JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Influence Of UI/UX In Gaming

Harshad Umesh Ilpate
Application No.90408, Seat Number 600013
Bhavna trust college, Chembur, Maharashtra-400088
IDOL Mumbai University

Abstract

The evolution of the gaming industry over the past decade due to leaps in technology has been nothing short of ingenious. Gaming in general has not only become the norm, and but also one of the biggest cultural and entertainment media. Thus, the gaming as a whole juggernaut industry demands greater standards which have led to more complexities, user-friendly and enhanced products. Hence UI/UX's recent influence on the gaming industry has been considered impact full and revolutionary. This study will cover the understanding regarding the influence of UI/UX and GX and their pivotal roles in creating player-centric experiences through collaboration which contributed towards high quality and desired user-friendly products. Understanding the different development procedures, practices, and skills required which yields benefits from UI/UX and GX in the game development cycle. The understanding and observation regarding users' actions with corresponding environment settings led to corresponding queries and evolution in aesthetic elements. Along with the challenges and adversative that are met throughout the project cycle and identifying and implementing optimal solutions for highly refined and enhanced products that meet the standards.

The future of gaming since the implementation of UI/UX and GX systems has resulted in flourishing towards meeting the standard for immersive, interactive, and intuitive experiences which are highly in demand by consumers. Results of UI/UX and GX as led to the utilization of some of the most sophisticated and exciting trends booming in the industries such as AI-integrated solutions, augmented reality, enhanced motion and animation settings, voice and conversational UI innovations, legacy gaming, and multi-platform performance.

Keywords: UI, UX, GX, User Experience, User Interface, Gaming Experience

1. Introduction:

Over the last few decades, the evolution and impact of Video Games around the world and becoming a global phenomenon has been instrumental as influence over cultural as well as entertainment media cannot be understated. As gaming industry once represented by a respectable tech community consisting of developers and their target audience mainly children and teenagers, has now turned into a multi billion-dollar industry, which has provided platform as multimedia online network platforms for audiences ranging from children to adults to display their knowledge, playing skills in various genres such as Mobile Gaming, Console Gaming, PC Gaming, Streaming, E sports Gaming, Movie Adaptations, Pop culture and many more. Due to the mainstream exposure, resulting in the biggest and most competitive growing industry, higher standards, expectations, and experience are seen as challenges given by the audience. Industry titans such as Sony, Microsoft, Nintendo, Square E nix, and Sega are in a gaming arms race to utilize new innovative technologies constantly upgrading themselves and the hardware and software engine system, which has allowed to expand of the scope for creativity and product architecture to never seen uncharted levels. Resulting in closing the gap between the real world and the digital world and their limits can be solved leading to creating new user-friendly, appealing, engaging, and high-quality experiences. User Interface (UI), User Experience (UX), and Game Experience (GX) are considered the latest trends that now can assist in enhancing the development cycle but also provide optimal solutions to given challenges throughout the development which ultimately leads toward high-quality gaming experience. Once GUI implementation has now evolved into a more simple and effective methodology known as UI/UX. While GX is a whole new element that has stemmed from UI/UX and is now counted as an adapted version or approach towards UX based on Gaming development requirements. UI/UX has the power to transform mundane activities into interactive, innovative, and immersive experiences. The game designed on the bases of UI/UX has a major influence on players' engagement and perspective towards the game. A greater UI/UX and GX design can enhance the player's gaming experience but also a poorly designed UI/UX and GX can affect and result in players' frustration and thus lead to disengagement towards the game. Utilizing UI/UX and GX has led to a more innovative, creative, and exciting approach toward research, designing, and development procedures and cycles which has helped the designers and developers to tackle the various challenges and produce new solutions to develop projects which can merge various new or old existing trends. Modules and components for the system and architecture which is at the center of the entire operation known as an Engine can be optimally utilized. Advantages and disadvantages need to be studied regarding the utilization of UI/UX and GX.

Here is a classic example of the evolution of UI/UX in the gaming industry. Here we look at Mario 2D platformers games from different eras.

