

# A Study on User-Centered Design for Cut-scene in Action-Adventure Games

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액션어드벤처게임 컷신을 위한 UCD 디자인 연구

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## ABSTRACT

Recently, the games on the market are getting rich and excellent in the category of design and productions. The style and production quality of cut-scenes also have achieved a continuous development, so how to stand out from multiple designs and gain popularity always acts as a challenge to designers. However, such design strategy up to developers will be failed to judge whether or not design achievements are loved by players and thus cannot meet rapidly changing market demands on both in a quantity and quality. Therefore, this study holds that cut-scene design for video games must set out from user-centered design(UCD). According to literatures with respect to product market, we know that Market Pull imposes far more impacts on success in bringing new products to the market than the technology Push, hence players actually determines the success of a game in competitive game market. This study will help to enhance the immersion of playing game, including the interest and standing out the designer's message without distorting the original impression in the game publishing environment.

**Keywords** : Action-adventure game(액션어드벤처게임), cut-scene(컷신), Use-centered design(사용자중심디자인), Immersion(몰입)

## 요약

최근 게임시장은 게임제작과정과 게임디자인 분야의 많은 발전에 의하여 게임 상 컷신(cut-scene)의 디자인 스타일과 완성도 또한 지속적인 발전을 이루고 있다. 따라서 항상 게임 디자이너들은 여러 디자인 방향성에서 보다 쉬운 인지와 인기 있는 디자인을 얻으려는 노력을 한다. 그러나 개발자에 의존한 디자인 전략은 최종 디자인결과물이 게임플레이어에게 사랑 받고 있는지 성과여부를 판단 할 수 없게 되며 모든 면에서 빠르게 변화하는 게임시장의 요구를 충족 할 수 없다. 또한 디자인 최종 완성도와 같은 어려운 절차들은 게임 컷신 장면의 제작 및 이용을 어렵게 한다. 따라서 본 연구는 사용자 중심 디자인(UCD) 바탕의 비디오 게임 속 컷신 디자인방법을 제시하여 제작환경에서 원작의 느낌을 훼손하지 않으면서 디자이너가 전하고자 하는 메시지를 더욱 부각시키고 흥미를 이끌어 몰입감을 높이는데 도움이 될 것이다.

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## 1. Study Background

Recently, game developers increasingly use pre-rendered or real-time rendered animations and live action footage in games as a tool to tell stories and convey information with respect to games to game players. Such cut-scenes not under control of players, which appear at the beginning and end of and during games, are described by Skarin as follows:

“A sequence in a video game, be that animation or live action footage, that restricts or limits character control while background information is conveyed to the player in order to advance the plot.”

Through previous video games were provided with various narrative methods, for example, Ryan mentioned some common narrative methods in games such as plain text narrative[Fig. 1], Comic book stills[Fig. 2], 90’s-Style RPG Dialogues[Fig. 3], Aughts-Style RPG Dialogues[Fig. 4], Graphic Adventure Style[Fig. 5] and Full-on Animated cut-scenes[Fig. 6], these narrative methods were limited and not highly accurate due to limitations in technical capacity of computer software and hardware[1,8]. Following rapid development of software and hardware technologies and increasing enhancement in arithmetic capability, there are more and more content that can be accommodated and processed in video games, which is also increasingly complex and fine. Design of video games gradually gets rid of limitation to technology and the creation can be more smooth, multi variable, creative and exquisite subject to needs of game players. Meanwhile, after narrative methods break away from

limitation to technology, an increasing number of story-driven games that take cut scene as a main narrative method have been developed, which have become necessary to express some key plots and important scenarios in games[1].



