

IDEA TO REALIZATION

DEVELOPMENT, TESTING, MONETIZATION

TOMÁŠ POLÁŠEK IPOLASEK@FIT.VUTBR.CZ

BRNO UNIVERSITY OF TECHNOLOGY

FACULTY OF INFORMATION TECHNOLOGY

DCGM, CPhoto@FIT

FACULTY OF FINE ARTS

GAME MEDIA STUDIO



GAME DEVELOPMENT PROCESS

- The Process
- No Magical Formula
- Busy Idiots
- Why do we Fail?
- Assumptions [7]
 - ▶ Borrowed → Other Field
 - ▶ Inborn → Cognitive Bias
- Battling Assumptions



Source: Hearthstone

JESSE, WE NEED A PLAN

- Time & Resources
- Pitfalls of Planning
 - ▶ Too much \rightsquigarrow Overplan \uparrow
 - ▶ Not Enough \rightsquigarrow Underplan \downarrow
- Fight Chaos \rightarrow Just Enough?
- The Cost of $\uparrow\downarrow$
- Embrace Chaos

If you fail to plan,
you are planning to fail!

Benjamin Franklin

To be a game designer
is to be wrong.

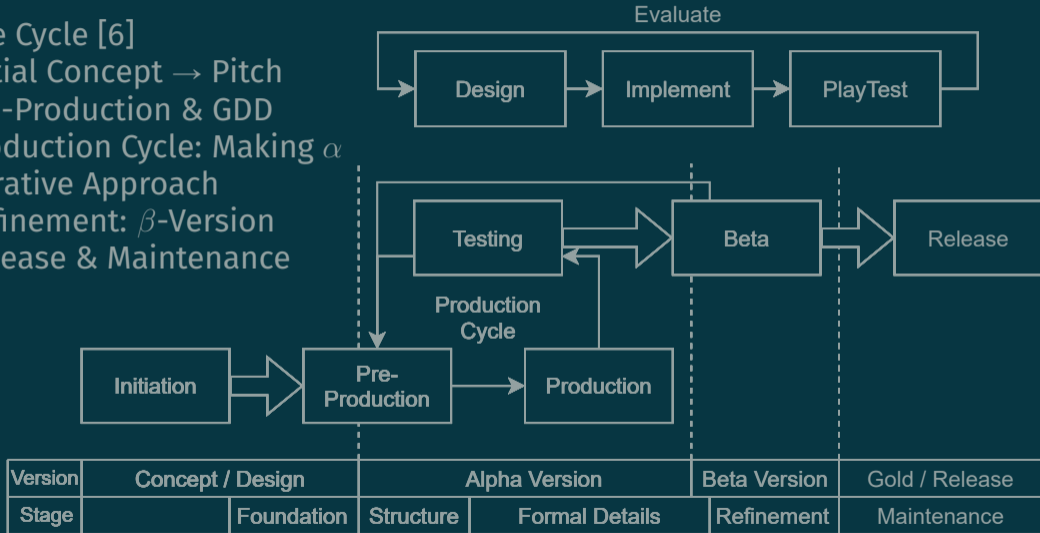
Soren Johnson



Source: Diablo Game Concept

GAME DESIGN LIFE CYCLE

- Life Cycle [6]
- Initial Concept → Pitch
- Pre-Production & GDD
- Production Cycle: Making α
- Iterative Approach
- Refinement: β -Version
- Release & Maintenance



Source: Game Development Cycle Guidelines [6]

PITCHING A GAME

- Getting Interest
- Elevator Pitch
- Game Pitch Document:
 - ▶ Short and Concise
 - ▶ Genre, Story, Look & Feel
 - ▶ Controls & Gameplay
 - ▶ Platform, Market & Budget



Source: TinyBuild SpeedRunners Pitch

“Mario Kart As an Online 2D Platformer”

Guacamelee!

Genre: Beat 'em Up

Platform: PSN/XBLA

Market: T for TEEN (+13)/ or +10?

