Game Mechanics as Videogame Genre Identifier

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Abstract

Contemporary genre system of video games is formed by the video game industry and it is divided into groups quite freely. This study determines the genre dominant of a video game on the basis of the analysis of theoretical literature, the findings of the developers of the gaming industry and on the basis of the analysis of video games, which are world leaders in sales.

It is shown that such structural video game units, as dynamics and components, do not reveal an established connection with the category "genre" and vary from one gaming project to another. The only constant parameter, presented in video games, is mechanics that are repeated in popular projects of one genre, identifying the "face" of the genre, and its established core.

Comprehensive methodology analyses of 2017 statistics data of the online digital distribution platforms of computer games "Steam" ("VALVE" company) and "Blizzard.battle.net" ("Blizzard" company) and game mechanics list of the American company-developer of social games "SCVNGR" (SCaVeNGeR) gave the opportunity to see repeated core mechanics in the videogame projects of the most widespread genres.

Keywords: Genre; Video games; Dynamics; Game mechanics; Genre dominant

Introduction

Being very relevant the problem of video games typology, at the same time, remains as a little researched one. It's due to the relatively young history of studying this phenomenon as well as due to rapid development of information and communication technologies. The genre as a type of socio-cultural convention is a traditional form for various types of communication - written, oral, digital, and artistic.

Unlike literary and journalistic genology, the system of video games genres is based on individual scientific investigations and attempts made by game industry experts. Most game magazines and specialized portals are trying to develop their own classification of video games according to the context in which the resource operates. Various video games classifications are based on different approaches and technological stages of the development of the genre system, so they can be enriched by various refinements according to different criteria. For example, according to the following criteria: the number of players (a single-player game, a multiplayer game, a mass one); or the type of reception (verbal, visual, auditory, multimedia); or the platform type (console, computer, mobile, multiplatform). Genres of video games were formed by the developers on the basis of popular schemes of game tools, with the addition of new technological approaches and creative solutions, so synthesized forms that combine several genres are the most common. That was the way to form the groups of similar video games, which varied round a repeating scheme.

Apperley, the researcher of the University of Melbourne, was right pointing out that the modern genre system of video games is formed by the video game industry and it is divided into categories quite freely. Considering the video game as a new media form, the author touched on the important problem of finding the constituent genre characteristics of video games. Thus, he joined the discussion between the adherents of the naratological approach towards the analysis of video games and the adherents of ludology [1]. This problem remains relevant until now.

The Objective of the Study

To determine the genre dominant of a video game on the basis of the analysis of theoretical literature, the findings of the developers of the gaming industry and on the basis of the analysis of video games, which are world leaders in sales?

Methodology

To make the research we used a comprehensive methodology, namely we used the methods of description, of comparison, of analogy and of extrapolation on the basis of structuralism approaches, which were complemented by the analysis of the samples of rating game projects while using the

systematization of the data. We also used the linguistic method of the semantic correlation in giving the definitions.

Subjects of the study and sampling techniques

The subject of the analysis is game projects, which are the world's video game sales leaders in 2017. They are identified by the statistics data of the distribution platform, the online digital distribution service for computer games "Steam" ("VALVE" Company) programmes. It is ranked first in the number of active users in the world's video game market, obtained through the help of application programming interface Steam API; as well as by the data from the video game distribution platform "Blizzard.battle.net", ranked second in terms of the number of active users in the world's market in 2017 ("Blizzard" Company; Store.steampowered.com and Battle.net). The popularity of video games will be determined by the criterion - the number of downloads (from 1,5 million to 44,5 million).

Theoretical Discussions

Despite the lack of the established genre video game system, there is a need in the development of such a system. It is required by marketers, advertisers, game critics and computer game developers for studying tastes and expectations of the game process audience. Such a genre system is also required by the audience, who, judging by the product packaging of the genre marking, can imagine the characteristics of the game. However, the genre definition is often complicated for many reasons: different sources mark the same genres, similar in content, with the help of different names, such as "3D-shooter", "3D-Action", "FPS", "TPS", "action" or "action film"; very often the video games genres themselves are a combination of several genre schemes, for example, the video game "Mass Effect" combines the features of such genres as a shooter and a role-playing game, "Heroes of Might and Magic" combines the features of a strategy and a role-playing game. In general, it is difficult to determine some games by a genre, for example, "Grand Theft Auto" (GTA).