[Fig. 1] Narrative methods with plain text from braid



[Fig. 2] Comic book stills



[Fig. 3] Narrative methods with 90’s-Style RPG dialogues



[Fig. 4] Aughts-Style RPG dialogues



[Fig. 5] Narrative methods with graphic adventure style



[Fig. 6] Graphic adventure style

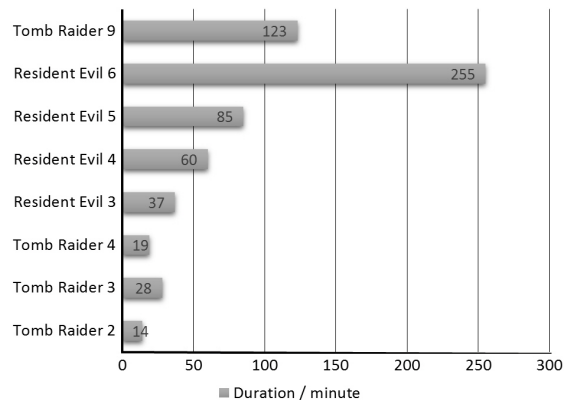
### 1.1 Impacts of focus on cut-scene on gaming experience

Despite of cut-scenes loved by game players, some cut-scenes are really annoying because they, though a good narrative tool, interrupt control of roles by game players

while telling stories and ruin players' immersion into games to some extent by taking players out of gaming experience and making them spectators. Immersion of players into games will not be impaired if the ruin does not reach certain extent. Good cut-scene designs will strengthen connection between players and game world. But many cut-scenes do not simply furnish a story element but appear to actually undermine engagement with the game world. It is because design of cut-scenes, as a part of design of video games, comes across a number of problems in its early stage, among which information inconsistency disables developers to work out something satisfying game players. And we have to know that Alex has mentioned in his article that cut-scenes were in no way invented by video-game developers, they were invented by cut-scene developers. Thus, an increasing number of cut-scenes today designed to serve merely games themselves in fitting game plots and picture frames mostly depend on views and capability of the designer, which means players are nothing but passive receivers. This study has summarized cut-scenes whose total length is shown in [Fig. 7] of 8 games in 2 series, which compares the length of cut-scenes in Tomb Raider series<sup>1)</sup> and Resident Evil series<sup>2)</sup>, respectively, during the past 17 years. Data shows Tomb Raider 2 released in 1992 only contains cut-scene lasting 14 minutes; however, Tomb Raider 9 released in 2013 contains cut-scenes lasting 123 minutes, almost 2 hours. Similarly, the cut-scene in Resident Evil 3 released in 1999 lasts 37 minutes; however, Resident Evil 6 released in

2012 lasts 255 minutes, more than 4 hours. All these show that cut-scene is really becoming more and more important in games, particularly, those story-driven games. Whereas, as we mentioned above, in recent years, more and more games utilize cut-scene to break up the action, tear players away from the game world in order to push the story forward. That's a mistake; maybe opinions from Don Reisinger may partly inspire game designers:

“Part of my love for video games resides in my desire to be immersed in the world I'm interacting with. Unlike a movie where I'm nothing more than a spectator looking at a screen, video games provide me with the opportunity to be the hero (or villain) and become the star of an on-screen performance. In essence, I value immersion more than anything else.” “I don't want a movie. I want a video game[2].”

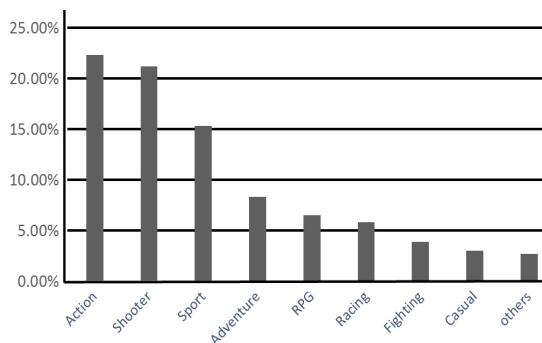


[Fig. 7] cut-scene length in ten popular action-adventure games

- 1) An action adventure game released in 1996, The first six games in the series were developed by Core Design, while Crystal Dynamics developed the latest five
- 2) Resident Evil, is a media franchise created by Shinji Mikami and owned by the video game company Capcom. The franchise focuses around a series of survival horror video games, first released in 1996.