STORY:

“La Calaca” is back and this time he’s kidnapping innocent souls to rebuild his un-dead army and to awaken the super evil Kukulcantalcoatl@lapoch@fangaricuhimicuaru. Only the reincarnation of La Catrina can awaken him, and la Calaca has found it: El Presidente’s daughter, the most beautiful girl in the world who he promptly kidnaps to sacrifice... Who will save the souls and stop the evil Calaca from unleashing the Kukulcantalcoatl@lapoch@fangaricuhimicuaru? Recover your honor, get the girl. Be awesome.

A FEW THINGS ABOUT LUCHADORES:

Luchadores are looked up to as protectors against the forces of evil. The worst that can happen to a luchador is to reveal their own identity. In the game, they “die” when their mask is removed. (but maybe they have masks underneath masks!) Wrestling moves are their regular attacks, but combos or special items can unlock super human crazy power attacks, like astro tiger lick, or punch drunk punch!

GAMEPLAY:

A classic 2-D Side-scrolling Beat 'em Up, with over the top cut scenes! All the drama and all the fighting!

You have a bunch of characters to choose, each with their own attacks and strategic moves and cool backstories. Multiplayer option, Arena option and a lot of mini-games within the game.

With stylish visuals and awesome synthesizer mariachi soundtrack!!!!



