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# GAMEHEARTS

## State-of-the-Art Report 1



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## Executive Summary

This report is prepared as a part of the tasks assigned to the WP3 of GAMEHEARTS project, and its goal is to identify and verify the mechanisms of value transfer and value co-creation by the European Video Game Industry Ecosystem (EVGIE) and Cultural and Creative Industries (CCI) in the context of cultural audiences and the increase of multidimensional inclusivity.

To ensure the maximum comprehensiveness and data diversification, the report was prepared based on diversified sources of secondary data: (1) academic literature, (2) industry reports, and (3) publicly available case study materials. All of the carefully collected secondary data has been analysed using thematic centric analysis (a detailed research design is described in sections 3.2. and 4.2.).

To reduce the bias of subjectivity, the content of the report went through intra-team cross-checks but also it was discussed with two industry experts and reviewed by one independent member of another national team working under GAMEHEARTS project. All their insights and recommendations were implemented.

The structure of the report is as follows: First, we provide a general overview and introduction where we describe the goals and overall research design. Second, we present the systematic literature review supplemented by extensive analysis of industry reports. We describe both – quantitative results and qualitative findings supplemented by a detailed description of the research procedure. Third, we discuss the inspiring case studies that emerged within our data analysis with the cross-case analysis to grab the broader context. It is worth noting that secondary data derived from the analysis of academic literature and industry reports were thematically integrated. This means that the same thematic issues were first separately coded and analysed for each of the two sources and then collectively presented in thematically appropriate sections of the report describing the results (sections 3.4-3.5). Secondary materials forming the basis for comparative case study analyses were collected separately, analysed independently, and subsequently compared. The results and conclusions drawn from this process were then synthesized to formulate generalized outcomes. Finally, we outline the main conclusions and recommendations that focus on the main insights derived from these diverse data and identify the missing spots regarding the knowledge and research in the field, including various contexts (i.e., geographical, social, cultural, and methodological).





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## 1. Project Summary

In line with its objectives, the GAMEHEARTS<sup>1</sup> project focuses on exploring the opportunities, potential, and pathways for enhancing the value of the European Videogame Industry Ecosystem (EVGIE). This focus extends beyond economic value, incorporating broader social and cultural dimensions. Particular attention is given to identifying new, or better utilising existing, developmental trajectories for the EVGIE, with a central emphasis on fostering collaboration - specifically cooperation oriented towards co-creating value and co-innovation, as well as enabling value transfer both within the EVGIE and across the wider Cultural and Creative Industries (CCI).

The main goal focuses on maximization of the value of the EVGIE within the broader social context of the CCI. Nonetheless, its achievement will be based on reaching five, more detailed objectives (referred to in section 2.1.), which correspond to seven work packages (WP), including five research WPs: WP2: Stakeholder workshops, WP3: Videogames industry ecosystem, WP4: Governance challenges and opportunities, WP5: The impact of videogames in shaping a more inclusive society, and WP6: Ludic experiences build & audience research. The project is run under a consortium of 5 universities (i.e., Universities of Salford (UK), Tampere (Finland), Vienna (Austria), Breda University of Applied Sciences (Netherlands), and Wroclaw University of Economics and Business (Poland)) and industry partners (i.e., Ubisoft (France), Imperial War Museum (UK), Manchester City (UK), and London Symphony Orchestra (UK)).

### 1.1 WP3 Summary

This State-of-the-Art Report 1 is the first deliverable produced under WP3: Videogames Industry Ecosystem (D3.1. State-of-the-Art Report 1). According to the project's framework, WP3 will concentrate on the identity, culture as well as best practices established by EVGIE to grasp the picture on how to engine the growth of the entire ecosystem aiming to contribute to several areas such as the economic growth, job creation, physical and mental well-being, and social and cultural cohesion. More specifically, WP3 encompasses research activities that integrate desk-based research (the findings of which are presented in this report) with fieldwork investigations. The results of these fieldwork activities will be covered in subsequent deliverables, namely D3.2 (DtThons Summary) and D3.3 (Report & Recommendations for Video Game Developers).

