

Game Design

3

Game Prototyping
Interface Design for Games

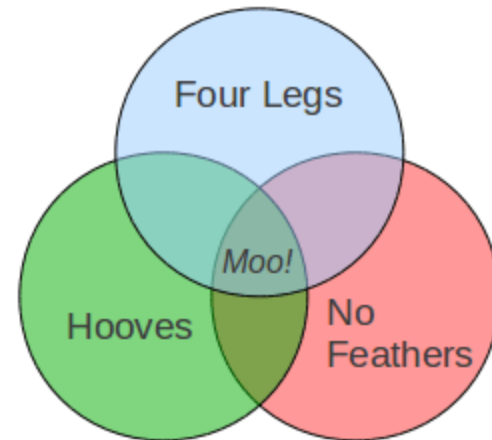
Turning Ideas into a Game

- You have a great idea for a game
 - Written as a list of features
- Are you certain of the greatness of your idea?



Turning Ideas into a Game

- You can never know whether your idea is good if it is not tested (by someone else). Therefore, you need to:
 - Prototype
 - Playtest



What's a Cow?

Focus on the Formal Elements

- The underlying mechanics and systems of your game
 - What is the conflict in my game?
 - What are the rules and procedures?
 - What actions do the players take and when?
 - Are there turns? How do they work?
 - How many players can play?

Focus on the Formal Elements

- The underlying mechanics and systems of your game
 - How long does a game take to resolve?
 - What is the working title?
 - Who is the target audience?
 - What platform will this game run on?
 - What restrictions or opportunities does that environment have?

Focus on the Formal Elements

- The more questions you ask, the better
- It's OK if some questions don't have an answer at this stage
 - They will be clear once the game begins to take shape

Focus on the Formal Elements

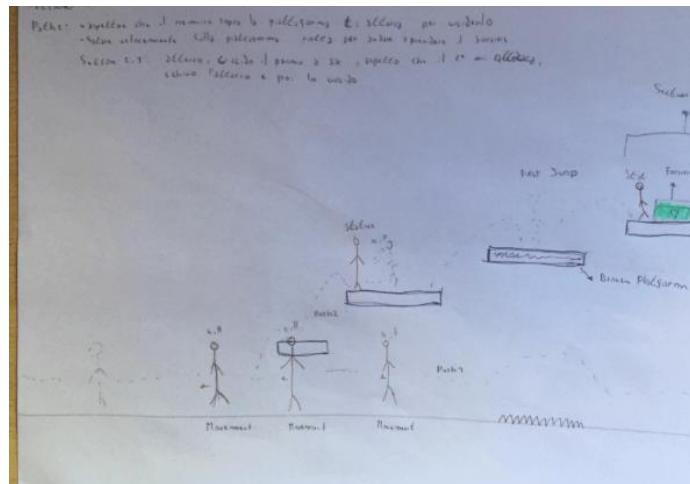
- For a prototype, consider the following
 - Define player goal
 - How does the player win?
 - Define core gameplay.
 - Describe how it works.
 - Outline rules and procedures.
 - Focus on key rules.
 - Leave all other rules until later.
 - Define player number.
 - Describe player interaction.

Prototyping

- Allow you to test core concepts
 - Playable
 - Little focus on artwork
 - Sketches
- “All you need to worry about are the fundamental mechanics, and if these mechanics can sustain the interest of playtesters, then you know that your design is solid” [2]

Prototyping

- Physical prototypes
 - Drawn on paper, made of cardboard, etc.
 - Allow designers to focus on gameplay and not technology
 - Allows non-programmers to contribute to the design



Digital Prototypes

- Physical prototypes are not enough for digital games
 - Help to test game mechanics
- Digital prototypes extend your design work into the intended format
- Rapid prototyping

Digital Prototypes

- Not finished games
 - Minimal art, sound, etc.
 - Often with incomplete gameplay
- Areas of interest
 - Mechanics
 - Aesthetics
 - Kinesthetics
 - Technology

Prototyping Game Mechanics

- Focus on core gameplay loop
- Use information from the physical prototype
- Case study: Choose your own game