Despite the fact that there are no clear genre definitions of the genres of computer games, yet there is a classification of the most common ones. Typically, the genre of the game is determined by the design of the developer and includes a standard set of tools.

A popular genres classification (popular in English-language scientific and reference publications) is the one proposed by professor Ernest Adams, the founder of the International Association of Video Game Developers and the game design consultant, who highlights the following ten genres of video games: action, strategy, role-playing games, sports games, road simulators, designers and management simulators, adventures, life simulators, puzzles, on-line gaming [2].

Andrew Rollingz and Morris Dave, the British video game developers, the authors of the work "Designing and Game Architecture" distinguish seven game genres. To those mentioned above – adventure, action, strategy and simulator –

they add such genres as a puzzle, an educational game and a fun [3].

Summarizing the experience of the professional community, A. Kirizleev, the developer of video games, proposes to divide video games genres into three large groups according to the criterion – the nature of the actions that are performed in the game. These are "Games of communication", "Games of action", and "Games of control". The author calls group characteristics as the entities, among them: learning, puzzles, communication, the hero, research, collection, evasion, destruction, competition, driving, care, development, control, tactics, and planning.

Games of communication

The key actions are getting information, communicating and learning the world.

Games of action

The key actions are movement in space, use of weapons and equipment.

Games of control

The key actions are orders, management, and distribution of material goods [4].

We can also see no less interesting generalization of the experience of the gaming industry in the article "Genres of computer games" presented on the educational portal "Academic". The authors of the article believe that, despite the fact that the classification of computer games is not completely systematized, there is a certain consensus of the developers on the main genres, which combine a large number of genre varieties. Among these, they call thirteen positions, united by different criteria. They are: action, shooters, fights, arcades, simulators, strategies, war-games, adventures, quests, puzzles, role-playing games, as well as multiplayer and mass online ones that can be determined by another criterion – the number of players. A series of games with combined genre forms is defined by the title of the main genre, but when it is formed by genre diversity as the basis for gameplay, then genres are converted according to series on the cover of the game, for example, "Grand_Theft_Auto" or "Space Rangers" [5].

The genre dominant is the main one when defining the genre in the postmodern heterogeneous socio-cultural space. According to this dominant a game, as a unit of mass communication space, can be typified. Hence, we can assume that genres of videogames are both the subject and the object of the influence in the system of mass communication and mass culture. This approach to the typology of computer games correlates with the approaches to the analysis of genres of journalism, fiction and cinema art.

Professor Jan Bogost in his work "Video Games Rhetoric" emphasizes the fact that video games are not only a way of entertainment, but they are also messages about the

surrounding world, which needs a critical attitude towards them [6].

Thus, the question of how these messages are formed arises. The scientist suggests using literary and technical theory to analyze video games. In fact, the author applies a structuralist approach, which allows combining the methods of literary criticism and of hard sciences, to consider literary and journalistic works, films, and video games as a configuration system represented by a set of interrelated units of meaning.

Now we return to the solution of the problem posed by Apperley as to "the search for the constitutive genre characteristics of videogames", which will allow, on the basis of the characteristics found as a genre-based criterion, developing a video games genre system according to the basic principle. Being based on the scientific discussion (described in Apperley's work) between the adherents of the naratological approach to the analysis of video games and the adherents of ludology, being also based on the structuralist approach to the analysis of video games, proposed by Yan Bogost, we emphasize that the methodology of the research of a video game as a play process (gameplay), which is based on the rules, is more modern than the naratological approach, when a computer game was considered as a text. This fact is logical in the light of objective preconditions – the transition from a verbal civilization to a visual one, to a process of constant modernization of videogames in the conditions of dynamic development of information and communication technologies [1].

Thus, in order to solve the problem of genre typology in the context of our study, it is important to identify the genre dominant, which we understand as a constitutional feature or a concept of the genre of a video game, according to which the most common types can be ordered.