## 1.2 Study range and object

Modern games are rich in category, such as Action game, Role-Playing Game, First-person shooting game, Adventure game, Simulation and Sports, and these genres are used to categorize video games based on their game play interaction rather than visual or narrative difference. However, each type is not totally independent existence, there are other types of game play existing. And the Action-Adventure game is a game with a mix of elements from an action game and an adventure game, it requires many of the same physical skills as action games, but also offers a storyline, numerous characters, an inventory system, dialogue, and other features of adventure games[3]. Also, as is shown in [Fig. 8], Action and Adventure game's total sales are 22.30% and 8.30%, accounted for over 30% of best-selling video game in 2012, such as Hitman<sup>3)</sup> and Tomb raider series, Metro: Last light, Dead Island<sup>4)</sup> and so on, which are very popular action-adventure games in the world. The biggest difference among this kind of game and other types such like sports game or music game is that it is attracted by players mainly based on story, then assisted with game play. Thus, from games of this scope, this study picked 5 games to extract and summary their cut-scenes for the purpose of expectation in this study to be more targeted and representative.



[Fig. 8] Genre breakdown of video game sales in 2012[4]

This study targets at players active in each large-scale game forum, puts forward player-centered design concept against cut-scene design of video games and finds out factors of players' preference to cut-scene of video games, which kind of players is keen to cut-scene and which hates cut-scene via questionnaire survey, upon which who have stricter design requirements on cut-scenes can be analyzed and summarized and then user guide principles for cut-scene design of video games can be summed up to help developers carry out more effective cut-scene design setting out from demands of players.

## 2. Architecture of the study

The final goal of this research is divided

- 3) Hitman is a stealth video game series developed by the Danish company IO Interactive. The series revolves around Agent 47 (usually simply referred to as "47" or "Mr. 47"), a cloned assassin-for-hire, whose flawless record places him in high demand among the wealthy and elite.
- 4) Dead Island is an action role-playing survival horror video game developed by Techland and published by German studio Deep Silver for Microsoft Windows, PlayStation 3 and Xbox 360. It is centered on the challenge of surviving a zombie-infested open world island with a major emphasis on melee combat.

into 3 study chapters. The first chapter describes background, motivation and purpose of this study and in the meantime, determines scope of study and discusses previous researches on immersion in games, narrative methods in games and relative research findings of user-centered design through collection and study of literatures, which serves as theoretical support for investigations in Chapter II which discusses factors of players' preference on cut-scenes of video games. Chapter III makes detailed analysis and discussion toward findings and puts forward user guide principles for cut-scene design of video games and gives a conclusion, summarizes deficiencies in this study and puts forward relative studies to be carried out in the future. This study would be the first chapter.

## 2.1 Study procedures

The paper centers UCD theoretical concept and makes relative researches on cut-scene design of video games. Upon discussion of literatures with respect to UCD, this paper will discuss factors influence players' preference on cut-scenes of video games internally and externally. Firstly, discussion will be performed on internal factors, i.e., personality traits of players; then, discussion will be performed on external factors, i.e., immersion experience provided by games for players, which contains the following two parts:

1) Use of cut-scenes in games. This part will acquire relative descriptions about cut-scenes to be studied from summary of literatures and extraction of all cut-scenes from recently 10 popular action-adventure games.

2) Influence of actions of players on preference on cut-scenes. This part will make investigation and classification from two aspects, immersive tendency and motivation of players[5].

Evaluation on recent cut-scenes by players will be eventually obtained according to personality traits of players and study on link between players' behaviors and their preference on cut-scenes.

## 2.2 Literature research

### 2.2.1 Narrative structure in action-adventure game

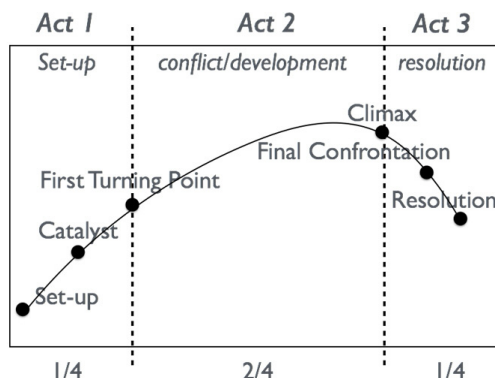
Stories have been in people's daily life in various ways since ancient times while narrative, as a means of understanding and organizing information, consists of three elements such as time, space and participation. Space with narrative potential enables people to feel as if they are exposed in a virtual context through narrative activities, experiencing while creating stories and producing memories. Hence, stories told both orally in early times and by application of new media like virtual reality on computer today can provide with immersion and experience to different extents.