Prototyping Aesthetics

- Storyboards
 - visual sequences
- Concept art
- Animatic
 - Animation mock-up
- Interface Prototype
- Audio sketch

Prototyping Kinesthetics

- The feel of the game
 - Controls
 - Responsiveness
 - Ergonomy

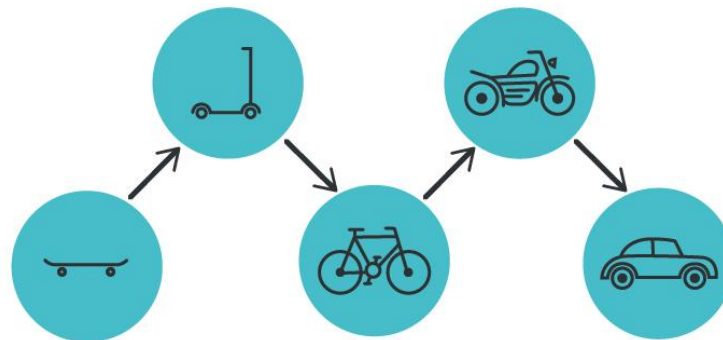
Prototyping Technology

- Models of the software needed to make the game run
 - Graphics capabilities
 - AI
 - Physics systems
- Write prototypes in another programming language

Minimum Viable Product

- Smallest prototype you can make that can still give useful data
 - If you don't have a prototype in a few weeks, you're doing it wrong

Minimum Viable Product



Minimum Viable Product

- Cut as many features from the full intended game
 - When do we stop cutting?
 - Minimum set of features that don't affect core development
 - Remove features that are not rules but are consequences of rules

Minimum Viable Product

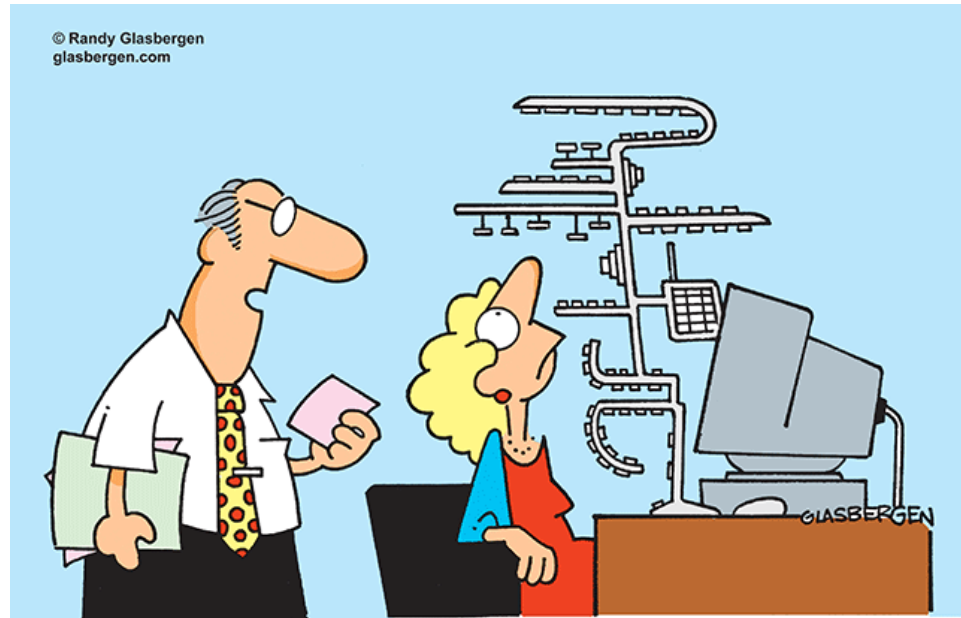
- What can we cut?
 - Enemy types
 - Levels
 - Multiple weapons
- Keep one of each for testing

Minimum Viable Product by Genre

- Racing game
- Top down shooter
- 2D platformer
- Matching game
- 2D puzzle platformer
- 3D platformer
- FPS
- JRPG
- Fighting game
- Action adventure
- Western RPG
- RTS

