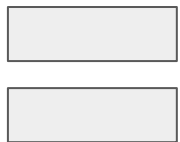
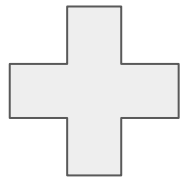


Requirements Engineering and the Creative Process in the Video Game Industry



Games

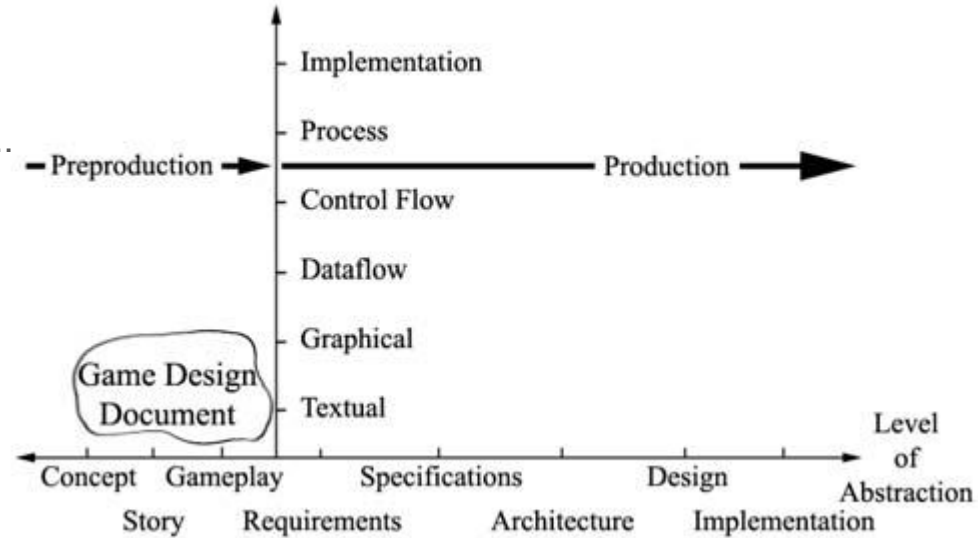
- Huge industry
- Lots of failures
- Multi-disciplinary nature

Challenges

- Unique, subjective non-functional requirements
 - *“The game should be fun to play”*, compared to *“the application should be secure”*
 - Depends on target market
- Team diversity
 - Creative vision vs technical limitations
- Requirements engineering is inherently hard
 - Traditional methods for reaching a common ground aren't as effective
- Transitioning from pre-production to production
- Identifying implicit information in pre-production documents
- Applying domain knowledge without hindering creativity

Development life-cycle

- Game design document
 - Concept, story, look & feel, characters...
 - Thorough, but informal
 - Not suited for production!
- Pre-production → production
- GDD isn't maintained because of deadlines