It is important to keep in mind the fact that under the structuralist approach, when a genre's peculiarity of video games is determined not on the basis of the plot, but on the basis of the play process (gameplay), the identification of the nature of the interaction of structural units requires the usage of additional characteristics. A video game, as a set of elements, consists of such units as the hero, the plot (narrative), the setting and the main motive mechanism – the rules of the game and the game mechanics. But the hero, the plot and the setting are present not in every video game, unlike the rules of the game which are provided by the game mechanics, creating an interesting and pleasant impression of the gameplay.

Miguel Sicart, the Danish researcher, points out that in the practice of video games, "mechanics" and "rules" are often considered as the same or mechanics are considered as a part of rules. Being based on the analysis of video games "Rez", "Every Extend Extra", and "Shadow of the Colossus", the scientist shows their differentiation. According to the author, the most significant is the ontological separation between the mechanics and the rules; this separation lies in the fact that the rules are normative and the mechanics are performative, which envisage the implementation of the action [7].

Jesse, the developer of entertainment projects in Disneyland, the professor of the Carnegie Centre for the Entertainment Technologies at the University of Mellon, in his classical work on the theory of video games "The Art of Game Design", defined game mechanics as "the core of the video game", "the skeleton from which the game is built in the art of the game design" [8]. Explaining the complexity of the problem of the classification of game mechanics, Jesse highlights two levels for studying this phenomenon. The first one is in the mere interpretation of game mechanics in the functional aspect as game rules. The second one is in understanding this unit of gameplay as a mental model, the structure and mechanisms of influence of which are connected, both with the conscious, and with the subconscious, inaccessible for studying [8].

Carlo, the Italian scientist, believes that "gaming mechanics is an instrument that a player needs to interact with in order to engage in gameplay" **(Table 1)** [9].

Table 1: Dynamics, mechanics, components.

Dynamics	Mechanics	Components
Loyalty	Appointment Dynamic	Free Lunch
Moral Hazard of Game Play	Avoidance	Virtual Items
Ownership	Behavioural Contrast	
Pride	Behavioural Momentum	
Privacy	Blissful Productivity	
Progression Dynamic	Cascading Information Theory	
Status	Chain Schedules	
Social Fabric of Games	Communal Discovery	
Urgent Optimism	Companion Gaming	
Achievement	Contingency	
	Countdown	
	Cross Situational Leader-boards	
	Disincentives	
	Endless Games	
	Envy	
	Epic Meaning	
	Extinction	
	Fixed Interval Reward Schedules	
	Fixed Ratio Reward Schedule	
	Fun Once, Fun Always	
	Interval Reward Schedules	
	Lottery	
	Meta Game	

	Micro Leader-boards	
	Modifiers	
	Ratio Reward Schedules	
	Real-time v. Delayed Mechanics	
	Reinforcer	
	Response	
	Reward Schedules	
	Rolling Physical Goods	
	Shell Game	
	Variable Interval Reward Schedules	
	Variable Ratio Reward Schedule	
	Virtual Mechanics	

This conclusion again brings us back to the key, in our opinion, structural unit of video games – the "game mechanics", which acts as a constant of the structure, in contrast to the relevant units - the hero, the setting, and the narrative; this allows us considering it genre-valued.

Summarizing the points of view given above, regarding the definition of a game mechanics, we emphasize that we will understand game mechanics as a tool of gameplay, a gameplay mechanism for implementing the rules of the game.

In the practical field, large companies – developers of computer games, repeatedly attempted to describe and systematize the "sets", the "logs", and the "lists" of popular game mechanics. The one, the most cited by video game developers, is the list of the game mechanics proposed by the American company-developer of social games for mobile phones SCVNGR (SCaVeNGeR). The company, whose audience has reached 1 million users, launched a "Playdeck" project from SCVNGR with its own generalization of a set of 47 game mechanics for public access. It outlines simple basic actions such as "achievements", "statuses", "virtual goods" and more complex mechanics, such as, for example, "cascading information theory", which provides metered reporting in order to force the player to get into the standby state in guesswork and move forward on the script in the search of greater awareness. 47 widespread game mechanics, which are combined by the developers in a definite sequence to get better results and more engaging game experiences for participants are presented in **Table 2**.