Interface Design for Games

- Players play games through interfaces



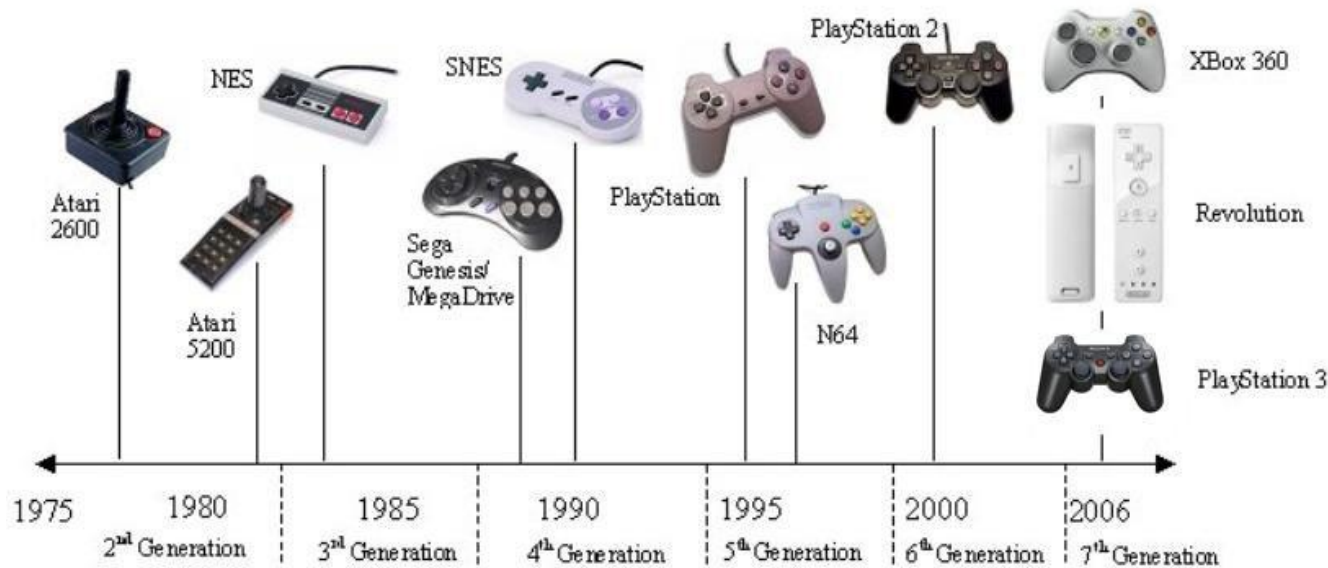
“It’s an ergonomic keyboard. Once you learn how to use it, it will increase your speed by six percent!”

What IS an Interface?

- Controller
- Keyboard and Mouse
- Display device
- AR device
- Mobile device
- Etc.

Physical Interfaces

- What does the player touch?
- How do player movements affect the game world?
- Is the physical interface fun and intuitive?



Virtual Interfaces

- What information does the player need which is not shown in the game world?
 - How often does the player need it?
 - Are menus suited to the control interface?