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Project's website: [gamehearts.eu](https://gamehearts.eu)

Project's LinkedIn profile: <https://www.linkedin.com/company/gamehearts-research/>





Within the GAMEHEARTS project, WP3 adopts an industry perspective, focusing on the videogame ecosystem and CCI. Our research is structured into five stages:

- 1. Exploratory Research:** Conducting a discussion panel to gather initial insights (implemented as a part of WP2<sup>2</sup>).
- 2. In-Depth Literature Review:** Analysing academic literature, industry reports, and case studies of successful cooperation linking games/videogame ecosystem with CCI to identify key trends, gaps, mechanisms of value co-creation, co-innovation, and value transfer related to cooperation within the videogames ecosystem and CCI.
- 3. Quantitative Research:** Surveying European game developers to assess the extent to which co-creation relationships and co-innovation relationships are utilised by game developers as well as test their impact on developers' innovativeness.
- 4. Exploratory and Confirmatory Qualitative Research:** Conducting in-depth individual interviews with game developers, other representatives of the videogame ecosystem, and representatives of CCI as well as focus group discussion to deepen understanding in a given field, outline improvement recommendations, and validate findings generated earlier.
- 5. Exploratory and Confirmatory Design Thinking Workshops:** Organising design thinking marathons to collaboratively explore and refine innovative solutions related to cross-industry cooperation linking game developers with other actors of EVGIE and representatives from other CCI.

This report refers to the second research activity focusing on the evaluation of the current body of (academic and industry) knowledge through secondary data analysis.

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<sup>2</sup> The outcomes included in D2.2 but as we had a lot of raw data, this was used also to prepare an article entitled What are the Drivers, Barriers, Mechanisms, and Anchors of cross-industry cooperation? The Perspective of the Video Game Industry Ecosystem. Games & Culture, DOI: 10.1177/15554120251317276 (paper just recently accepted for publication) and conference poster (available in open repository: Game On! Unlocking Synergies Between Video Games & Creative and Cultural Industries- Klimas et al., 2024).





## 2. INTRODUCTION TO THE REPORT

The GAMEHEARTS project's orientation towards EVGIE development is grounded in the premise that continued - and potentially accelerated - growth can yield significant benefits, including the creation of new jobs, improved physical and mental well-being, and enhanced social and cultural cohesion.

As we mentioned above, the project is structured around 7 WPs and several objectives, including one overarching goal and a series of specific objectives.

### Main Goal

To maximise the value of the EVGIE within the broader social context of the CCI.

### Detailed Objectives

1. Understanding the Role of EVGIE: To gain a comprehensive understanding of the current and potential contributions of EVGIE to economic growth, job creation, physical and mental wellbeing, and social and cultural cohesion—both directly and indirectly.
2. Policy Analysis: To critically examine existing EU, European, and broader social policies, and explore the opportunities, risks, and cultural implications of the EVGIE.
3. Pathways for Collaboration: To identify mechanisms through which enhanced collaboration and co-creation between the EVGIE and other CCI sectors could foster greater shared value and growth.
4. Improving Accessibility: To increase accessibility to heritage, live music, and sports through constructive partnerships that integrate EVGIE practices and technologies, offering more inclusive, engaging, and empowering cultural experiences.
5. Policy Recommendations: To provide actionable recommendations to the EU and other European policymakers to support sustained and ethical innovation and growth in the EVGIE.
6. Strategic Recommendations for the EVGIE: To propose strategies that enhance organizational innovation within the EVGIE through co-creative relationships with other CCI sectors, thereby improving its competitiveness and capacity for innovation.





### **Scope of This Report – GAMEHEARTS project perspective**

This report, grounded in a triangulation of secondary data (academic literature, industry reports, and publicly available case study materials), primarily addresses:

- Detailed objective 1: Demonstrating the importance and trends shaping the ecosystem surrounding the videogame industry.
- Detailed objective 3: Identifying mechanisms of value co-creation, value transfer, and co-innovation between the VGIE and other CCI sectors, along with the positive and negative effects of intra- and inter-industry collaboration.
- Detailed objective 4: Exploring the understanding and significance of inclusivity, accessibility, and marginalization within the context of gaming, the videogame industry, and broader cultural domains.

