

Puzzles

① Make the goal easily understood

② Make it easy to get started

③ Give a sense of progress

④ Give a sense of solvability

⑤ Increase difficulty gradually

⑥ Parallelism lets the player rest

⑦ Pyramid structure extends interests

⑧ Hints extend interests

⑨ Give the answer

⑩ Perceptual shifts are a double-edged sword 变幻莫测思考方式

Iteration

Eight filters

① Artistic impulse – Does this game feel right?

② Demographics – Will the target audience like it enough?

③ Experience Design – Is this a well designed game <scrutinized by lens>

④ Innovation – Is this game novel enough?

⑤ Business & Marketing – Will this game sell?

⑥ Engineering – Is it technically possible to build this game

⑦ Social & Community – Will the game meet s/c goals?

⑧ Playtesting – Does the playtester enjoy the game enough?

Lens #48: The Lens of Accessibility

When you present a puzzle to players (or a game of any kind), they should be able to clearly visualize what their first few steps would be. Ask yourself these questions:

- How will players know how to begin solving my puzzle, or playing my game? Do I need to explain it, or is it self-evident?
- Does my puzzle or game act like something they have seen before? If it does, how can I draw attention to that similarity. If it does not, how can I make them understand how it does behave?
- Does my puzzle or game draw people in, and make them want to touch it and manipulate it? If not, how can I change it so that it does?

Lens #49: The Lens of Visible Progress

Players need to see that they are making progress when solving a difficult problem. To make sure they are getting this feedback, ask yourself these questions:

- What does it mean to make progress in my game or puzzle?
- Is there enough progress in my game? Is there a way I can add more interim steps of progressive success?
- What progress is visible, and what progress is hidden? Can I find a way to reveal what is hidden?

Lens #50: The Lens of Parallelism

Parallelism in your puzzle brings parallel benefits to the player's experience. To use this lens, ask yourself these questions:

- Are there bottlenecks in my design where players are unable to proceed if they cannot solve a particular challenge? If so, can I add parallel challenges for a player to work on when this challenge stumps them?
- If parallel challenges are too similar, the parallelism offers little benefit. Are my parallel challenges different enough from each other to give players the benefit of variety?
- Can my parallel challenges be connected somehow? Is there a way that making progress on one can make it easier to solve the others?

Lens #51: The Lens of the Pyramid

Pyramids fascinate us because they have a singular highest point. To give your puzzle the allure of the ancient pyramids, ask yourself these questions:

- Is there a way all the pieces of my puzzle can feed into a singular challenge at the end?
- Big pyramids are often made of little pyramids — can I have a hierarchy of ever more challenging puzzle elements, gradually leading to a final challenge?
- Is the challenge at the top of my pyramid interesting, compelling, and clear? Does it make people want to work in order to get to it?

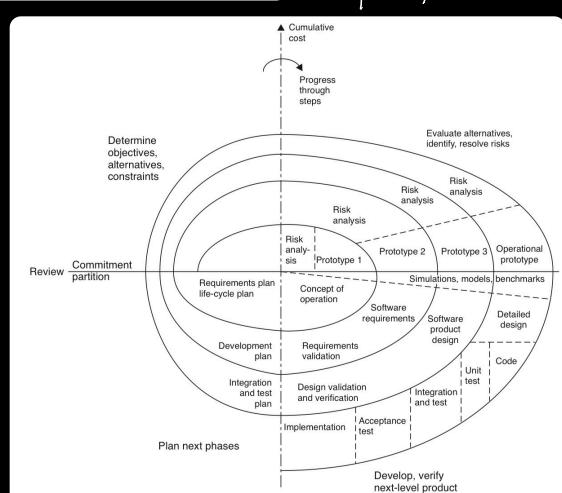
指出风险

评估并改进风险

Lens #13: The Lens of the Eight Filters

To use this lens, you must consider the many constraints your design must satisfy. You can only call your design finished when it can pass through all eight filters without requiring a change.

1. Come up with a basic design.
2. Figure out the greatest risks in your design.
3. Build prototypes that mitigate those risks.
4. Test the prototypes.
5. Come up with a more detailed design based on what you have learned.
6. Return to step 2.