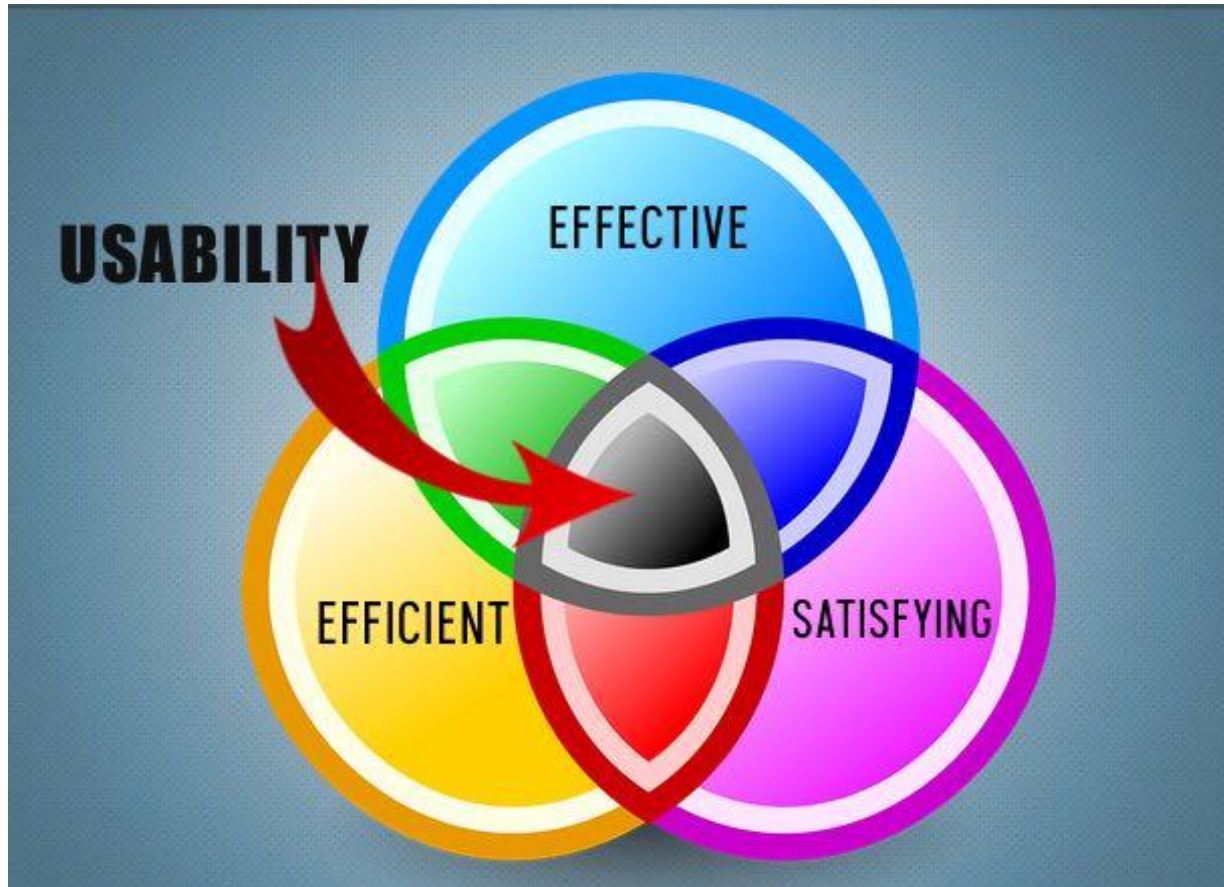
Designing Interfaces

- Good interfaces should
 - Be transparent
 - Provide feedback
 - Be engaging

Transparent Interfaces

- Useful
 - Allow the player to do what they want
- Performance
 - How much time, how many steps?
- Accuracy
 - How many mistakes did players make?
- Recall
 - How much does the player remember?
- Emotional response
 - How does the player feel while playing?