As such, this report contributes to advancing the GAMEHEARTS project toward achieving its overarching goal. Additionally, the report - and the analyses of already existing academic and industry knowledge upon which it is based - aims to support conducting the research outlined in the GAMEHEARTS project, particularly WP3: Videogames Industry Ecosystem. It also seeks to clarify the research framework for the qualitative and quantitative field studies planned for subsequent project phases.

### **Scope of This Report – WP3 perspective**

Within WP3, four specific objectives were established. The first of these is to identify and verify the mechanisms of value transfer and value co-creation by the EVGIE and CCI in the context of cultural audiences and the increase of multidimensional inclusivity (as designated in the project proposal, Objective O3.1), which is extensively addressed by this State-of-the-Art Report 1.

Importantly, given the critical role of innovation (EGDF, 2022) and innovativeness (Plum & Hassink, 2014; Klimas & Czakon, 2018; Handrich, Heidenreich & Kraemer, 2022) in the functioning of both the broader videogame industry ecosystem and its key actors - namely, game developers (Klimas & Czakon, 2022) - the analyses underlying this report also examine and present identified mechanisms of innovation co-creation (i.e. co-innovation). These mechanisms are integral to understanding and fostering the dynamic evolution of the ecosystem, with a particular focus on their implications for cooperation and value generation.





### Scope of This Report – Deliverable 3.1 perspective

Following grant description this report considers the existing knowledge and models of understanding of industry practice in EVGIE and CCI, and examples of cooperation between these sectors. Thus it provides the basis of WP3, which will develop new knowledge building on what is already known. This report then not only helps underpin WP3, but, we hope, it also informs the exploration of new models of cooperation in WP6, and the lessons learnt here will then be disseminated through WP7.

### Scope of This Report – time perspective

An **essential aspect that must be strongly emphasised** before reading the substantive content of this report is **the temporal scope of the analysed materials** collected from secondary sources. For the scientific publications reviewed, no lower time criterion was imposed, and the literature database includes works published between 2003 and 2024 while the core data analyses were run between July and August 2024. As for industry reports, due to the dynamic nature of sectoral conditions, the focus was on reports (verified or recommended by industry experts) from the last five years (i.e., those published between 2020 and 2024), while the core data analyses were run between August and October 2024. Finally, regarding the analysis of case studies, no lower- or upper-time limit was applied to the secondary materials analysed. However, it is worth noting that this section relied on materials available online during the period of source material collection and case study analysis, primarily in the third and fourth quarters of 2024.

The computer and video game industry (VGI) is highly dynamic (Cappello et al., 2024), or even hyper-dynamic (Klimas & Czakon, 2018), meaning that the sector, its operating conditions, and its developmental frameworks change very rapidly. Consequently, the content presented and discussed, as well as the conclusions drawn from the qualitative and quantitative analyses, are sensitive to the passage of time and may become outdated relatively quickly.

## 2.1. Structure of the report

The structure of this report is determined by its core substantive assumptions. Nevertheless, to ensure methodological and cognitive clarity it follows a chronological framework that includes:



- Justification for the research focus (section 2.2) covering already existing trends conducive to inter- and cross-industry cooperation.
- Description of desk-based mixed research methods used at this stage of research investigation (section 2.3).
- Understanding of key terms relevant to the report and key acronyms (section 2.4).
- Research design and findings of the analysis of academic literature and industry reports (section 3).
- Research design and findings of case study analysis, focused on successful examples of collaboration (section 4).
- Summary and main conclusions (section 5).

The main body of the report, oriented toward achieving Objective 3.1, primarily focuses on the results of an in-depth domain-based review (Paul, Lim, O’Cass, Hao, & Bresciani, 2021) of existing academic and industry knowledge (section 3). Using thematic analysis (Kraus et al., 2022), this section examines value co-creation, co-innovation, value transfer, the positive and negative outcomes of collaboration, inclusiveness, and the impacts of cross-industry cooperation.

