

Sid Meier's Civilization Franchise: Sustaining Innovation in a Shifting Gaming Landscape

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ABSTRACT:

Sid Meier's Civilization is one of the most prominent game franchises thanks to its distinct contribution to the strategy game genre. This is evidenced by the game's inclusion as one of the few games in the World Video Game Hall of Fame. The games in the franchise feature significant replayability, allowing designers to standardize game mechanics that were typical of high-end AAA titles. Innovation, which is more often associated with low development costs, is becoming less common in the game mechanics of high-cost titles. However, original designer Sid Meier set a rule of thirds in development – keep a third of the original game components, improve a third, and innovate a third, thus emphasizing game innovation. The resulting products should deliver innovative mechanics that retain original players while captivating new ones. The purpose of the case study is to evaluate the quality of the innovative game mechanics of the *Sid Meier's Civilization* digital game series within the genre and series. The innovativeness and the methods that lead designers to use them can serve as an example for other studios developing strategy games at a time when interest in strategic planning among gamers is declining.

KEY WORDS:

AAA, design, game mechanics, innovation, *Sid Meier's Civilization*, strategy game.

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Introduction

What's bigger than the history of railroads? The entire history of human civilization! (Meier & Noonan, 2020, p. 116)

Sid Meier's Civilization (MicroProse et al., 1991-2016), hereafter referred to as the *Civilization* series, is one of the most famous strategy game franchises of our time. For games, the use of a designer's name is not as typical as in the film industry, which sets the franchise apart from other titles. Prior to the creation of *Sid Meier's Civilization* (MicroProse, 1991a), MicroProse, founded by Bill Stealy and Sid Meier, was a company dedicated to military-themed games, primarily flight simulators,¹ but Meier later branched out into other genres as well. For his next title, a pirate-themed RPG, due to concerns about low market demand, Stealey suggested using Meier's name: "Well, we should at least put your name on it. Sid Meier's pirate-whatever. Then maybe people who liked the F-15 will recognize it's you, and buy it anyway" (Meier & Noonan, 2020, p. 70). This RPG was followed by other critically acclaimed titles, including *Sid Meier's Railroad Tycoon* (MPS Labs, 1990), which was inspired by the success of *SimCity* (Maxis, 1989), a game focused on building and creating rather than destroying and fighting. After the success of the train simulator, Sid Meier and Bruce Shelley thought of a game that would be bigger. Thus began the history of the *Civilization* gaming franchise, of which the numbers of

1 For example: *Hellcat Ace* (MicroProse, 1982); *F-15 Strike Eagle* (MicroProse, 1985); *F-19 Stealth Fighter* (MicroProse, 1992); *Gunship* (MicroProse, 1989) and many others.

copies sold are increasing from title to title. From the first instalment with 1.5 million copies sold to the release of the sixth instalment in 2016 with 11 million copies sold, sales have continued to rise (Andric, 2023). However, the concurrent growth and success of the digital game industry cannot be ignored, in which *innovation* has played a significant role as game publishers and hardware engineers have designed products to meet the needs of an increasingly broader audience (Wesley & Barczak, 2016).

Due to its impact on gaming culture, in 2022 the first game in the series was inducted into the World Video Game Hall of Fame, as one of 45 games currently inducted up until September 2024 ("Sid Meier's Civilization", n.d.). The series has also received attention from researchers, among several other awards. The strategic simulation is set on Earth, and the individual civilizations are based on cultural realities and historical leadership figures, which has led experts to wonder about its historical accuracy and educational potential (see Chapman, 2013; Mol et al., 2017; King, 2021; Majewski, 2021), as well as its potential for management skills training (Simons et al., 2021). The series has six parts, with a seventh part announced by the publisher for 2025 (Valentine & Stedman, 2024). The series has been published for 33 years, during which time there have been significant technological advances in the development of digital games, allowing for better game design, audiovisual enhancements, and improved fluidity. Although Wesley and Barczak (2016) focus primarily on hardware innovations (primarily consoles), they note that the most successful companies were not those that offered the most advanced consoles and software, but those that provided innovative products that reached new audiences while keeping development costs low. The presumption that an innovative game will inherently achieve success within the industry is unfounded. Nonetheless, historical examples demonstrate that titles incorporating groundbreaking mechanics and distinctive gameplay experiences have garnered considerable success, as evidenced by *Minecraft* (Mojang Studios, 2011), *Among Us* (Innersloth, 2018), *Lethal Company* (Zeekerss, 2023), and numerous others.