Transparent Interfaces



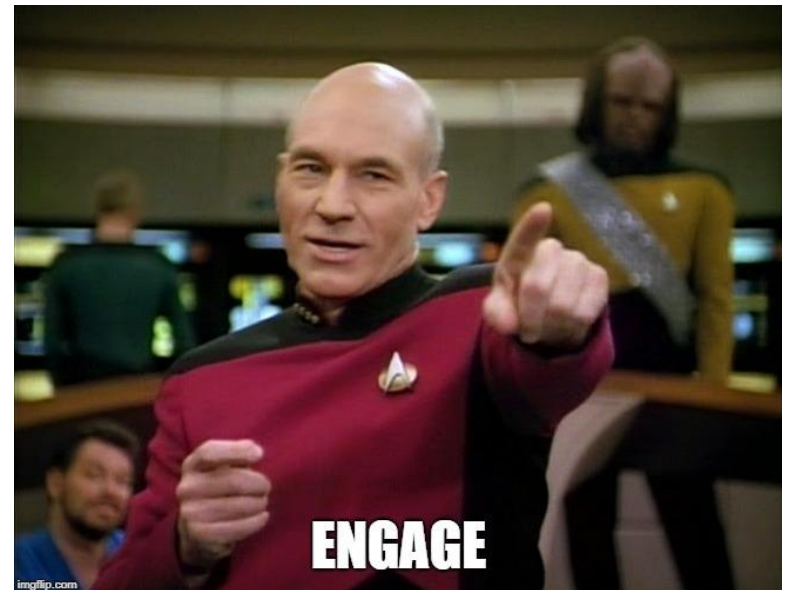
Feedback

- User actions have an observable effect on the game world
 - Difference between what the players need to know and want to know
 - Feedback should create the appropriate emotional response
 - Feedback should assist towards player goals



Engaging Interfaces

- Engaging interfaces are “juicy”
 - As opposed to “dry”
 - Provide continuous feedback
 - Reward players
- “Fun is pleasure with surprises” [3]



Interface Content

- What is the information the player needs to play?
 - Large amounts of information
 - Not all pieces of information are equally important
 - Importance of information changes with perspective

Virtual Interface Content

- List information to be displayed
- Prioritize pieces of information
- List information channels
- Map information to channels

RED DEAD REDEMPTION II

Q STORY ONLINE E



SETTINGS Z SOCIAL CLUB L+ Q STORY ← QUIT GAME ←

Case Study: Red Dead Redemption 2

- 1. List information
 - Player health
 - Player stamina
 - Player dead eye
 - Current weapon
 - Current ammo
 - Immediate surroundings
 - Distant surroundings
 - Inventory
 - Money
 - Alignment
 - Time of day
 - Total ammo
 - Interaction menu
 - Stat gains
 - Messages and conversations
 - Prompts
 - Equipped weapons



Case Study: Red Dead Redemption 2

- Prioritize information
- Always needed
 - Immediate surroundings
 - Distant surroundings

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TOGGLE SCOPE



Case Study: Red Dead Redemption 2

- Often needed (at a glance)
 - Player health
 - Player stamina
 - Player dead eye
 - Current weapon
 - Current ammo
 - Equipped weapons
 - Total ammo
 - Messages and conversations

Case Study: Red Dead Redemption 2

- Occasionally needed
 - Inventory
 - Money
 - Alignment
 - Time of day
 - Stat gains
 - Prompts

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Q RECENT E



COYOTE FANG TRINKET

Permanently increases player's Dead Eye experience bonus by 10%.

This is a unique item

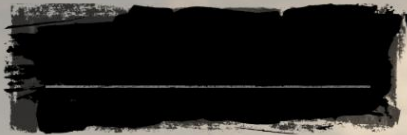


BACK ←

Case Study: Red Dead Redemption 2

- 3. Information channels
 - Bottom left of screen
 - Bottom center of screen
 - Bottom right of screen
 - Left of screen
 - Top right of screen
 - Avatar
 - Sound effects
 - Music

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Case Study: Red Dead Redemption 2

- 4. Map information to channels
 - Bottom left of screen: Distant surroundings (minimap), Player health, Player stamina, Player dead eye
 - Bottom center of screen: Alignment, Messages and conversations
 - Bottom right of screen: Interaction menu

Case Study: Red Dead Redemption 2

- 4. Map information to channels
 - Left of screen: Stat gains
 - Top left of screen: Prompts, Time of day
 - Top right of screen: Current ammo, Total ammo
 - Avatar: Current weapon, Equipped weapons

Interface Modes

- Change the functionality of input devices and the output of the interface depending on the context

Bibliography

1. Elias, G. F., Garfield, R. and Gutschera, K. R. Characteristics of Games, MIT Press, 2012
2. Fullerton, T., Game Design Workshop: A Playcentric Approach to Creating Innovative Games, CRC Press, 2014
3. Schell, J. The art of game design: a book of lenses. Morgan Kaufmann Publishers Inc., San Francisco, CA, USA. 2008.