Above is the classic Super Mario Bros which was released in 1985. With the first look we view the display screen which consists of time, coins, world displaying 1-1, as well as the actors which are main character Mario, a mushroom, pipes, bricks etc. As a player start playing, the player starts gets the gist of the game and mechanics such as collecting coins increases the coin count, time starts, mushroom provides powers, and after the completing the level the world indicator turns from 1-1 to 1-2 displaying change of level. Thus, providing players through UI/UX learning and understanding about gameplay and its mechanics resulting in vital game experience.

Now above is Super Mario Wonder which is going to be released on 20 October 2023 on Nintendo Switch. From the looks, it is easy to identify the difference in graphical, software and hardware used as well as different interface resulting in more unique and modern approach towards core gameplay and mechanics which affects gaming experience.

2. UI/UX, Game UI/UX, and Roles & Responsibilities:

“What is UI? What is UX? What’s the difference between UI and UX? What’s the difference between GX and UI and UX?” are some common questions that occur in people's minds when diving into development and designing procedures implementing UI/UX and GX concepts. At the basic level, UI or User Interface refers to elements on single or multiple collections of pages and screens that

rely upon and communicate information such as buttons, icons, images, touchscreens, sounds, and lights as well as a sensory response after performing an action that provides interactions for the user with service or product. UX or User Experience refers to implement of study and research of various concepts which are needly and intuitive that assist in designing and development procedures. Simply put, UI is the bridge that gets us where we want to go, and UX is the feeling we get when we arrive **[1]**. Game Experience GX stems into two concepts Game UI/UX. GX principles are like traditional UX where the only difference is that GX refers to the overall experience of a player with the video game. Also, Game UX should not be confused with Game UI as Game UI and UX as the same difference has traditional UI/UX. Even though the concepts of UI/UX and GX are considered as one entity can be allocated to the following are the roles and responsibilities that can be allocated to developers and designers based on their skills and expertise.

1. **UX Designer**: A UX Designer's role is to build simple, immersive, and intuitive interaction that targets user needs and solve various problems ranging from simple to complex utilizing various structural research and study, prototyping, wireframing, testing, and feedback analysis. UX designer ensures the ability to make sure UIs such as menus, navigation, health bar, controls, etc. have consistent functionality and are freely accessible to the player to experience throughout the video game.

2. **UI Designer**: A UI Designer deals with interface aspects which are the visual and aesthetical elements that are on the screens such as buttons, icons, imagery, audio, video, HUD, sensor response, inventory system, radical wheel for weapons selection, and many more. Thus, creating a compelling navigating system for players to interact and assist them throughout the game.

3. **Game UX Designer:** A Game UX Designer's main task is to create engaging challenges and obstacles which players encounter in the virtual environment from making any progress and resulting in making rewards and completion more worthy and satisfying. Level Design, game mechanics, progress fluidity, system compatibility, visual cues, interface overlaying, testing, and understanding feedback are some of the tasks of a Game UX Designer.

A UX designer is concerned with the conceptual aspects of the design process, leaving the UI designer to focus on more tangible elements **[2].**

3. Impact of UI/UX on Game Experience:

The UI/UX design implemented in the video game can leave an impactful mark on players' experience which could result in either excitement or satisfaction or a huge dud. Especially in today's day and age with the availability of advanced technologies, player's expectations and demands are heavier burden. Following are some of the impacts of UI/UX:

1. **Process of research, development, and designing becomes fast, efficient, and effective:** UI/UX assists in all phases of research, development, and design resulting in a more dynamic, flexible, agile, and viable process. Research can be conducted with the help of multiple mediums and sources such as photographs, videos, surveys, interviews, the internet, market monitoring, and archives to gain insightful information for the game and the users. The results can be processed using brainstorming and creativity which then can be utilized for further development and designing cycle which is agile hence reducing the time and cost.

2. **Creating quality user engagement:** User engagement with the video game can be enhanced with the help of a good designed UI/UX and can encourage the players to continue with progress. An exciting and satisfactory feeling should be felt after a player completes puzzles, tasks, or objective that rewards them. Storytelling, aesthetics, gameplay, and mechanics contribute to and affect the evaluation and quality of a game experience.

3. **Providing high accessibility:** A well-designed UI/UX can help to make the game more accessible by providing various options and settings. A player or players can modify the settings according to their preference or can select options that they require with efficient, fast, and easy by providing smooth and narrowed navigation. Thus, resulting in more quality of life enhanced and motivative game experience. Multiplatform also are under this domain.