When we investigated how game mechanics evolved in Blizzard's *Warcraft* (Blizzard Entertainment, & Cyberlore Studios, 1994-2003) strategy series, we found that mechanics in the sequels were only slightly modified by the authors adding resources or removing some of the features (Pravdová & Cihlářová, 2024). This trend of game mechanics standardization has been noticed by researchers as far back as in games from the 1980s-1990s. According to Rouse (2004), this trend was particularly evident in adventure games from LucasArts and Infocom. Today, blockbusters released every year work on this trend. Criticism of standardization also comes in terms of the narrative aspect of the game. Dubbelman (2016), examining the narrative mechanics of games, has also pointed out that designers often use conventional mechanics from proven genres instead of creating ones that better suit the narrative experience. Due to its complexity typical of the 4X genre of strategy games and the abundance of game rules, the *Civilization* series provides high *replayability*, allowing for standardization of game mechanics. On the other hand, however, the growing interest in these games due to the number of units sold as well as the long-standing tradition suggest opportunities for innovation in game mechanics. Meier, the lead designer of the first episodes of the series, mentions in a memoir the rule of thirds that other designers should follow when designing sequels. The rule encompasses one third traditional gameplay, one third of the gameplay should include enhancements, and one third of the gameplay should be entirely new. This should ensure that in addition to technical improvements to the games, game mechanics are also improved and innovated (Meier & Noonan, 2020).

This case study on the *Civilization* game series aims to evaluate the quality of game mechanics innovation within the terms of genre and series. Equally significant is the need to identify and document the approaches involved in developing innovative mechanics.

Game Mechanics of Strategy Games

Although it seems natural, the study of game mechanics requires the researcher to have knowledge of the rules, which is increasingly difficult to achieve in increasingly complex games. The only difference from tabletop games, from which the mechanics have been remediated into strategy games, is that in digital games the computer controls the player's compliance with the rules. According to Juul (2011), it is a modification of the classical game model that allows for more complex rules than humans can handle. It also allows players to play games in which they do not know the rules from the start. Zimmerman (2004) points out that game mechanics are what make the game a game. The ludic element of games distinguishes them from other types of media, but since the earliest definitions of games, it is rather the rules that characterize them (see Wittgenstein, 1953; Caillois, 1958; Huizinga, 1971; Crawford, 2003). However, rules condition the functioning of game mechanics. The importance of rules in terms of game mechanics has been summarised by Juul (2011), who argues that rules set up potential player actions and give them meaningfulness, but also prohibit certain actions. From Juul's perspective, rules represent certain boundaries, constraints and meanings in the game affecting the player's actions. However, the definition still refers to the skeleton of the game composed of rules, which is very complex and does not only include mechanics. According to Fernández-Vara (2014), rules can determine how the game works, while mechanics refers to the rules determining how the player participates in the game. Adams and Dormans (2012) divides gameplay into game-mediated challenges and player actions, with both parts in a relationship governed by game mechanics, e.g. a player can only jump if the game mechanic of jumping is embedded in the game. Thus, the mechanics are those rules that determine how the player participates in the game, while the rules about the functioning of the game world ensure that the player's actions are meaningful. If there are many mechanics in the game, there will be even more rules to give them meaningfulness. This relationship is relevant when studying mechanics, because rules about the functioning of the game world can significantly change the dynamics of the game. Gamespot editor, Tom Chick, when reviewing the third instalment, noted how significant the impact of small changes on gameplay is:

In fact, you might even be disappointed when you start your first game of what feels like a warmed-over version of Civ II. But this feeling fades with time. The more you play, the more you'll realize that the new game's seemingly subtle changes have a significant impact. (Chick, 2006, para. 2)

For example, the mechanics of movement in the *Civilization* series are constrained by the grid rules. The first games in the series used fields in the form of a square grid, which limits the movement mechanics to horizontal and vertical displacement. By changing the shape, which is defined by the rules of how the world works, the movement pattern changes. In later instalments, the fields were hexagonal, opening up to six movement options for the player instead of the original four (Picture 1). This is not the only mechanic that the game world rule change has limited, nor is it the only rule affecting movement.

Strategy games are referred to by Juul (2011) as *games of emergence*, which specify a game as a smaller set of rules that combine to provide a game tree (many variations of the game) with which players cope by designing strategies. We understand the 'smaller set of rules' as the ratio between the rules and the possibilities that arise due to combining. Board games do not have the option of an electronic controller, and the player must learn

the rules in advance. However, digital game players need only learn the *core mechanics* that create patterns of player behaviour, manifest the game experience, and represent moments of player activity repeated over and over again (Tekinbas & Zimmerman, 2003).



Picture 1: Comparison of square and hexagonal fields from the first and sixth games of Civilization series

Source: authors' screenshots from games Sid Meier's Civilization (MicroProse, 1991a) and Sid Meier's Civilization VI (Firaxis Games, 2016)

These are essential for the player to be able to start playing at all. However, the meaningfulness of these mechanics in the form of game world rules is equally crucial. These rules determine the goal, challenges, or options for planning strategies. Therefore, it is extremely important that the rules are fixed, clear, easy to understand, and their interpretation cannot be subjective. Strategy games are characterized by the complexity of player decisions (Qaffas, 2020). According to a contemporary preview on *Sid Meier's Civilization* by Emrich (1991), the game lacked a manual to guide players on how to play the game, as it contained many elements without direct in-game explanations that the player had to work with. The main problem lay in the many rules of the game world. The game came with a 120-page physical (later digital) manual, which Emrich advised all players to go through thoroughly before playing. Games at first often only convey the necessary information on how they should be played. The player learns the rest by playing, during which time he or she could also make use of Civlopedia. The latter is included in all games in the series and its role is to provide the player with in-game information about a unit, building or other part of the game. However, both the manual and the Civlopedia only contain information about the rules of the game world. For example, they describe bonus resources, but do not give the player instructions on how to work with them. This is where strategies come in, which the player suggests after accepting the rules.