The spiral model of software development

Barry

Boehm

Lens #14: The Lens of Risk Mitigation

To use this lens, stop thinking positively, and start seriously considering the things that could go horribly wrong with your game.

Ask yourself these questions:

- What could keep this game from being great?
- How can we stop that from happening?

Risk management is hard. It means you have to face up to the problems you would most like to avoid, and solve them immediately. But if you discipline yourself to do it, you'll loop more times, and more usefully, and get a better game as a result. It is tempting to ignore potential problems and just work on the parts of your game you feel most confident about. You must resist this temptation and focus on the parts of your game that are in danger.

Rapid Productive Prototyping eight tips

① Answer a question 不要过度构建原型

多问问题

- 我们的技术能支撑多少个角色在一个场景中运动？
- 我们的核心游戏性有趣吗？它能保持长时间的乐趣吗？
- 角色和设置在美学上是否统一？
- 这个游戏的一关卡需要多大？

② Forget quality Rapid prototyping 快速而简陋 using unity

③ Don't get attached 学会放弃自己的孩子

④ Prioritize your prototype 优先直面大/根本的问题

⑤ 高效并行原型 码美编合刷测试

⑥ Doesn't have to be digital 纸模型

⑦ "Fast loop" Game engine

Python	快	速	返	代	之	卷	层
C++	不	需	强	复	之	底	层

⑧ Build the toy first

Toy 是否具有直观吸引力

Lens #15: The Lens of the Toy

To use this lens, stop thinking about whether your game is fun to play, and start thinking about whether it is fun to play *with*.

Ask yourself these questions:

- If my game had no goal, would it be fun at all? If not, how can I change that?
- When people see my game, do they want to start interacting with it, even before they know what to do? If not, how can I change that?

There are two ways to use the Lens of the Toy. One way is to use it on an existing game, to figure out how to add more toy-like qualities to it — that is, how to make it more approachable, and more fun to manipulate. But the second way, the braver way, is to use it to invent and create new toys before you even have any idea what games will be played with them. This is risky if you are on a schedule — but if you are not, it can be a great “divining rod” to help you find wonderful games you might not have discovered otherwise.

Decision-making

- | | | |
|---------------|--------|---|
| choice | before | - context of the choices . what game stated? |
| communication | - | how players know what the options are & probabilities |
| action | - | what mechanisms players need to make decision |
| consequences | - | how will choice affect game state & future choice |
| feedback | - | how is the result conveyed to players? |

△ BAD DECISIONS

- Blind decisions - informed decision
- Obvious decisions - don't distract players , do it for them
- Meaningless / Misleading - walking dead 没有真假抉择
- Handcuffing - freeze players

A GOOD DECISIONS

- trade-off - options should have both benefits & drawbacks
- risk-reward - options with high risk & high reward

Determine Goals 短中长期目标

- ① Theorize - first impression concrete
- ② Hypothesize - thinking about try something achievable rewarding
- ③ Experiment - DO IT
- ④ Evaluate - Summarize cause-n-effect
- ⑤ Understand

- ↳ Player must be able to figure out their own goals.
- ↳ Player must be able to understand what they need to do in order to achieve goal

Rules

- ① Rules limit players action - set-up choices & conflicts operational
明文
- ② Rules are shared by all players
- ③ Rules are fixed / binding
 - game perspective
not altered
 - player-perspective
How game works
constitutive
系统内置
- ④ Rules are repeatable
Implicit
字规定

Mechanics - Elements

SPACE

discrete or continuous
some number of dimensions
bound areas that might be connected

functional space

structure

boundaries

progression

hierarchy subspaces ?

Affordance < Perceived > What could player do ?

Lens #21: The Lens of Functional Space

To use this lens, think about the space in which your game really takes place when all surface elements are stripped away.

Ask yourself these questions:

- Is the space of this game discrete or continuous?
- How many dimensions does it have?
- What are the boundaries of the space?
- Are there sub-spaces? How are they connected?
- Is there more than one useful way to abstractly model the space of this game?