### 2.2.2 Three-act structure

According to the Canadian media scholar McLuhan, new media, in its early days, will imitate its predecessor at first. For example, movies learnt from pictures taking, photographing, disc records and recording, and eventually integration of sounds and pictures.

Similarly, video games also have to take a lesson from films and animated movies and then inherit capability to visual narration. Viewing cut-scene in video games technologically, we will find that these images can be favorably compared with movies in terms of narrative function, despite of an artistic gap toward movies.

In early 1990s, 3D computer animation technology developed into one featured as complex and changing. In 1995, PIXAR Animation Studios spent 9 years on development of a new technology and created a digital 3D animation film *Toy Story*<sup>5)</sup> completely produced by computer, unlocking the door for 3D animations to officially enter into commercial entertainment industry. It is development of these technologies that benefits the game industry. The main narrative method used in American commercial films is Three-Act Structure, a theory summarized by Syd Field[9], who holds that three-act structure is the prototype of a story and a conceptual architecture[Fig. 9]: setup, elaboration of a story, in which context is built and story background and main dramatic personae are explained; confrontation, in which turning point, conflicts or crisis or difficulties occur; resolution, in which crisis and problems are eliminated. Three-act structure in films is similar to textual structure in writings, which is mostly linear narrative and similar to narrative method of traditional media; as a result, can video games imitate this set of narrative method as well.



[Fig. 9] Three-act structure (arranged in this study)

### 3. The function of cut-scene

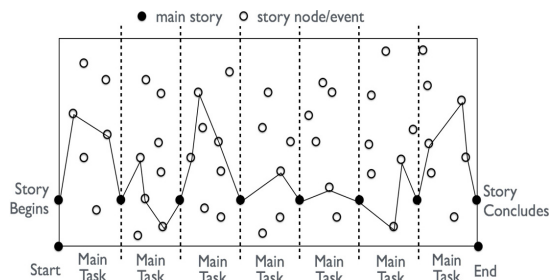
After the understanding of narrative method in the game, we focus on the functions of cut-scene in action-adventure game in this research, resulting in popularity among developers. As shown in Fig.10, Non-linear traditional storytelling is usually applied in Action-Adventure Game. Unpredictable incidents or challenges will happen for players during the game. Also due to the fact that it pays more attention to the story rather than the playing skills, the granularity of narration is small and players will encounter cut-scene frequently.

At the beginning, the application of cut-scene is not only for narration but also for enhancement of emersion for players with applications of unified game interface, vivid figure action & emotion, magnificent special effect processing and rich utilization of lenses. These are all factors that attract players to

5) *Toy Story* is a 1995 American computer-animated buddy-comedy adventure film produced by Pixar Animation Studios.

immerse themselves into virtual world. Players prefer to watch these cut-scenes for declaration of main plots.

The reason why games are more attractive than other entertainment media is that games have interaction factors.



[Fig. 10] Non-linear traditional storytelling (arranged in this study)

In regard of telling a story with cut-scene, there is another example: *Brothers: A Tale of Two Sons*. There is no dialogue in the cut-scene of this game. Affections are conveyed via body language and atmosphere rendering among players. It is very effective because it is demonstrating rather than telling the story to players. In this way, players can understand interlink within the game and create his/her story. One of the key elements demonstrated here in cut-scene is empathy. Emotional Empathy is so strong that it can bring players into the scene effectively. It the story of the leading role in the game saddens players, and then players can create a cut-scene in which roles look sad. This is another advantage of game compared to movies and books. Since feelings generated by Empathy are much stronger than those generated by seeing someone else. These are all immersion functions brought by cut-scene.

Newman summarized standard usage of cut-scene in his article:

- A) The overarching and immediate game and level objectives.
- B) The mechanics of the game and rules of play.
- C) The interface and function of buttons on the controller and objects within the game world.
- D) The mechanism for saving progress through the game.