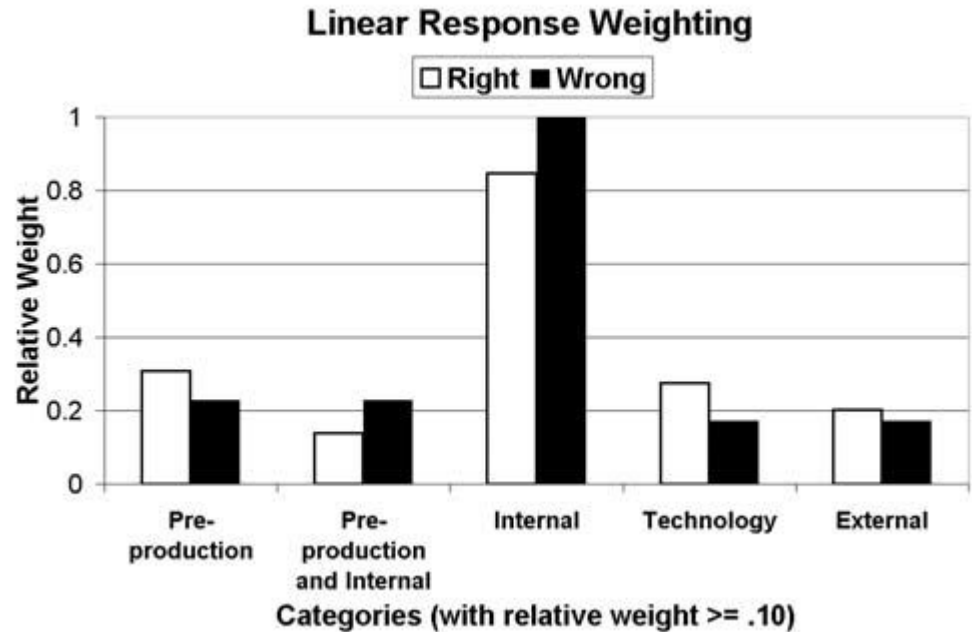


Review of Postmortem Columns

- 50 reports analyzed
- Each report has 5 “*what went wrong*” entries and 5 “*what went right*” entries
- 5-category classification scheme to identify success vs failure factors
 - Pre-production: issues outside development, such as inadequate game design or storyboarding
 - Internal: project management and personnel
 - External: issues outside the control of the team, such as changes in market and financial conditions
 - Technology: creation or adoption of new technologies
 - Schedule: estimates and overruns

Results

- “[...] many, if not most, of the entries are related to classic project management issues”
- Factors are as likely to contribute to success as to failure
 - What?
- Weak management of transition from pre-production to production



Document transformation

1	Story	After her father, Bernard, died, Crystal did not know which way to turn – paralyzed by her loss until the fateful day when his Will was read.
2	Gameplay	The Player must visit Anna the Lawyer to receive a copy of Bernard's Last Will and Testament, thereby obtaining the information necessary to progress to the next goal.
3	Requirements	The Player must be represented by an avatar. Female Non Player Character required: Anna the Lawyer Inventory Item: Last Will and Testament (LWT) Player can not progress beyond Game State XYZ until LWT added to Inventory
4	Specifications	Could easily reach 50 pages

- Creative vision → specification

Capturing implicit information

- GDD has a lot of implicit information
- Implication difficulty levels
 - First level: can be directly derived from GDD. (3) Requirements in example table
 - Second level: general domain knowledge and experience required. Regarding game world and environment. Derived from (3) Requirements
 - Third level: requires knowledge of implementation details such as target platform
- Should the production team interfere with the process of the design team?

Applying a priori knowledge

- Technology versus creative vision
- Identify implied assets
- Feedback loop

Pyramid Puzzle
 Inv Placement place 3 solutions to activate puzzle
 & Hot Spots Required
 Result: Inv Pickup: Pyramid

PU movie slots numbers - BA (contents)
 1 - closes on
 2-62 - jewel glows + clasps opens
 63-123 - white jewel glows + clasps opens
 124-184 - Green jewel glows + clasps opens
 185 - background no pyramid
 Audio:
 click sound for screens
 PU movie

And light
 Screens
 12 slot PU movies

Screen 1
 Red Solution
 Inv placement

Screen 2
 White Solution
 Inv Place

Screen 3
 Green Solution
 Inv place

Screen 4

4 Screens of 12 identical images

Puzzle Object:
 1 Red puzzle & activates first
 2 White " "
 3 Green puzzle

1 solution: 4, 7, 12, 10
 2 solution: 7, 1, 12, 5
 3 solution: 6, 13, 9, 8

Upon placement of solution puzzle 1 activates. Upon completion of puzzle 1 Inv placement of solution 2 activates. Upon completion of puzzle 2 Inv placement of solution 3 activates. Upon placement of solution 3 puzzle 3 activates.

Is requirements engineering for video games unique? Common challenges include:

- Communication between stakeholders of disparate background
- Remaining focused on the goal and resisting feature creep
- Influence of prior work
- Media and technology interaction and integration
- The importance/(nature) of nonfunctional requirements
- Gameplay requirements