Regarding game mechanics, we also encounter the issue of the game mechanics performers, which Sicart (2008) defines as methods invoked by agents, designed to interact with the game state, whereby these mechanics are subordinated to the rules of the game world. Sicart also took into account mechanics that are not in the hands of the player, for example, in *Sid Meier's Civilization*, the spawning of barbarian units. In order to distinguish between executors, Järvinen (2008) distinguishes between mechanics whose executor (agent) is the player and procedures whose executor is the system. For this research, we focus on mechanics because these are the possibilities of the player's actions in the game and represent how the player interacts with the system.

The games in the series fall under the 4X subgenre representing the four actions in accordance with the rules of the game world that the player performs in the game: eXplore, eXpand, eXploit, and eXterminate. Although the emergence of the sub-genre is primarily associated with Emrich's (1993) review of *Master of Orion* (Simtex, 1993), it was the popularity of *Sid Meier's Civilization* that was behind the popularisation and rise of the sub-genre (Mol et al., 2017). Today, the conventions that the series has anchored are

being utilised by mobile games, with statistics showing that consumers spend the most money in the 4X march battle strategy subgenre (Knezovic, 2024). Overall, mobile gaming accounts for approximately half of the gaming market's profits (Buijsman et al., 2024), which continues to grow, therefore the impact of the series is still relevant to the industry.

One of the regulatory rules determining the functioning of the game is the division of strategy games according to time into turn-based, in which the player executes a move during his turn and waits for the next one after the opponent's turn, and real-time strategy games, taking place in real time (Qaffas, 2020). Turn-based strategy games mostly provide players with unlimited time,² while real-time strategy games encourage players to think quickly (Sulaeman & Aji, 2021). Meier and Noonan (2020) describe such regulation of turn length as an instantaneous increase in excitement, in which quick thinking is rewarded more than precision. However, even instantaneous evaluation can quickly give way to frustration or confusion. All of the *Civilization* series' singleplayer modes use a turn-based system. In it, the player has an unlimited amount of time to carefully think through progression and tactics. More invested time and personal decisions, according to Meier and Noonan (2020), lead to a greater evaluation experience. In its multiplayer modes, players conduct their rounds simultaneously, but under time regulation, where players pre-set a maximum round length. This can be sped up if all participating players end their round by pressing the end-of-turn button. Rounds play an important role throughout the series as they represent a resource of time that is exchanged for building and technological advancement.

Methodology

Based on Rousse's (2004) claim about the standardization of game mechanics in high-cost titles, Dubbelman's (2016) view of the preferred use of conventional mechanics in successful titles, and our research on the *Warcraft* strategy games (Pravdová & Cihlářová, 2024), we focused on the innovativeness of the different parts of the *Civilization* series. However, given the stated rule of thirds (Meier & Noonan, 2020) and the growing popularity of the series, we expected the instalments to contain innovations in game mechanics, in contrast to previous research. The case study aims to assess the quality of the game mechanics innovativeness of the *Civilization* series within the terms of genre and the series. Due to the large number of included games and their expansions (DLCs), we focused only on the main instalments of the series: *Sid Meier's Civilization*, *Sid Meier's Civilization II* (MicroProse, 1996a), *Sid Meier's Civilization III* (Firaxis Games, 2002a), *Sid Meier's Civilization IV* (Firaxis Games, 2005a), *Sid Meier's Civilization V* (Firaxis Games, 2010), *Sid Meier's Civilization VI* (Firaxis Games, 2016). For the research, we set two research questions:

- RQ1: What is the level of *Sid Meier's Civilization* innovativeness within its genre?
- RQ2: Are the *Civilization* game sequels innovative compared to previous instalments?

To answer the research questions, we applied a qualitative research, based on a combination of deductive-inductive approaches, as well as selected methods of logical analysis such as description, comparison and synthesis. These are particularly necessary in setting up the research and determining the analytical categories.

2 The exception is, for example, *Hearthstone* (Blizzard Entertainment, 2014).

Innovation can generally be considered a new idea, a new method, or a new device according to the Merriam-Webster dictionary (n.d.). The Cambridge dictionary (n.d.) also refers to innovation as a new idea and method, as well as the use of a new idea or method. However, according to Eurostat Statistics Explained (n.d.), a new or significantly improved product (or service) launched on the market or introduced in an enterprise can be considered innovative. Based on these definitions and previous research in the field of game mechanics, we considered the following as innovation in the analysis:

- the use of a new game mechanic in the strategy game genre for the first instalment;
- the use of a new mechanic that was not applied in the previous instalment of the series;
- a significantly improved game mechanic compared to previous instalments in the series.