Source: One Page Pitch for Guacamelee

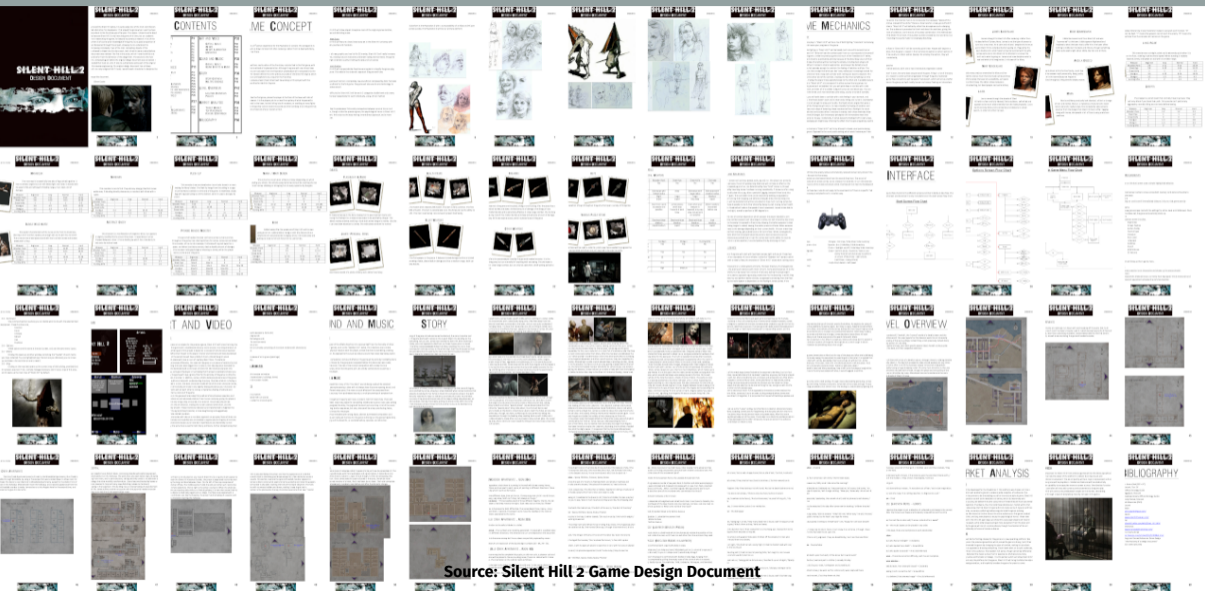
GAME DESIGN DOCUMENT

- Pitch → Design Proposal
- “Is This Really Necessary?”
- Different Approaches
- Content of a GDD [4]
 - ▶ Overview: Short Summary, Pillars
 - ▶ Concept: Background, Genre, Platform
 - ▶ Gameplay: Flow, Mechanics, Systems
 - ▶ Interface: UI, Controls, Mockups
 - ▶ Style: Art Style, 2D & 3D, Concept Art
 - ▶ Sound: Goals, Effects, Localization
 - ▶ Narrative: Story, Boards, Endings
 - ▶ Levels: Overview, Locations, Layouts
 - ▶ Technical: Platforms, Tools, Hardware
 - ▶ Marketing: Target, Funding, Monetization
 - ▶ Others: Achievements, Backend, Revision
- Modern GDD ⇔ Flexible Wiki / Bible



Source: Diablo Game Design Document

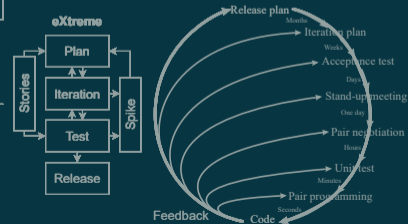
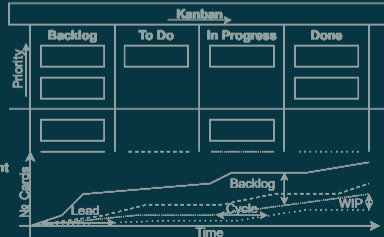
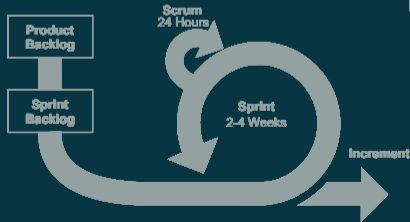
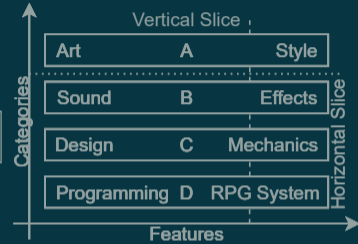
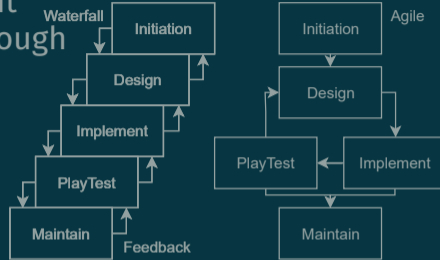
GAME DESIGN DOCUMENT



Source: Silent Hill 2 Game Design Document

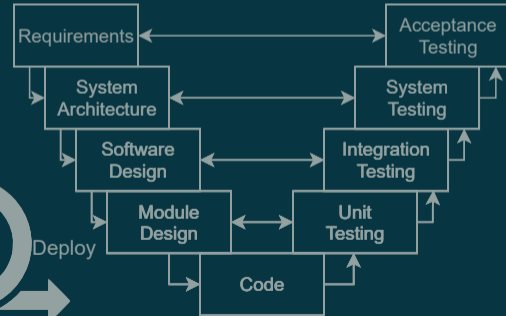
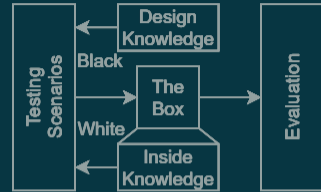
KEEPING IT AGILE

- Project Management
- Waterfall → Not Enough
- Moving the Bar
- Agile Methodology
 - ▶ Scrum [8]
 - ▶ Kanban [5]
 - ▶ XP [2]
- Milestones : HS VS