Table 2: The Genre of action.

The Genre Of Action		
Dynamics	**Mechanics**	**Components**
BASIC		
Urgent Optimism	Response	

	Urgent Optimism	
	Fun Once, Fun Always	
	Countdown	
	Modifiers	
Additional		
Ownership	Communal Discovery	Virtual Items
Progression Dynamic	Reinforcer	
Pride	Obstacle	
	Great Meaning	
	Action Series Reward Schedule	
	Appointment Dynamic	
	Contingency	
	Blissful Productivity	
	Cascading Information Theory	
	Chain Schedules	
	Companion Gaming	
	Cross Situational Leader-boards	
	Disincentives	
	Envy	
	Epic Meaning	
	Extinction	
	Fixed Interval Reward Schedules	
	Fixed Ratio Reward Schedule	
	Lottery	
	Ratio Reward Schedules	
	Response	

As we can see, the list of names of the game mechanics is not systemic. Firstly, they do not always accurately reflect the essence of the predicted result. Secondly, they are systematized not through a single principle. Thirdly, they have elements of repetition. For example, cross-competition is a process, "loyalty" and "pride" are nominative feelings, "free lunch" nominates the result. At the same time, the names of the mechanics using the system of rewards are repeated nine times – "rewarding for blissful productivity" (6), "a fixed interval reward schedule" (19), "a fixed ratio reward schedule" (20), "an interval reward schedule" (23), "ratio reward schedules" (34), "reward schedules" (38), "rolling physical goods" (39), "a variable interval reward schedule" (44), "a variable ratio reward schedule" (45). Also, the question is how the proposed mechanics will work outside the SCVNGR projects.

Scientific approaches to ordering groups of game mechanics are presented in the classical works on the theory of computer games and gaming by Jesse [8], Ernest Adams and Yoris

Dormans. In later developments, namely in the theory of gaming by the American researcher Kevin Werbach, the components of video games were described as a hierarchical system, which included the dynamics (general principles), mechanics (core processes), components (dynamics and mechanics specification) [10]. We arrange the list of popular game mechanics of the SCVNGR Company (SCaVeNGeR) according to K. Werbach's theory **(Table 2)**. Of the 47 positions listed in **Table 2**, ten game elements, according to the characteristics, fall under the definition of "a generalized aspect of the gaming system that is not directly revealed in the game" [10]. Some of them are named respectively, for example, "progression dynamic". Two elements, as specific subjects by definition, for example, "free lunch", are the components of the game. The mechanics, in the narrow terminological sense of this phenomenon, are 35 positions, which we can use to work with experimental material.

We shall identify the key mechanics for each genre, which, in our proposed concept, function as a genre dominant. We'll take the most popular video games as examples. The popularity of video games will be determined by the criterion - the number of downloads (from 1,5 million to 44,5 million). To find the most popular games of different genres, we'll use the open data of the distribution platform "Steam", as well as of the platform "Blizzard.battle.net" (the "Blizzard" Company).

Conclusion

We can see by the analytical charts that such structural video game units, as dynamics and components, do not reveal an established connection with the category "genre" and vary from one gaming project to another. According to K. Werbach, the dynamics are not directly revealed in the game. The only constant parameter, presented in video games, is the mechanics that are repeated in popular projects of one genre, identifying the "face" of the genre, and its established core.

For example, the analysis of rating game projects, marked by the developers as "Action" such as, "Team Fortress 2"; "Counter-Strike: Global Offensive"; "Warframe"; "Left 4 Dead"; "Super Mario Bros", shows that the constant set of mechanics for this genre form are the mechanics, which ensure dynamical actions ("Response to the event", "Modifiers", "Countdown") and which are complemented by emotional upsurge and optimism ("Fun Once, Fun Always"). The essence of the action is in the speed of the player's reactions, increased emotional and brain activity, which is extrapolated to the visualized objects involved in the video game. The constant set of mechanics is diversified in game projects by the relevant sets of the mechanics and components that vary from one gaming project to another of the same genre, as presented in **Table 2**.