We evaluated the innovativeness of the series based on how many episodes in the series contained innovative core mechanics. In emergent games, the strategies that the player devises after learning the rules of the game world and the core mechanics that form the pattern of their (repeated) behaviour come to the fore. Given the complexity of the rules and their descriptions in the original guides, our analysis focused on the innovativeness of the game mechanics with respect to the genre in the first instalment of the series. We evaluated the innovativeness of the first instalment based on historical contexts and inspirations. For the sequels, we focused on innovativeness, especially with respect to previous instalments of the series. According to Juul (2011), such games present a smaller set of rules, the combination of which allows for many variations of gameplay that players cope with by designing strategies, hence we also address rule changes.

Due to the abundance of rules and available tutorials, we no longer focused on a detailed description of parts of the game, only on a basic description of the gameplay for the first instalment. However, in the research we also used the tutorials to explain the reasons that led the designers to make changes. The physical tutorials (except for the first instalment) also included a chapter for players who have played previous instalments of *Civilization*, describing the changes from previous instalments and the rationale behind them. We also made use of contemporary reviews, which, along with newspaper articles and scholarly articles, helped us understand its impact and how the game was understood by others before us (Fernández-Vara, 2014). One of the sources we drew on to explore methods for creating innovative mechanics was the memoir of the designer of the first parts of the series, *Sid Meier's memoir! A life in computer games* (Meier & Noonan, 2020).

How *Sid Meier's Civilization* Changed the Genre

The first instalment, also included in the Digital Games Hall of Fame, brought an innovation in the form of the *technology tree* (Ghys, 2012), which is still used in strategy games today. The first pioneer does not always get the credit, which in the case of the technology tree was the game *Mega-Lo-Mania* (Sensible Software, 1991). The games were released shortly after each other, so their development was simultaneous, but the creators of *Sid Meier's Civilization* had the strong brand of a proven game developer behind them, plus the games bear the name of the highly respected designer Sid Meier. Bill Stealy's marketing strategy, originally devised for a pirate RPG, ensured that at the time of *Sid Meier's*

Civilization's release it was of interest to a wider audience than just strategy game players. The innovation was thus able to sell to a much larger audience, making its impact on the genre more significant. Technology trees are evolutionary diagrams that simulate the development of technology in historical strategy games in a deterministic manner. A player cannot unlock a technology before he or she has mastered the technologies preceding its creation. The technology tree has a dual function – it represents the history of the technology, and it is also a fundamental mechanism in the game itself, and therefore plays an important role in the overall design of the game (Ghys, 2012). The technology tree was also a fold-up component of the original physical tutorials, which, according to deWinter (2016), were particularly useful if the game contained innovations in the form of mechanics, control setups, and other innovations introduced to the player. This is a prime example of how digital games have taken on an element of board games, where the player needs to know the rules in advance to plan a strategy for progression. Admittedly as Juul (2011) argues the player has a controlling authority in the digital game, ensuring compliance with the rules, but unthinking actions can create a tactical disadvantage against opponents. Knowledge of causal relationships is essential for strategic action planning, as the player's decisions may only become apparent after a longer time horizon.

In the *Civilization* series, technological advancement is essential to winning because without it the player cannot unlock additional units, buildings or upgrades and thus gain a tactical advantage over opponents. There are 71 technological upgrades in the game. *Sid Meier's Civilization* is based on mechanics using the player's cognitive abilities, which is done by deciding which way the player will build and develop civilizations in order to win in one of the following two ways: by conquering the world, i.e. by defeating all other civilizations before colonizing the universe, or by existing during the colonization of the universe. In both cases the player receives a final civilization score. Military domination represents the first way, in which the player must eliminate all other civilizations, which is also marked as difficult to accomplish in the tutorial: "You are much more likely to win by being in existence when colonists reach Alpha Centauri. Even if the colonists are not yours, the successful direction of your civilization through the centuries is an achievement" (MicroProse, 1991b, p. 23). Depending on the amount of taxes, the player can adjust how much will be invested in research. Technological advances allow the player to achieve victory in a second way – by colonizing the universe or by existing during the colonization. In the latter case, however, the final ranking is based on the overall score of the civilization.

The player chooses one of six possible forms of government: despotism, anarchy, monarchy, communism, republic and democracy. Each of these forms of government has unique effects and bonuses that affect key aspects of civilization, such as citizen satisfaction, efficiency of resource use, level of corruption, and community support. Change in government can be accomplished through revolution. During each turn, the player has access to advisors and news from around the world, allowing them to make strategic decisions based on information and recommendations. The game also implements the mechanics of environmental risks such as pollution and climate threats, which can lead to reduced soil fertility and more frequent natural disasters. Resources in the game include food, which is needed for population growth, production (in the form of shields), which is used to build infrastructure, and trade, which aids technological advancement. Some terrain types provide bonus resources to the player. One important gameplay element are the turns (rounds), which represent the time it takes to complete buildings, acquire technology, or create units. The player also controls tax policy, which directly affects investments in science and technological development within the technology tree.