### 3.1 Summary

In this part, we clearly see the differences in narratively of game as the new media and movies & novels by understanding of definition of narratively and commonly applied narrative method Three-Act Structure in previous animation with cut-scene and discussion of narratively in games. Therefore, cut-scene shall not be understood by production mode of animation movie nor animation shot films. As a cut-scene with special narrative features, it can be a bridge between adjustment of rhythm in the game and affections between players. This multi-story telling mode cannot be realized by movies or books. Hence, game developers shall design interactive stories for games rather than a copy version of Hollywood animation movie.

## 4. User-centered design

For user-oriented designing method, designer will considerate not only to involve the users into designing process but also to considerate user's requirements as well as to find out



ideas that comply with user's demand. Therefore, the user-oriented designing method and model in users' mind matter on how to provide most help for users so as to start with user's demands and feelings. Design products with user as the center rather than make users get themselves adapt to the products. In respects of operation process, consultancy structure of the product or man-machine interaction model, user's operation habits, expected interaction model and visual feelings shall be taken into consideration.

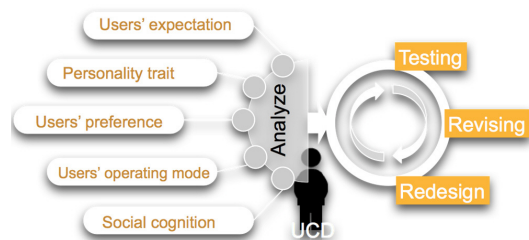
Designing principles related to usability proposed by Norman[6].

- A) Visibility : the place for correct operation shall be obvious for players and correct operation information shall be provided.
- B) Mapping : the relation between controlling project and sequential consequences.
- C) Feedback : make player aware of what they have done just now and what they get from the operations.
- D) Constraints : make players clearly aware of the limitation of operation via features of the product or the system.
- E) Consistency : same operation or display mode shall be applied for the same function or property in the same product of products of the same series so as to avoid mixing up by players.
- C) Affordance : reminding of operation pattern with product features.

#### 4.1 Use-centered design for cut-scene in action-adventure game

The early design approach with user as center is mostly applied to the design of User

Interface. With widening of application range for information system, UCD has transferred its need focus to design of human-Machine Interaction. In recent years, the design thinking of user center has extended to Human-computer Interaction and even the emotional expression topic [Fig. 11] of Human-human Interaction in a virtual environment.



[Fig. 11] UCD be applied to Interactive Systematic

The game area has provided broad space for research of domain like technology, communication, perceptual-motor skills, social behaviors, virtual environments etc. However, Pagulayan also mentioned "UCD methods have yet to find their way into the video games industry, at least to the same extent as it has in other fields[7]." Not because that nature difference between video games and other computer applications, they have a lot of similarities and the domain of computer has benefited a lot from the current UCD methods. Accordingly, special need meeting of game player making use of UCD shall be mastered during design of video games.

Design of cut-scene in video games is one link of emotional expression topic in Human-Computer Interaction. cut-scene design of UCD principle shall be started from



preference and feeling of game player. Therefore, the study is to explore the preference factor of game player for cut-scene in Action-adventure game from two aspects :

A) The influence of game player's personality traits on cut-scene preference. The previous study indicates that personality trait is the important factor affecting the human preference. For example, the personal traits can affect the preference on product appearance design; personality trait also affects the preference of product brand ; preference of making friends and occupational preference are also included. Therefore, personality of game player may also affect his preference for cut-scene of the game.

B) Impact of cut-scene as part of video games on game player. We have discussed the function of cut-scene above and positive impact on game player. However, the shortcoming of cut-scene appears gradually. For example, due to that the cut-scene cannot be operated by game player, which to some degree disrupts the immersion of game player. Immersion in game is one important research topic and guidance of the study.

## 5. Conclusion and Further

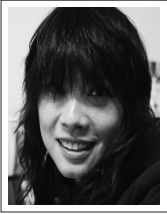
Therefore, with respect to the cut-scene design of video games for UCD, the study holds the opinion that meeting the preference and feeling of user (game player) shall be the core. Assisting the designer, researcher and developer in all aspects and thinking about the

cut-scene design of video games required by user are involved with personality trait and immersion in the game of game player. The study holds the opinion that difference of personality trait of game player will make different impact on preference for cut-scene in acting-adventure game and the first research hypothesis is proposed hereby :

Different personality trait will make different impact on preference for cut-scene in acting-adventure game.

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