Another key component, from the perspective of the research framework, is section 4, which presents and analyses a collection of identified case studies of successful inter- and cross-industry cooperation. This includes both 3 major cases (i.e., *Kingdom Come: Deliverance*, *This War of Mine*, *The Assassins`s Creed*) and 6 minor cases (i.e., *My Memory of Us*, *The Thaumaturge*, *Cyphers Game*, *Hellblade: Senua’s Sacrifice*, *Eternal Sonata*, *Game Music Festival*), accompanied by a synthetic comparative analysis of their characteristics and outcomes.

## 2.2. Reasoning for exploration of the topic

As we have opted for identifying the drivers enhancing the growth of the entire EVGIE, based on the analysis of secondary sources (more details in the methodological part – section 2.3) we have distinguished **four relevant trends** which stimulated (and may continue to stimulate) cross-industry cooperation in which game developers engage. Those trends refer to:

- **Progressive and ongoing digitalization** – systematic, deepening, and accelerating digital transformation of a wide range of activities and processes as well as socio-cultural interaction processes and platforms.





- **Interactive promotion of creative content** - evolution of distribution methods and creative content presentation aimed at maximising customer reach and leveraging socio-cultural impact.
- **Video game culture dominance** – the increasing impact of video games and video game culture on shaping digital culture and contemporary cultural patterns but also social paradigms.
- **Technological race** – ongoing and progressive intensification of cross-industry collaboration in response to technological advancement and growing innovation complexity.

It should be noted that besides the above, an additional trend, which, while not emerging directly from the analysis of the gathered secondary material, appears to be currently taking shape and becoming evident in changes to the business models of game developers, is the trend toward the **diversification of revenue streams** which sometimes also entails **market diversification** (however not in the geographic sense, as the video game industry is inherently global, but rather in the product sense, such as entering the freemium segment or even branching into entirely new creative industries, like comics, as exemplified by CD Projekt Red and the expansion of *The Witcher* brand). Considering the financial and employment crisis currently affecting VGI (Lee et al., 2024), it can be assumed that efforts towards revenue and market diversification will intensify. This diversification is likely to take a related, cross-industry character, which could further strengthen the need for cross-industry collaboration.

### 2.2.1. Progressive and ongoing digitalisation

Beyond their financial value, video games have become a hegemonic cultural form with a growing impact in shaping broader culture and helping digitalisation and gamification processes. Brennen and Kreiss defined digitalisation as “*the way many domains of social life are restructured around digital communication and media infrastructures*” (2016, p. 1). Such phenomenon has permeated our everyday and most mundane activities and reshaped our culture (Ørmen et al., 2021). In such processes, many aspects of our society can be understood through the prism of video games. As Muriel and Crawford argue, our everyday life has been “*colonised by the logic and mechanics of video games [...] fields of economy, work, leisure, education, health and consumption, are permeated by the rationale that governs video games*” (2018, pp. 20-21). Indeed, gamification aspects can be found everywhere:





from swipes and the rush of accruing matches on dating apps (Bandinelli, 2022; Garda & Karhulahti, 2021) to playful fitness apps. Such examples are part of what Fuchs et al. explain as a “*general process in which games and playful experiences are understood as essential components of society and culture*” (2014, p. 7).

As part of digitalisation processes, the VGI has influenced various sectors, from architecture to healthcare and automobiles. A recent report by Ukie (2023) depicts how this growing spillover has enabled different sectors to boost innovation and total output, improve product designs, enhance safety and training efforts, enrich customer experiences, and preserve culture. For instance, the pharmaceutical industry has adopted video game technology, using video game engines to facilitate drug discovery and development across multiple disease areas. In a different example, real estate developers and architects now use video game engine video rendering technology to create interactive digital designs, aiding in project development and construction.

### **2.2.2. The need for interactive promotion of creative content to reach a broader audience and make a greater social/cultural impact**

The EU’s video games industry generates various economic and social spillovers, with video games becoming platforms to promote creative content from other cultural and creative sectors, from fashion and design items to live concerts (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 10). Promoting collaborations between local video game hubs and established sectors in technology and culture fosters innovation, IP reuse and specialisation (WIPO, 2024, pp. 121-122). For instance, the convergence of video games with film and television has resulted in a rich, interconnected media landscape.