4. **Aesthetically pleasing:** A well-designed UI/UX can help to make the game look more visually and aesthetically pleasing enhancing the gaming experience. Aesthetics can be applied to not only the environment and its settings but also to visual cues such as navigations, menus, toggles, inventory, cutscenes, sounds, etc. to make the game more engaging and unique.

5. **Software and Hardware resources:** UI/UX helps to generate and gather all the necessary and used assets into a particular location saving a lot of space which helps in resource allocation resulting utilization of software and hardware efficiently. Assets such as components, wireframes, prototypes, tags, audio, videos, etc can be saved internally in software and hardware or externally.

4. Practices in UI/UX on Game Experience:

Following are some of the important UI/UX design practices which assist with the aim of developing and designing a core and unique gaming experience.

1. **Onboarding and easy to use the game:** Onboarding and making it easy to use are tied together. Onboarding is the responsibility of the UX designer to make sure the player is introduced to the fundamental mechanics, controls, and features and their purpose. This helps the players to enter the game, progress smoothly and transition to the different phases of the game, making the game easy to understand and play along with improving skills.

2. **Designing consistency:** One of the most important notes is to have design consistency throughout the game. All the buttons, color schemes, fonts, layout controls, navigation, mechanics, features, environments, settings, etc should be consistent not only throughout the game but even through various individual design levels. This helps the players to understand the setting of levels along with the gameplay and mechanics which can be learned to clear that area. This can also be achieved through aesthetic consistency that not only visually looks beautiful but also conveys and communicates with a player.

3. **Gathering feedback and evaluating them:** UI/UX help to gather and evaluate the feedback from the player base in order to gain necessary insight regarding problems such as errors or bugs which can affect the game experience thus, reducing the quality of the video game. Feedback whether positive or negative opens a lot of too creative opportunities to improve and enhance the game experience. This helps to create a strong community.

4. **Testing during and after development and designing:** In UI/UX, testing is carried out from the start of the development and design till end-user feedback. Testing can be carried out by utilizing various concepts and methodologies such as prototypes, wireframes, brainstorming, portability, system, usability, end user, error handling, etc in order to make sure the game works consistently and is not hindered.

5. **Interactions should be clear to understand:** The interface should be well-designed to ensure that the correct and important interactions that occur between the players and the game are clearly understandable. Players should be able to navigate to collect the necessary information to perform and execute instructions, rules, and commands.

5. Challenges of UI/UX implementation on Game Experience:

Although the impact of UI/UX-based design helped to take positive steps towards a more healthy, efficient, effective, flexible, and creative approach in facets of game development and designing environment, some challenges are still needed to be tackled and solved which may cause harm towards the gaming experience. These obstacles or reasonings need to be handled immediately not based on priorities. Depending upon the scenario some challenges may be solved during development while others after the game is released. Some may be fundamentally flawed which may be extremely harmful.

1. **Overcomplexity:** The game can be designed to be more complex and challenging; it must be stated that an extra layer of complexity to any level may facilitate overwhelming for the player. Overcomplexity may affect the memorability of a player. They can be puzzled by the location of tasks, the location of the players, achievements, etc. which affects the gaming experience in return.

2. **Designing balance between aesthetics and functionality:** Striking the balance between aesthetics and functionality is necessary and vital for well-designed UI/UX, as it is important to develop an immersive and engaging experience. An interface can look aesthetically unique and beautiful but without a proper and stable functionality, its value significantly diminishes. Navigations, controls, and other interactive elements should not be comprised, only visuals.

3. **Technological advancements:** UI/UX and technological advancement are evolving hand in hand. Although it may sometimes result in complexities developers and designers need to keep up and update and adapt to new updates, patches or modules, new operating systems, etc. for existing software engines and hardware. Their advantages and disadvantages need to be studied and evaluated in order to ensure that they would be beneficial.

4. **Player Retention:** In a highly competitive and growing market of gaming with a plethora of competition, player retention plays a highly important factor to measure the popularity, demand, engagement, and experience of the video game. But tasks to accomplish may be difficult as players' experience may vary which may affect their preference. Players' retention success depends on developing and providing a new unique and exciting gaming experience. Some of the mediums are DLC updates, patches or new sequels, or a whole new user experience.