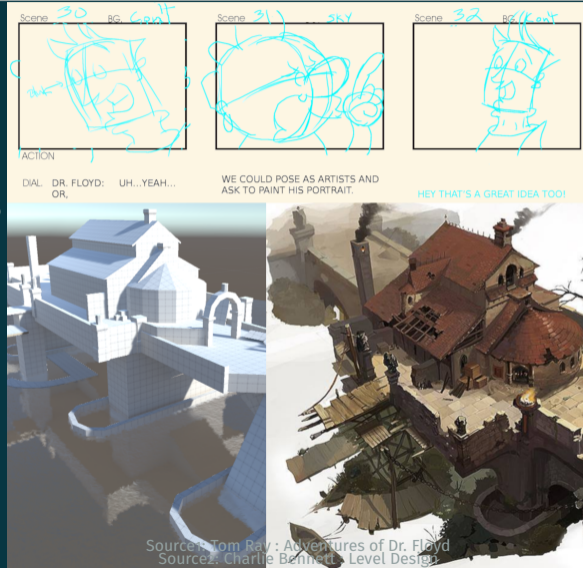
TESTING GAMES

- Making Sure it Works
- Testing Software
 - ▶ Boxes : Black vs White
 - ▶ Unit → Integration → System
 - ▶ Acceptance Testing
 - ▶ Regression & Continuous Integration
- Play-Testing [7]
 - ▶ Playing the Game “Game”
 - ▶ Test Protocol → Difficulty, Coherency, Fun
 - ▶ Self-Test, Over-Shoulder, Kleenex
 - ▶ Automated Testing? (I)
- Silent Review



PROTOTYPING GAMES

- Assuming it Works → Prototype
- Premature Production [7]
- Design & Mechanics
 - ▶ Physical → Pen & Paper
 - ▶ Digital → Excel, XMind, Python
- Narrative → Story Boards & Graphs
- GUI → Mockups
- Grayboxing [7]
 - ▶ Placeholder Asset, Mechanic, Level
 - ▶ Good for Mechanical
 - ▶ Bad for Emotions
 - ▶ Difficult Play-Tests



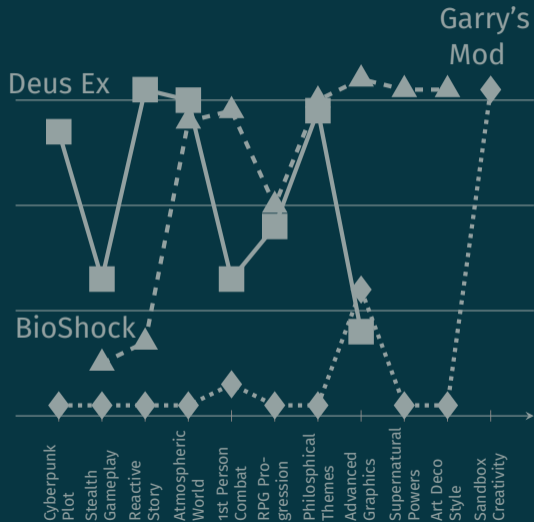
MARKET AND INNOVATION

- The market [7]
- Design ↔ Purpose
- Positioning Game
- Matthew Effect
- Innovation × Stagnation
- “Innovator’s Dilemma” [3]



KNOW YOUR VALUE

- Market Segment [7]
- Market Value of a Game
- Value Curve



TARGETING AUDIENCE

- Value Focus [7]
- Choosing the Focus
- Confirmation Bias [1]
- Setting Expectations

Nobody Knows Anything

Tynan Sylvester [7]

Game	Primary MV	Secondary MV
Super Meat Boy	Fast Platforming	Retro Style
Dwarf Fortress	Emergent Narrative	Building
Counter-Strike	Competitive FPS	Gambling Simulator
Minecraft	Creative Building	Adventure
LIMBO	Dark Atmosphere	Puzzle Platformer
Castle Crashers	Fast Beat'em up	Cartoon Style
Braid	Time-Based Puzzles	Allegorical Style

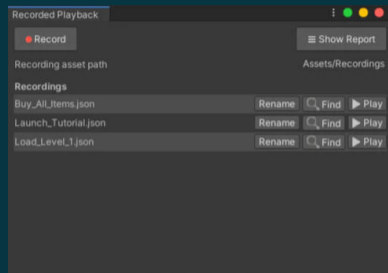
I HAVE A GAME, WHAT NOW?