In general, when we write in this report about a successful movie or a TV show somehow connected collaboratively with VGI, we consider the success as indicated by the financial profit (i.e. the box office in the case of a film). If, in a given paragraph, we want to point out that the movie underperformed financially (i.e. flopped) but has been well received by the critics and/or audience by its artistic value, we will specify this. Nevertheless, as we know, in





the case of video game adaptations, the situation is, to date, reversed. Critics pan movies that could still be well received by the audiences and, therefore, successful financially. These are marked by successful franchises such as *The Super Mario Bros. Movie* (2023), the second highest-grossing film of the year, and critically acclaimed TV adaptations like *The Last of Us* (premiere in January 2023 via HBO Max streaming platform; the premiere of the second season is planned in 2025). Moreover, there are also nice examples of franchise-based TV series based on the video game universe, while not being direct adaptations but rather a medium enabling the expansion of the existing universe in a new way, often reaching a broader audience (including entirely new, non-gaming audiences) like in the case of tv series *Fallout* (premiere in April 2024 via Amazon Prime Video streaming platform; second season has been announced just recently).

Within the last few years, we have enjoyed an ever-increasing number of successful video game IP adaptations. Nevertheless, we must remember that game adaptations into movies were almost always a critical failure, starting with *Super Mario Bros.* from 1993, which is as much the first significant attempt to adapt a game to the big screen, an artistic and commercial failure and also a memorable example of the pitfalls of disregarding the source material (Sarmiento, 2020). However, while the infamous “*video game movie curse*” appears to be lifted thanks to more recent successes, most attempts at game adaptations are commercial and especially artistic failures when judged by critics, as we can see by analysing the Rotten Tomatoes rankings for such titles (Rotten Tomatoes, 2024). It is worth noting that despite relatively poor critical reception, some titles had good audience ratings. Over the years, some become so-called “*cult classics*”, like *Mortal Kombat* from 1995 (Romano, 2021) or a similar (also a fighting game adaptation) *Street Fighter* from 1994 (Zotomayor, 2024), which have been a commercial success and are still well-known and often treated with nostalgia. We can argue that the one that broke the charm and scored positive reviews from critics was *Detective Pikachu* from 2019 (Rotten Tomatoes, 2024). However, for the last few years, the highest-rated video game adaptation was *Werewolves Within* from 2021, produced by Ubisoft Film & Television using its video game IP. It was Ubisoft`s second video game-based movie after the unsuccessful 2016 *Assassin`s Creed*. While the *Assassin`s Creed* franchise successfully transferred value to other media, its movie adaptation from 2016 utterly failed to transfer the double narrative of the games (intermingling historical settings and characters with a science-fiction subplot) into a coherent movie, even if some aspects of its production have been praised (Ehrlich, 2016).





Conversely *Werewolves Within* is strongly derived from the source material; the original 2016 VR game was not so popular; therefore, changing the premise was justified and successful (Fahey, 2021). *Werewolves Within* held the highest-rated critic score on Rotten Tomatoes for a film based on a video game (Shaefer, 2021) until it was surpassed late in 2024 by *Sonic the Hedgehog 3* (Rotten Tomatoes, 2024).

It is hard to decide what affects the success or the failure of adapting a video game into a movie. We can argue that it is always a unique case, depending on the specific player base and the movie's target audience, which rarely covers the same groups, as games and movies are inherently different media. Balancing fan and general audience appeal appears to be the crucial part of the adaptation. The first trailer for the upcoming *Minecraft* movie has gained strong criticism for missing this balance (Ulatowski, 2024). Nevertheless, forecasting the success of game-inspired movies is extremely hard, considering the various difficulties of adaptation in different game genres. When discussing video game movies that were unsuccessful, we have to mention the German filmmaker Uwe Boll, who loosely adapted multiple video games into movies. According to Rotten Tomatoes, none of their movies were successful (Rotten Tomatoes, 2024), and they have extremely low rankings. It is sometimes argued that those movies were only possible thanks to the unique tax law loophole effective at the time in Germany (Staff, 2009). While Boll's persistence is unique and his role in the video-game adaptations memorable at least, the number of poorly received Boll's movies probably also impact the general perception of the lousy quality video-game movie adaptations.