6. Evolution of UI/UX and GX through an example:

To understand the influence and implementation of UI/UX and its evolution over the years we are going to go over examples of Legend of Zelda Majora's mask (2000) and Legend of Zelda Tears of the Kingdom (2023). Aside from oblivious graphical and various technological advancements, understanding how a well-designed UI/UX has also assisted in evolution and unique changes to the gameplay, mechanics, and aesthetics without altering and harming the Zelda core lore and ideology. How even after years and years of different Zelda games with various iterations and gameplay, fans of the Zelda franchise have stayed loyal thus helping to understand player and gaming experience. Also helps us to understand the different views and approaches UI/UX designers and developers took to provide different gaming and unique experience as both Legend of Zelda Majora's mask and Legend of Zelda Tears of the Kingdom are squeals to their respective game title Legend of Zelda Ocarina of Time (1998) and Legend of Zelda Breath of the Wild (2017).

In Legend of Zelda Majora's mask, which was released on the game cube follows some classic and familiar UI such as Attack and Throw commands and pressing the Start button of the console for accessing the menu resulting more familiar and comfortable experience for the player base. While also adding more dynamic, unique, and scalable new mechanics and features according to the world and the storytelling such as a HUD, new navigation system, new fonts, and icon style, new graphical pixels, menu resources allocation, dialog box, etc. This also includes the newly introduced character designs and various gameplay animations such as

fighting, running, climbing, etc. UI designed for this game is respectful not only to experience the 3D world but also to the lore and characters. UX is also satisfying various due to the variety of rewards the game and system provide, storytelling which is excellent, custom and variety of abilities, various simple as well as complex dungeons, levels, and areas to progress, etc. Depending upon the UI actions, certain music and audio samples are also implemented which enhances the UX.

In Legend of Zelda Tears of the Kingdom, UI/UX is more dynamic and optimized to a whole new level as it is an open-world game, which automatically makes is it a more unique and exciting gaming experience. New mechanics and features assist along with the core lore and storytelling which makes Zelda implemented by utilizing a well-designed UI/UX. User Interface is much more dynamic, flexible, technical, and conceptually designed. Controls are simple to perform more complex activities which helps the players for example a simple attack followed by different attack commands which can result in a complex and deadly attack. The navigation system with a more optimized checkpoint system, Menu with a more simple and effective design, QTE (Quick Time Event) interface, crafting system, combat system, etc are all excellently designed. User Experience contributed by an excellent UI and world is phenomenal and synchronized. Enhanced crafting and ability system provides opportunities to exercise creativity for various activities such as solving puzzles in dungeons, cooking for survival, crafting valuable items and artifacts, and using surrounding for tactical and strategic advantage e.g., creating different various robots, vehicles, crafts, etc. Tears of the Kingdom UI AND UX both provide players and new players with an excellent and memorable gaming experience.

7. Conclusion:

The implementation of UI/UX and GX systems for enhancing the gaming experience has provided an opportunity for meeting the standard for immersive, interactive, and intuitive experiences which are highly in demand by consumers, as the gaming industry is focusing on the “First of the kind.” UI/UX can provide and introduce the evolutionary steps towards more creative solutions and processes for developing and designing high-quality video games with unique tastes and identities. Results of UI/UX and GX led to the utilization of some of the most sophisticated and exciting trends booming in the industries such as AI-integrated solutions, augmented reality, enhanced motion and animation settings, voice and conversational UI innovations, legacy gaming, and multi-platform performance. This can be utilized in different and variety genres of video games to develop and design new and unique experience on different consoles which consists of handled, docked, or home and gaming system which includes mobile gaming and Pc gaming. UI/UX can provide and introduce the evolutionary steps towards more creative solutions and processes for developing and designing high-quality video games with unique tastes and identities. Thus,

resulting in more enhanced and improved gaming experiences for players as well as casual people ranging in from children to adults has the market of gaming right now at heights never seen before.

References:

[1] Jason Ogle Host and producer of User Defenders podcast, Designer at CACI International

[2] Andy Budd Co-founder of Clearleft, Founder of UX London

[3] Mario Images from Google