CUTTING-EDGE GAME CREATION

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Annotation. The main features of cutting-edge game creation and several examples of such games are given in this thesis. The terms of idea and imagination and the role of them in game development, as well as the main game development tools are explained.

Keywords. Game, idea, imagination, graphics, game engine, soundtrack, mechanics.

This thesis demonstrates how a combination of unique value characteristics can be used to create games which stand out from the mass. The most important aspect in creating of a cutting-edge game is an idea. In the dictionary term "idea" is referred to as the ability or gift of forming such conscious ideas or mental images, especially for the purposes of artistic or intellectual creation. The initial idea for a game in an individual's mind is often brought to the organization as a collection of thoughts untouched, not yet contested via idea sharing practices. The resulting evolving idea moves through organizational knowledge boundaries to which individuals contribute by adding value [1]. The market of computer games is really huge now and the competition is only increasing. That's why you need good imagination to create an exclusive idea.

So, what is your imagination? Imagination is the ability of a person to spontaneously create or deliberately construct images, representations, ideas of objects, which in the life experience of the imagining in a holistic form were not previously perceived or cannot be perceived at all through the senses. Imagination is the main weapon for every game designer, because he creates game mechanics and concepts. We can see the main steps of game creation in Figure 1.
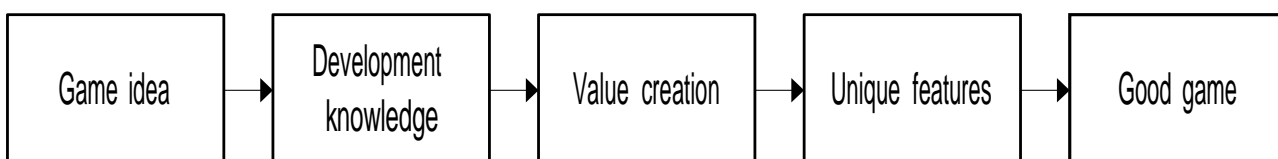

Figure 1 – typical game creation scheme.

It is very important to look under every stone. Broadening your horizons, simply looking beyond films, TV, creative mediums for ideas, looking in newspapers, books, your own life, your own experiences and use of some of these things will help generate better ideas. One popular tip among game designers called "Follow your nose" means the enriching your knowledge about the sphere you are interested in. If you play a game and really like it, try to find information about this game, find out the history of the game. Every successful game developer is the best Killer of the Past. If you don't go and get new influences on top of the ones that really formed some of your ideas, then your ideas will become stale over time. And the last but not the least way to develop imagination is playing random games.

Creation of a cutting-edge game is considered to be quite difficult. Let's take a closer look at this statement. The developer of Undertale, Toby Fox, is known for his courage to change the established canon of genre. While in many other games you have to kill all the bosses, in Undertale you have to follow different rules. You can choose whether to fight the enemy or not. And if you defeat him, you decide whether to kill him or spare [3].

Almost all game designers know that graphics are far from the most important things in games. Do you know anything about Alexey Pajitnov? But he knows a lot about us. He is the developer of Tetris, which was created in 1984. He said that people would play this game for the next 40 years and he was absolutely right.

Jonathan Blow is famous for his game called Braid. It seems that the game is simple and not interesting, just something like Super Mario. Nevertheless, Jonathan added time manipulation to the game, and it made the game more interesting and brought glory to the creator.

The next fact sounds strange, but it is true. Thinking about money is the best way to kill your game. Interestingly, direct contributions made by consumers play only a minor role during the processing of game ideas. And, of course, the developer of Minecraft, Markus Persson, knows a lot about money. He sold his game to Microsoft for $2.5 billion. But now he suffers from depression, as he has lost all motivation to work further and cannot communicate normally with people due to the resulting social gap.

A soundtrack is fairly a minor part of the game, but it has a huge impact on the consumer's perception of the game. Just listen to the soundtracks from the World Of Warcraft. This is exactly the case when the melody can convey the atmosphere better than the game itself. Moreover, in games like OSU and Beat Saber, music comes to the fore as it is a fundamental mechanic of the game.

Everyone has ever heard about AAA-projects such as The Witcher 3, Red Dead Redemption 2, The Elder Scrolls, Grand Theft Auto, Metal Gear Solid and so on. And almost everyone knows that only a daredevil will start his journey in game development with AAA-project. This is quite risky and people abandon this idea in 99% of cases.

There is a bunch of different game engines, and some of them are free of charge. Unity and Unreal Engine are the most popular. There are also some very popular engines. Frostbite was created by Dice and used in many parts of Battlefield. The major advantage of this engine is supporting destruction function. It was mistakenly taken by Byware company to create the RPG-game Dragon Age 3. CryEngine was created by Crytek and used in such a popular game as Crysis. The engine called RAGE is really unique. This engine was created by Rockstar Games and designed for Grand Theft Auto. One more game engine, called Decima, has an interesting story. It was created by Guerilla Games. This engine helped developers of Until Dawn, Horizon Zero Dawn. Although there is a "dawn" in both games, they are not similar at all and created by different companies. Such a wonderful game developer as Hideo Kojima borrowed and enhanced this engine for his game Death Stranding. Engine subsystems include rendering, animation, physics and sound engines, Artificial Intelligence and so on. Every game engine has own features and abilities. That's why choosing the right engine plays a significant role in the future project [2].

There are several types of graphics: 3D, 2D, Flat, Pixel, Voxel, Vector and so on. Nowadays many gamers want to see their game characters more realistic, so many companies spend millions of dollars and thousands of man-hours to meet the players' needs. But there are also retro lovers among players who will appreciate your pixel game.

It's also important to choose an appropriate platform for the game. Every developer decides where to release the game: on PC, console or mobile phone.

Many developers also try to define or predict the age of their target audience to make game more popular with it. To solve this problem, you need to address the needs of users. For the past 20 years, one tool has been used effectively in the software development industry. Its name is PERSONS. Software design pioneer and programmer Alan Cooper has always strived for an easy-to-use product. He was shaking with the mere thought that users would consider his software too complicated and confusing. As a result, after endless interviews and tons of collected information, he divided users into groups with similar meanings, called PERSONS. Creation of PERSONS is a very laborious process. Don't try to deceive yourself – collect data from real people, rather than inventing it yourself.

The example of creating a PERSON:
Demographic data:
Place of residence
Gender
Education
Revenue
Family size
Consumer's needs
Interests:
Activities and leisure time
Hobbies
Doing sports
Behavior:
How and when are they willing to spend money?
What is the relation to my project?
Attitude towards discounts
Consumer's expectations from the project:
Do they need a tutorial?
Do they need additional services?
Do they need to communicate with other players?

For more than 20 years the creation of PERSONS has been an effective working tool in software development, because they help not only make the right design decisions and understand the whole team for whom they create a game, but also significantly reduce the marketing budget.

Perhaps one more way to make your game better is to think over the character's image, style and design as much as possible. The game called Resident Evil: Village, that has not been released yet, but has already driven the whole world crazy with just one character's image, can be an object lesson.

In this thesis we considered the idea and imagination as the main elements of the cutting-edge game creation. The information obtained as a result of the research provides a comprehensive representation of the game creation features and allows us to create an outstanding game. Some popular game engines and ways of predicting the age of the target audience have also been mentioned in the text.

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