There are inspiring success stories, like the recent *Sonic the Hedgehog* series, with the critically acclaimed *Sonic the Hedgehog 3* from 2024, being not only a truly and utterly successful video game series (Sega, 1991-present) adaptation with a faithfulness to the source material not seen before in a life action adaptations but also a genuinely good movie, with critically acclaimed comedic performance by Jim Carrey and superior voice acting by Keanu Reeves (Gleiberman, 2024). Those, however, must not conceal that there are still spectacular failures, like *The Borderlands* (2024), panned by critics and viewers (Loughrey, 2024). So, it is safe to say that while there should be a new attempt to adapt games into movies and TV series, the creators have to be cautious as it is still more possible to fail in such an attempt than succeed. However, with some cautious optimism, we can consider the recent commercial success of the (children-oriented) *The Super Mario Bros. Movie* from 2023, which is the next and highly





successful attempt to adapt the famous Italian plumber Mario and his universe into a movie, after the failed attempt in 1993, and this time having a phenomenal box-office, becoming the highest-grossing film based on a video game after just one week of release (Delatto, 2023), as well as being in the second highest grossing 2023 movie in general, after *Barbie* and before *Oppenheimer* (Rubin & Land, 2023). The understanding of the source material and respect for the fans were now appreciated by the audience, even if not entirely by the critics. What can we say after those three decades of adapting games? After so many failed attempts, we still cannot expect success by default. Currently, we also see that the adaptation of games or game-related IP is more successful in the form of TV series than stand-alone movies. The reasons for the TV series being more convenient for game adaptations than movies should be further researched, looking for the good practices to adopt by the movies.

This cross-media pollination demonstrates the importance of the VGI in expanding the narrative and artistic possibilities available to creators and audiences. It underscores the importance of video games as a cultural touchstone, shaping contemporary storytelling and entertainment (MacDonald, 2023; Martens, 2023). In other examples, video game exhibitions, museums, festivals, and tournaments have also proliferated in recent years, showcasing the importance of video games in fostering community engagement and providing new career opportunities (Eklund et al., 2019; Taylor, 2012; Witkowski, 2012). For instance, the growing number of exhibitions and museums featuring video games highlights their role in preserving and enhancing cultural heritage (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 153).

Moreover, a fitting example is seen in the music industry, and orchestras and philharmonics in particular, which are increasingly hosting symphonic concerts focused on video game music (e.g., *Game Music Concert*, *Game Music Fest*), attracting entirely new audiences. Furthermore, when it comes to the music sector, the growing role of music and sound in games has to be highlighted. Indeed, their role has long surpassed that of mere background accompaniment, and thus, developers are more prone to cooperate with musicians and orchestras. At least six aspects of music usage directly impact games' realism and players' experience: an atmosphere layer, sounds of creatures or objects, a voice layer, a musical layer, and user feedback (Schütze, 2003).





In the same vein, we also have multiple trends in video games that create new spots for more cooperation with providers of more sophisticated cultural content. Alternate Reality Games, a form of narrative often involving various media and gaming elements to tell a story that might be affected by participants' actions, have been used in the marketing, and promoting entertainment-related products such as films, computer games and music (Connolly et al., 2011, p. 1389). It is similar to the contemporary transmedia approach when gaming franchises span through different media to engage the player in various forms of entertainment (games, books, movies), to not only learn the whole story (or "*lore*") but also magnify the experience, when games provide more engaging action than books. On the other hand, books or TV Series offer more information about the game-related characters and their relationships. It is worth noting that while the industry is changing rapidly, the most popular game franchises are on the markets for a decade or even (much) longer and have dedicated communities of players. It is essential to be aware of those "*gamer cultures*" when creating collaboration between sectors, including the increasing role of the gaming community and its impact on both the game production and its financing (i.e. fundraising campaigns). The engagement of players will favourably influence the industry's growth (Belyaeva et al., 2022, p. 344). In the context of virtual communities involving actors from different CCI fields, including creative individuals, there is little control over what enthusiasts may create, and this has the potential to undermine brand values. On the other hand, some developers actively maintain and encourage direct dialogue with the community (Harwood & Garry, 2014, p.148). This shows the importance of VGIE-related research not only with the game developers but also with other groups of stakeholders.

