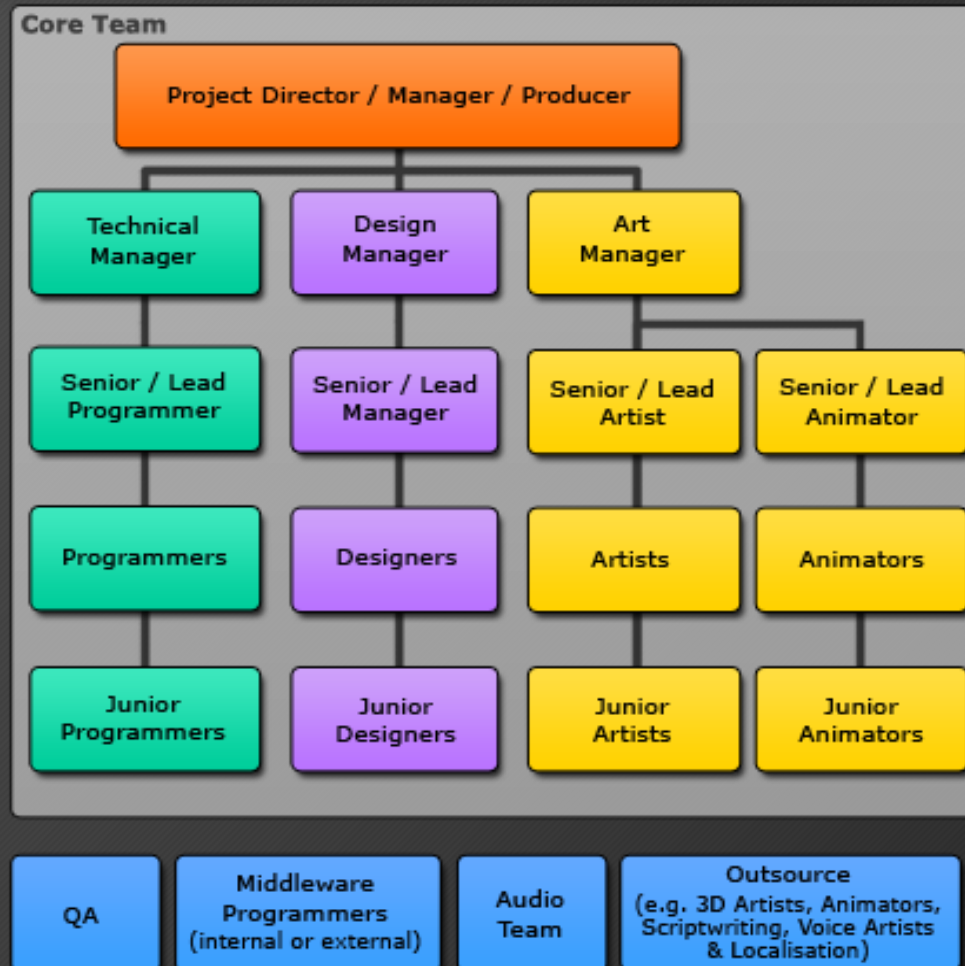
Development Team

- Designer
- Artist
- Programmer
- Sound engineer
- Tester

What is the career path for every team member?

How to get into the video games industry?

- Answer to this question requires answering for two questions
  - What to learn or skills needed to be video game developer?
  - Where to get a job in the video game industry?

Passion

- First you should love video games, so this is more of a passion than a skill, but if you want to get a job as a video game designer, you have to love playing video games.

- Hiring managers want to know that you're big into the world of gaming—knowing about the latest games, consoles, trends and what constitutes a good video game.

What are skills you need to be video game developer?

- Game developer needed skills
  - Math
  - Physics
  - AI
  - Very good programing Skill
  - Graphics (OpenGL, XNA)
  - Algorithms
  - Data structure
  - Problem solver
  - Networking
  - Game engines (Unity, Cocos2d-x,YOYO, ...)

What skills you need to be game designer?

- Creativity
- Practicality
- Problem solving – having an
- analytical attitude
- Excellent communication skills
- Team player

What skills you need to be game artist?

- 2D Artists
  - 2D paint packages (Photoshop, Painter)
  - 2D vector graphics packages (Illustrator)
- 3D Artists And Animators
  - 3D packages (Maya, 3DS Max, Lightwave)
  - Specialist 3D animation packages (e.g. Animator)
  - 2D/traditional animation formats
  - Game studios Animation.

What skills you need to be game animator?

- 3D packages (Maya, 3DS Max, Lightwave)
- Specialist 3D animation packages (e.g. Animator)
- 2D/traditional animation formats
- Game studios Animation.

What skills you need to be game tester?

- Bug tracking software skills
- Excellent written and verbal communication skills
- Team player
- Attention to detail

What skills you need to be game audio engineer?

- Good communication

- Attention to detail

- Knowledge of audio editing software (e.g. Soundforge)

Where to get a job in the video game industry?

- Gaming company
- Indie game

Indie game

- Video games created by individuals or small teams generally without video game publisher financial support. Indie games often focus on innovation and rely on digital distribution.

- Indie gaming has seen a rise in the latter half of the 2000s decade, primarily due to new online distribution methods and development tools.

Indie game

- Some games originated as indie have become very successful financially

- *Braid*, *World of Goo*, and *Minecraft*.

Publishing you game

- Publishing video game become so simple today
- Playstore, Appstore, Xbox store,..
- Game website
- Facebook
- Online games

Monetizing

- **Advertising**
  - **Banner ads**
  - **Interstitials between levels**
  - **More games button**
  - **Game Exit**
  - **Selling data**

Monetizing

- **Selling Content (DLC)**
  - **Premium version** –You release a light version of your game and allow users to upgrade to the full version via an In-App Purchase.
  - **Worlds (visual customizations)** – with this option you create and sell a customized version of the original game by modifying the look and feel of the game.
  - **Wallpapers** – some users will like your game so much, they will buy a wallpaper for their phone.
  - **Ringtones** – if you composed an original music for your game you could sell it in your store.

Monetizing

- **Limitation Removal**
  - **Remove ads**
  - **More Energy/Life/Turns**
  - **More Time**

Monetizing

- **Virtual Economy**
  - **Double coins**
  - **Save Me**
  - **Discoverable items**

Monetizing

- **Merchandising**
  - **T-shirts** – Your fans want to show how much they love your game? You can sell t-shirts in your game.
  - **Lunch boxes** – Popular Merchandising option with kids games.
  - **Branded cases** – What could be a better match for a game then a shield for the user smartphone.

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