There are four main types of units available in the game: settlers, military units, diplomats, and caravans. Each of these types plays a specific role in the strategy, and the

right combination of them is crucial for successful progress in the game. Settlers establish cities and serve as engineers improving agriculture and industry. They are available from the beginning of the game. Diplomats can serve as ambassadors, envoys, secret agents and saboteurs. They can gather information from enemies, meet with the King, initiate the Industrial Revolution, and bribe enemy troops. The player can create them once his civilization has mastered the technology of writing. Caravans create trade routes between cities, or routes that provide a supply of resources to build the wonders of the world. Trade routes increase profits from trade. Caravans can also contribute to the construction of the wonders of the world. The player unlocks caravans once his civilization has mastered the technology of trade. Military units in the game are used to defend and conquer cities. The game has 22 different types of military units with different special characteristics, attack, defence and movement values. New units can be created by the player after mastering new technologies.

Using horizontal and vertical movement of units on the map composed of a square grid, the player reveals the surroundings. Once per round he has the option to move each unit. Units have designated maximum movement points they can move per round. The player may skip movement. The type of terrain also influences the movement points required for movement: the game contains 12 terrain types with different characteristics. By moving a unit onto a field occupied by another civilization, the player initiates combat. The combat evaluation is instantaneous and only the winning unit remains. Apart from the terrain, the experience of the units also influenced the outcome. Barbarian units that are hostile appear randomly on the map.

Advancing *Sid Meier's Civilization II*

According to a contemporary review, the most notable change from the previous game was the modification of the combat mechanics: "One of the best improvements in *Civilization II* is the combat system. A lot of people complained (I was one of them) about the original's way too simplistic combat system" (Chapman, 1996, p. 38). The player can now monitor the status of a unit through coloured indicators: green indicates a fully healthy unit, yellow indicates damage, and red indicates a critically wounded unit (Picture 2). Damage affects a unit's mobility and increases its vulnerability to further attacks. In response to these changes, the developers have also added a unit regeneration feature. This feature is also supported by building modifications in cities, where unit regeneration can take place within a single turn. In addition, other improvements and mechanics have been introduced, and are available to the player via *Civilopedia*. For units, the authors added *hitpoints* and *firepower* to provide logical balance (MicroProse, 1996b, p. 33). Hitpoints represent the number of hits a unit must be hit with in order to be destroyed. These increase the more advanced and armoured the unit is. Firepower, in turn, represents the value of the attack that hits the target. From the second part of the game onwards, units can gain defensive bonuses, for example when placed in a fortress. Combat units have gained additional categories, and non-combat units from the first instalment have received upgraded versions in *Sid Meier's Civilization II* (settler-engineers, diplomat-spies, caravan-transport), which have special features, thus upgrading the mechanics of the expansion.



Picture 2: Unit life indicator in Sid Meier's Civilization II

Source: authors' screenshots from games Sid Meier's Civilization II (MicroProse, 1996a)

Cities also had the ability to produce units, upgrades and wonders in the previous instalment. In the newer title, the change in production specialization is penalized by a reduction in shields collected. There was also a change to terrains, which changed shape from square to diamond shaped. Rivers, which were a separate terrain type in the first game, are now integrated into the other terrains, and traversing along them reduces movement point consumption by one-third, improving movement mechanics. The developers have also added a collaboration feature that allows multiple units, such as two or more Settlers, to speed up the process of upgrading fields, thus reducing the time it takes to complete modifications. In the area of governments, there have been minor adjustments plus the addition of a new form of government – fundamentalism. The artificial intelligence (AI) of other civilizations has been enhanced to remember previous encounters and negotiations, allowing it to react based on previous experience. This aspect is also reflected in reputation, which can be penalised based on previous interactions. The Wonders of the World authors have reworked special traits and resilience. The innovativeness of the mechanics of the second part could be debated. On the one hand, the last third of the rule of thirds was omitted in the development of *Sid Meier's Civilization II*, but on the other hand, the modification of the original mechanics and the change of the rules has caused the player to gain new possibilities for action, such as tracking the health indicator and planning the next fight.

New Ways to Win in Sid Meier's Civilization III

The third instalment once again added several innovations to the game mechanics. The most noticeable of these are the ways in which the game can be won: "There are a number of ways to win a game of Civilization III, and that is one of the best features"

(Helton, 2018, para. 1). The first way is reflected in the addition of cultural points, which allowed for another way of winning through cultural dominance. In order for a player to win in this way, his civilization must first achieve a certain level of cultural advancement. Progress is gained by the player for the wonders of the world, but also by specializing in buildings such as temples and theatres. Another new way the player can win in the third part is diplomatic victory. The player achieves it by being elected Secretary General of the United Nations and thus must focus their actions on building good relations, maintaining their reputation and helping other civilizations. Again, the designers have adapted the units to this. Diplomats and spies as units have disappeared, and embassies have been added instead. According to Helton (2018), the variation in victory options is a refreshing change from other games: "Firaxis should be applauded for accommodating the different styles of game play" (para. 1). In addition to the possibility of winning by defeating all other civilizations, the game offered the possibility of winning by domination, in which the player must control two thirds of the world's territory, meaning that the other civilizations must capitulate. In addition, the player has the ability to regulate the rules and set which of the modes of victory can be achieved. Another innovative mechanic is the special advantage of civilizations, which the player can enable in the settings.