- Shipping a Game
- Developer × Publisher
 - ▶ Marketing, Shipping, Deals
 - ▶ Combined -> Blizzard
 - ▶ Self Publish
- Online platforms
- Early Access / GreenLight
- Legal Matters: Contract, NDA



TESTING AND DEPLOYMENT IN UNITY

- Full Testing Support
- Unity Test Framework
 - ▶ Unit Tests
 - ▶ Edit & Play Mode
 - ▶ Platforms
- Automated QA
 - ▶ Testing UI
 - ▶ Record Interaction
 - ▶ Playback
- Major Distributors → Steam



```
void RunStarted(ITestAdaptor testsToRun);  
  
void RunFinished(ITestResultAdaptor result);  
  
void TestStarted(ITestAdaptor test);  
  
void TestFinished(ITestResultAdaptor result);  
  
void Execute(ExecutionSettings executionSettings);  
  
void RegisterCallbacks<T>(T testCallbacks, int priority = 0) where T : ICallbacks;  
  
void UnregisterCallbacks<T>(T testCallbacks) where T : ICallbacks;  
  
void RetrieveTestList(TestMode testMode, Action<ITestAdaptor> callback);
```

ADDITIONAL RESOURCES

- [Article] Ken Birdwell : Design Process for Creating Half-Life
- [GDC] Michael Booth : From Counter-Strike to Left 4 Dead
- [Article] TinyBuild : How To Pitch Your Indie Game
- [YouTube] Brian Upton : 30 Things I Hate About Your Game Pitch
- [Article] Leandro Gonzalez : How to Write a Game Design Document
- [Article] Mark Layton : Video Game Development With Scrum
- [YouTube] Alen Ladavac : Fast Iteration in Talos Principle
- [YouTube] Jeff Vogel : Failing to Fail: The Spiderweb Software Way
- [YouTube] Various : Rules of the Game 2016, 2017
- [Article] Hal Barwood and Noah Falstein : The 400 Project
- [Games] Hal Barwood : Playful Challenges

Source: Building Crown

ROSTER



MAP



Thanks For
Your Attention!

Approach Human

Avadon 3: The Warborn



REFERENCES I

- [1] DAN ARIELY AND SIMON JONES. **PREDICTABLY IRRATIONAL**. Harper Audio New York, NY, 2008.
- [2] KENT BECK. **EXTREME PROGRAMMING EXPLAINED: EMBRACE CHANGE**. addison-wesley professional, 2000.
- [3] CLAYTON M CHRISTENSEN. **THE INNOVATOR'S DILEMMA: WHEN NEW TECHNOLOGIES CAUSE GREAT FIRMS TO FAIL**. Harvard Business Review Press, 2013.
- [4] LEANDRO GONZALEZ. **HOW TO WRITE A GAME DESIGN DOCUMENT**. <https://www.gamedeveloper.com/business/how-to-write-a-game-design-document>. 2016.
- [5] TAIICHI OHNO AND NORMAN BODEK. **TOYOTA PRODUCTION SYSTEM: BEYOND LARGE-SCALE PRODUCTION**. Productivity press, 2019.
- [6] RIDO RAMADAN AND YANI WIDYANI. **"GAME DEVELOPMENT LIFE CYCLE GUIDELINES"**. In: 2013 *International Conference on Advanced Computer Science and Information Systems (ICACSIS)*. IEEE. 2013, pp. 95–100.

REFERENCES II

- [7] TYNAN SYLVESTER. **DESIGNING GAMES: A GUIDE TO ENGINEERING EXPERIENCES**. " O'Reilly Media, Inc.", 2013.
- [8] HIROTAKA TAKEUCHI AND IKUJIRO NONAKA. **"THE NEW NEW PRODUCT DEVELOPMENT GAME"**. In: *Harvard business review* 64.1 (1986), pp. 137–146.