Having mentioned the influence of the VGI on other cultural and creative sectors and society as a whole, it is essential to acknowledge that it has become noticed by public institutions and policymakers. Indeed, the "*role of games*" is evident not only at the European Union level, with programs such as Culture & Creativity and Research and Innovation on Cultural Heritage and CCIs, but also at the national level. For instance, Poland's Ministry of Culture and National Heritage provided targeted support under the Creative Industries Development program for game developers who emphasise culture, cultural norms, and national heritage in their games. Nevertheless, one should note that such a positive impact is not always celebrated. The relationship between traditional CCI and emerging digital industries remains tenuous, often marked by mistrust and misunderstanding. Sometimes, video games are





viewed merely as sources of technological innovation or intellectual property to be adapted, while new technologies are frequently seen as disruptive to traditional media industries (The Economist, 2023). For instance, in 2016, The Football Association Premier League Executive Chairman Richard Scudamore identified video games and social media as significant threats to maintaining young people's engagement with football (Lawrence & Crawford, 2019). In light of such suspicion, there is still a need to examine and showcase the different contributions the VGI has to society and how it transforms other sectors and industries. Remaining within the sports industry, it is worth noting the current discussion toward including e-sports in the roster of events at the Olympic Games (OG). On one hand, the International Olympic Committee (IOC) recognises that to appeal to younger generations in the future, the Olympics will need to incorporate e-sports competitions featuring players competing in competitive, sports-simulation games (Grohmann, 2020). It means that the inclusion of e-sports is considered a new source of customers (i.e., OG visitors, people watching OG via television or the Internet). On the other hand, no definitive decision has been made regarding when e-sports will officially be included in the OG format. Furthermore, IOC leadership has already indicated that some popular sports-simulator titles will be excluded due to issues related to real-world or virtual violence and brutality, including both verbal and physical aggression (Orlando & Parry, 2018; Grohmann, 2020). It is also noteworthy that the IOC's positive stance on incorporating e-sports into the Olympics could encourage more national and international sports federations to develop their own games. Such endeavours would require close collaboration between sports federations and video game developers (VGD).

### 2.2.3. Popularization of video game culture and culture-shaping role of games

When studying the value of video games and the industry, it is crucial to consider how they create a unique culture while mirroring our broader culture. Muriel and Crawford acknowledge these two facets and define video game culture as "*the institutionalisation of video game practices, experiences, and meanings*" (2018, p. 5). They, however, recognise that culture is not homogenous or monolithic, "*video game culture is diverse, complex, and constantly evolving*" (2018, p. 2). Video game culture co-constructs the broader cultural sphere and serves as a lens for analysing broader issues in contemporary society (ibid).





For instance, video games have been traditionally considered a gendered hobby dominated by men. Indeed, given the global data from Newzoo approximately 72% of women play video games and 45% of gamers are women<sup>3</sup> (Cook, 2024). Moreover, although data shows an almost even gender split among gamers, women are frequently ignored or belittled non-women gamers and the industry alike (Chess, 2017; Cote, 2020). This disparity is evident because games are created mainly by men as women comprised only 24.4% of the European VGI in 2023 (Video Games Europe, 2024, p. 15). However, this is a good place to elaborate on the fact that there is a significant limitation of the research and statistics done with surveys accepting only the binary option to choose the gender by the respondent, either man or woman. It is challenging and limiting because this binary framework does not fully capture the complexities of diversity in modern society. While such research and data are fully viable. The gender-related statistics in this report are taken from secondary sources, quoting reliable sources and providers, like Newzoo, ESEG and Video Games Europe, especially in paragraphs related to women as VGI employees and gamers. We point out this limitation to clarify this and show the importance of incorporating appropriate options for the respondents to have respect and freedom in describing gender. Such an approach reflects the socially just and progressive values and the need to conduct modern research according to the actual state of contemporary European society. This should be considered by both the VGI, researchers, and policymakers. It should be promoted to avoid the limitation of this gender categorisation by reducing representation and, consequently, equity, diversity, and inclusion of minorities.