The second most significant innovative mechanic is the addition of the ability to capture units that are not defensible (settlers, builders and artillery). This mechanic changes the game dynamics significantly, as the player must also plan for a military escort, otherwise they may lose a unit, which represents a loss of precious resources. However, they can capture a foreign unit, thus gaining it without spending their own resources, which innovated the expansion mechanics.

A third distinctive combat and attrition mechanic is the ability to remotely attack some units – bombardment. There has also been a restriction of some movement mechanics. For example, catapults could not cross mountains until technological advances made it possible to build roads. The overall score of a civilization is also affected by the happiness of the population, which can be affected by diseases. Those in the new episode suffered from cities near jungles and floodplains. For movement mechanics, the river movement bonus effect from the previous game, which allowed for fast travel, has been removed. The defensive bonus that the river had falls to whoever is defending themselves during combat. Units on elevated fields can see further than usual, and additionally, from the mountains they can see the fields below the mountains, improving the exploration mechanics. Trade is now commerce – the net income from each round is split between science and treasury. Research is no longer funded by player-adjusted taxes.

Religions in *Sid Meier's Civilization IV*

Already the third expansion in the form of DLC, *Sid Meier's Civilization III: Play the World* (Firaxis Games, 2002b) added the possibility of multiplayer, but according to Ocampo (2003) this key feature was bugged and unplayable. It was not until the second expansion, labelled *Conquests* (BreakAway Games & Firaxis Games, 2003), that the long-awaited multiplayer was introduced. Of the main full games, however, not until the fourth base game in the series was a multiplayer option included. In singleplayer mode, the game remains on a turn-based system, but multiplayer uses *simultaneous turns*. The round ends after everyone finishes a round or after time runs out.

The game designers removed some time-consuming parts from previous games, specially from "less enjoyable areas" (Firaxis Games, 2005b, p. 5) such as pollution control and civil disorder. The new mechanics and parts of the game are very prominent in this instalment, as evidenced by the reactions in reviews of the game, "just when I thought I understood all the gameplay concepts and mechanics that the various Civilization games had to offer, Firaxis shows me that they're capable of re-inventing their flagship game" (Brinkhuis, 2005, para. 1). *Sid Meier's Civilization IV* introduced an innovative element in the form of religion. This has had a profound impact on the history of human civilization, and its implementation has thus significantly enriched the game world with mechanics that fit narratively into it, and in which their use makes sense. It is clear that the treatment of religion is not a conventional, proven mechanic, and thus we can directly confront Dubbelman's (2016) concerns about using conventional mechanics instead of creating some that better fit the narrative experience. Such narrative mechanics belong to a game based on the development of a civilization, but a sensitive treatment is important:

We know that people have extremely strong opinions about religions – in fact, many a war has arisen when these beliefs collide. We at Firaxis have no desire to offend anyone. However, given the importance that religions have had in human development, we didn't want to just leave them out of the game altogether; instead we have tried to handle them in as respectful, fair and even-handed manner as possible. (Firaxis Games, 2005b, p.77)

Although seven different religions are implemented in the game, in order to avoid conflicts that could arise in relation to religion, the authors decided to use religions in a respectful form, where they all have the same effects and differ only in technological requirements. The authors also mention in the manual that testing has shown them that this is the optimal number of religions. In selecting the religions, the authors proceeded according to which religions would be most familiar to their audience (Firaxis Games, 2005b). A civilization's focus towards religion adds happiness and culture points to the player, and creates cultural boundaries that can move the city of another civilization.

The game was polished with AI barbarians that could technologically outgrow the player, so it was necessary for the player to discover and destroy barbarian camps. The player gained power over foreign things. They could help weaker civilizations by sending donations, engage in war, or limit contact with other civilizations altogether. However, all decisions have consequences. The boundaries of civilizations may overlap, allowing vassals too small to develop, even with the help of their masters, and which need to ask to be absorbed by a superior civilization. In the context of building relationships, players have several new options. They can sign consent for border crossings for merchants and non-combat troops. A player can mend their relationship with a civilization which they were at war by paying reparations. The fourth instalment introduced another social policy tree in which the player invests resources to acquire new political systems.

Since the first episodes, the player has chosen one of the governments, which in *Sid Meier's Civilization IV* were replaced by civics. These were focused on different areas the player wanted to address (Picture 3), and through progression or by building specific wonders of the world would open the political systems they contained. However, the player could only activate one political system in each area. Thus, by combining bonuses and restrictions in different areas, they could completely modify the focus of the civilization. The processing of policies into a tree precluded two policies from being obtained simultaneously, e.g. piety and rationality. A change between these policies would cause anarchy, during which the player gains neither gold, production nor progress. Each of the policies contributes to the completion of the five branches of social policy that are a condition for gaining a cultural victory.