Video games of the genre "Strategy" (considered on the examples of video games "Total War", "Star Craft", "XCOM: Enemy Unknown", "Sid Meier's Civilization V") are characterized by the player's development of planning skills, tactical and strategic actions, and the collection and concentration of objects and things. The dominant mechanics of the game-strategy are a small set – "Cascading Information

Theory", "Chain Schedules", "Response", and "Blissful Productivity Reward" as illustrated in **Table 3**.

Table 3: The genre of strategy.

The genre of Strategy		
Dynamics	**Mechanics**	**Components**
Ownership	Cascading Information Theory	
Progression Dynamic	Chain Schedules	
	Response	
	Blissful Productivity	
The genre of Role-Playing Games		
Dynamics	Mechanics	Components
Status	Blissful Productivity	Virtual Items
Progression Dynamic	Cascading Information Theory	
Ownership	Chain Schedules	
Pride	Disincentives	
	Response	
	Reinforcer	
	Reward Schedules	
	Fixed Interval Reward Schedules	
	Fixed Ratio Reward Schedule	
	Ratio Reward Schedules	
	Extinction	
	Urgent Optimism	
	Shell Game	
	Epic Meaning	
The genre of Adventure		
Dynamics	Mechanics	Components
The genre of Puzzle		
Dynamics	Mechanics	Components
Ownership	Response	
Progression Dynamic	Blissful Productivity	
	Cascading Information Theory	
	Companion Gaming	
	Countdown	
	Fun Once, Fun Always	
	Micro Leader-boards	
	Modifiers	

	Reinforcer	
	Fixed Interval Reward Schedules Ratio Reward Schedules	

The genre of ole-playing games (RPGs) is the richest in the set of constant gaming mechanics, the number of which, according to **Table 2**, has 14 positions. Popular "World of Warcraft", "The Witcher Series", and "The Elder Scrolls V: Skyrim" have an exciting storyline, characters, dialogues and a variety of set-ups. Gaming projects of this genre are sometimes referred to as interactive books. A significant role in them is played by the hero, with whom the player identifies himself. The genre of role-playing games demonstrates not only the richness of the game mechanics, but also the diversity of the dynamics, repeated in popular video games of this genre. These are "Status", "Progression Dynamic", "Pride", "Ownership", which perform the role of the hero's fabric for the implementation of certain actions.

In the projects of Adventure genre ("Dishonored", "Grand Theft Auto V", "Portal 2") the hero interacts with the game world, rich in various game components and in-game meta-games that form a challenge for the player, provoke excitement and adrenaline due to the mechanics that create obstacles ("Contingency", "Cascading Information Theory", "Disincentives", "Companion Gaming"), require a quick reaction ("Response to the event") and provide "Blissful Productivity Rewarding". Genres of adventure and the action are often synthesized.

The core of the Puzzle genre in the projects "Angry Birds Series", "Mysterious House", and "Heaven" is made up of the mechanics that provide repeat actions ("Response to the event", "Modifiers", "Cascading Information Theory", "Countdown") with the strengthening of the positive reaction to the repeated action (mechanics "Reinforce", "Fun Once, Fun Always", "Companion Gaming", "Micro Leader-boards"), which, as a rule, tends to lead to awards (mechanics "Blissful Productivity Reward", "Fixed Interval Reward Schedule", "Ratio Reward Schedules").

Simulators of various types (gaming projects) "Garry's Mod", "Robocraft", "War Thunder" are based on the reproduction of actions of a certain type of activity – the collection of work equipment, management of technical equipment or certain types of practices. The repetitive set of mechanics that provide simulation is "Behavioural Momentum", "Behavioural Contrast", "Reinforce", which, on a more generalized

motivational level, is organized by "progression dynamic" and "urgent optimism".

Sports video games are as close to real sports games as possible. The video games "Freestyle 2: Street Basketball", "Race Room Racing Experience", "Fishing Planet" contain a very simple set of actions as a repeating component – "Behavioural Momentum", "Contingency", "Blissful Productivity Reward" with a constant "Progression Dynamics", which serves as the main motivation of a player.

It should be noted that the only repeated element that was found to be common to all the game projects that we considered is the dynamics of "Achievement", which was the main motivational intent that encourages people to play.

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