Picture 3: New political systems in Sid Meier's Civilization IV

Source: authors' screenshots from the game Sid Meier's Civilization IV (Firaxis Games, 2005a)

From Square to Hex in Sid Meier's Civilization V

Unlike the previous instalments of the series, in which the fields were square or diamond-shaped, the fields in the fifth instalment are hexagonal in shape (Picture 4). This was utilized in board games as early as the 1960s, such as the redesigned version of *Gettysburg* from 1961, and later gained prominence in the 1980s with strategy games like *Nobunaga's Ambition* (Koei, 1983) and *Military Madness* (Hudson Soft, 1989). It is by no means an innovation in the genre, but is new within the series. This change received a lot of attention and became the basis of questions for original designer Sid Meier on the Kotaku podcast. According to Fahey (2010), Meier commented that the use of hex maps was avoided due to the association with war games and board games, which take hours to lay out and prepare to play, exhausting the player before they even begin playing. In Sid Meier's memoir, he also says that they wanted to implement a hexagonal shape, which was also technically and design-wise better suited for the game, but due to the audience, they opted for squares: "hexes were considered too nerdy for the average computer user when Civ first came out, so we had to fall back on the familiarity of squares in order to get a strategy game into their hands at all" (Meier & Noonan, 2020, p. 228). The association fades with time, which is why Firaxis Games decided to apply a hex map:

Basically in a square grid, some distances are longer than others, it's not clear whether the corners connect or not. Just some issues that we've cleverly solved over the years that go away when you go to a hex-designed map. It makes the graphics look

more natural. Things like coastlines and rivers and things like that look a lot better. Combined with the one unit per tile system that is part of Civ V, it really makes battles a lot more tactical, a lot more interesting; about planning; about positioning the right unit in the right place. (Fahey, 2010, para. 10)



Picture 4: One unit per field and a hex map in Sid Meier's Civilization V

Source: authors' screenshots from the game Sid Meier's Civilization V (Firaxis Games, 2010)

In addition to modifications to the hexagonal shape of the grid and significant changes to the sound, *Sid Meier's Civilization V* introduced city states, which are small, city-specific civilizations that take a player-neutral stance. The player can support them and improve relations, they can occupy them, or they can ignore them. When establishing relations, they provide a bonus to the player according to their orientation: cultural orientation adds culture points, naval orientation adds food to friendly cities, and military orientation adds free military units. City states replicate the era of the main civilization and follow its technological advances. To establish relationships, the game adds points of influence. These are influenced by the player by not trespassing or declaring war; conversely, they are increased by gifting units, providing gold, completing missions that other civilizations declare, or deploying spies. Each round, influence points are adjusted depending on the player's actions. Through diplomacy, the game has made it possible for civilizations to negotiate research agreements that provide both signed civilizations with a research bonus. The game has also added natural wonders, which are created by nature and add benefits to civilizations when discovered. In terms of combat, a 'one unit per field' rule has been added.

New Tactical Bonuses in *Sid Meier's Civilization VI*

In *Sid Meier's Civilization VI* a new victory option has been added – religious victory. To achieve it, the player must establish a religion and get it to a point where most cities in the civilization accept that religion. Religious units have added theological combat, in

which a unit can destroy another unit. The winner gains power points for surrounding cities with the loser losing points. Social policies have gained their own tree. Cultural victory has also changed, which now affects tourism. A player achieves it if his civilization is visited by the majority of tourists from other civilizations. In addition to building and expanding cultural buildings and acquiring important cultural figures, diplomacy and international trade are also affected. *Great persons* are a new mechanic that the player works with. There are nine persons for each era: generals, admirals, engineers, merchants, prophets, scientists, writers, visual artists and musicians. The player recruits them in exchange for points earned each round by constructing specific buildings, conducting research, holding festivals, as well as recruiting them for gold and faith points.

The expansion mechanics have changed significantly, focusing on building in cities. Wonder construction takes place not just in the city but on separate fields and is limited by terrain requirements for buildings. Other buildings are divided into 17 districts: city centre, campus observatory, theatre square, holy site, encampment, commercial hub, harbour, industrial zone, preserve, entertainment complex, waterpark, aqueduct, neighbourhood, canal, dam, aerodrome, spaceport, and government. This division creates room for neighbourhood mechanics and specialization in specific strategies, e.g. cultural.³

Governments have a new three-part system. In the first part, the player chooses a government, and each government has specific card counts for the areas the cards target, in addition to bonuses and restrictions: military, economic, diplomatic, and unlimited in the form of jokers. These are obtained by the player from the aforementioned social policy tree. As the game progresses, the player acquires cards with new policy types and combines them in accordance with the chosen strategy. The technology tree focuses on technological advances, but also the social policy tree has received a 'eureka' bonus, that accelerates the discovery of a technology or policy (Picture 5). This is a boost that is activated if the player meets predetermined conditions such as building a specific building, encountering another civilization, killing barbarians with a specific unit, etc. This boost manifests itself as a 50% reduction in the number of rounds required to acquire a new technology.



Picture 5: Social sciences and cards in Sid Meier's Civilization VI

Source: authors' screenshots from the game Sid Meier's Civilization VI (Firaxis Games, 2016)

3 Remark by the authors: In order to maintain the authenticity, the district names have been left in their original American English form, as this is the format in which they are used in the game.

The worker's unit has been replaced with a unit of builders, who, although they build instantly, have their number of buildings capped at 3. According to Stapleton (2016), this was a designer's move that solved a problem present in previous instalments where the player was digging up too many of these units on the map, and no longer had anything to modify. The unit-per-field rule from *Sid Meier's Civilization V* was modified to avoid filling up the map and creating congestion through compromise. The designers created the possibility of combining two identical units into a formation after mastering technological advances.

Discussion and Conclusion

The *Civilization* series is known for its high level of replayability, which allows for standardization of the core game mechanics, as is common in some high-cost titles (cf. Rousse, 2004; Pravdová & Cihlářová, 2024), and new parts could have been added to the content in the form of new civilizations or improved visual and auditory elements. However, there was also the possibility that the series would introduce new mechanics as well. According to the rule of thirds followed by the series designers (Meier & Noonan, 2020), when designing mechanics, they focused on retaining existing players but also attracting new ones, while trying to keep core gameplay elements, improve them and add new ones. Our study focused on exploring the innovations that the series has brought to the strategy game genre and in the game franchise.

Sid Meier's Civilization brought the game mechanics of the technology tree to wider awareness, which deterministically modelled the technological progress of civilizations (Ghys, 2012). Although this mechanic had already appeared in board games and the digital game *Mega-Lo-Mania* had introduced it only a few months earlier, it cannot be said to be directly inspired. Rather, it was a parallel development and remediation of older game concepts into new forms. Given the publisher MicroProse's wide fan base of games, the innovation was attributed to the later released *Sid Meier's Civilization*. These mechanics became the basis for the entire series and were further developed in subsequent instalments. Each sequel in the series brought new mechanics or modified rules that provided players with new strategic options and game actions. In *Sid Meier's Civilization II*, for example, the combat system received a significant upgrade, making it more complex and tactically challenging (Chapman, 1996). Players could track unit life indicators, which led to the addition of more strategic elements to the game.

A significant innovation was brought about by *Sid Meier's Civilization III* with the ability to win through cultural and diplomatic dominance, which greatly expanded the ways in which the game could be won, differentiating it from other games (Helton, 2018). *Sid Meier's Civilization IV* was revolutionary in its introduction of religious mechanics that provided players with new options in cultural expansion, thus abandoning the series' strictly military framework and adding additional civilizational elements. The map change and related mechanics in *Sid Meier's Civilization V* in turn provided new strategic challenges, while *Sid Meier's Civilization VI* continued to innovate with theological warfare and a new approach to governments, where players could combine various bonuses using game cards. The authors not only frequently tested and applied the principle of the 'rule of thirds' (Meier & Noonan, 2020) when developing game mechanics, but also worked extensively with feedback from reviewers and players themselves. There is also a clear drawing of inspiration from cultural realities, which contributed to deeper immersion and increased the narrative consistency of the game. When deciding to implement various suggestions, the developers took into account the preferences of the player base and placed emphasis on

making the game as accessible as possible to a wide audience. This approach is confirmed by Meier and Noonan (2020) when explaining the reasons for introducing the more practical hexagonal grid in the fifth instalment of the series rather than in the earlier instalments.

From its first instalment to its latest, *Civilization* series has introduced significant innovations in gameplay mechanics that have continually pushed it forward and brought it closer to a wider audience. With the upcoming release of *Sid Meier's Civilization VII*, there is an expectation that the series will once again deliver innovative mechanics. Given the decline in interest in strategy in recent years, which was documented by Yee (2024), it is the seventh instalment that is a great opportunity to see just how much of an impact the *Civilization* franchise has had on the gaming industry and how it can attract new players. The innovativeness of the mechanics in the new instalment may be key to reaching a wider audience that may not be familiar with the franchise. Thus, the developers are challenged not only to retain long-time fans, but also to bring in new elements that will appeal to a new generation of gamers. The success of *Sid Meier's Civilization VII* could reaffirm the series' dominant position within strategy games, while demonstrating that even high-budget game franchises can deliver new and exciting innovations. Yee's (2024) motivational model showed that more and more players prefer more reactive/spontaneous gameplay and simple decision-making with few underlying parameters to consider. This is a natural and logical outcome of the establishment of casual gaming in mass culture, which Juul (2009) referred to as the 'casual revolution'. We therefore assume that any innovation must be mainly directed towards innovating mechanics by simplifying and speeding them up, despite the fact that the series has so far introduced new complex mechanics enriching gameplay options that have received a positive reception.

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