When it comes to minorities, studies also indicate the marginalisation of gamers based on ethnicity or sexuality (Gray, 2017; Ruberg, 2019) as the industry continues to be dominated by white employees (e.g., 90% in the UK VGI, as presented by Ukie, 2022). At the same time, there is evidence to suggest that inclusive video game design can help in reducing different types of exclusion, thus leading to higher inclusion of women (Mozelius et al., 2022), low-income or ethnic groups (Dawson, 2014), and people with mental or physical disabilities (Heron, 2012; Malinverni et al., 2017).

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It is worth noting that the participation of women in gaming is a highly complex issue, strongly influenced by the type of game and the platform used for playing. For instance, following different statistics (e.g. Cook, 2024; Try Evidence Research Team, 2022), women usually dominate in games such as farm/family simulators, where they constitute up to 70% of players, while their representation in tactical shooters is minimal; with only about 2-3%; around 70% of PC gamers are men, whereas women often outnumber men on mobile gaming platforms (e.g. . Nintendo Switch, for example, is particularly popular among women).





Video games can also reflect and raise current political and social discussions through narratives and character representation. For instance, video games like *Papers, Please* and *This War of Mine* address complex social issues such as immigration and war. These themes invite players to ponder individuals' struggles and ethical dilemmas in challenging situations (Formosa et al., 2016; Muriel & Crawford, 2018). Moreover, recent pushback against the introduction of ethnically and sexually diverse characters in popular franchises like *The Last of Us* (Byrd, 2020; Tassi, 2020) and *Assassin's Creed* (Kim, 2024; Murray, 2024) reflects a broader social discourse regarding diversity and cultural openness. Such controversies highlight the importance of representation while also showcasing resistance to what some perceive as “woke” culture.

In this context, there is also a significant issue of the so-called “woke-washing” when companies or other organisations use rhetoric signifying their adoption of socially just or progressive values to spare “woke” (literally socially aware or progressive) is no substantial change in the company practices or values or even there are blatant instances of improper actions or misconduct. This term is rooted in a similar and older “green-washing” rhetoric and actions. Such superficial commitment is usually profit-driven and this discrepancy between words and actions results in eroded trust. Such issues can be seen in VGI when we have games with some socially aware content, but if it is too blatant (or didactic in form), it looks more like propaganda than genuine game content. It could be done by allowing the player They/Them pronouns or introducing minorities or gay/trans characters vital to the plot. There are multiple ways of doing this right, but if such content looks insincere or shoehorned, it harms the message and the game's social impact. If the company is also known for not meeting the standards its game is supposed to promote, such actions are counterproductive and met with bad publicity. The policymakers should be aware of this issue and, at the same time, encourage games created concerning social values, but also monitor the VGI companies whose practices are not only harmful to the company employees but to the European society itself, as games are powerful and impactful media, especially among young people.

#### 2.2.4. Technological advancements requiring cross-industry cooperation

Management studies have increasingly emphasised video game production's potential for cooperation, being a creative domain of new media development, combining computer science, digital media, game technology, and artistic and narrative skills (Styhre & Remneland-Wikhamn,





2021, pp. 476-477), at the intersection of the digital and creative economies (Belyaeva et al., 2022). In VGI, given its modular and complex specificity, achieving and maintaining business success heavily depends on continuous technological advancements leading to the key success factors namely innovations and innovativeness (Klimas, 2019) and using creativity, knowledge resources as well as relevant skills such like ambidexterity (balancing exploration and exploitation of knowledge) being crucial to fostering innovation (Hotho & Champion, 2010, p. 39-40) and often build through cooperation (Sun & Lo, 2014; Inoue, 2021).

In the context of video games, technology and business model innovation driven by technological advancements and technological innovations (Cohendet et al., 2021; Mancuso et al., 2023) will continue to outpace legal frameworks, as it has been done already (Levin, 2010, pp. 17-19). We see how true it is as we deal with new challenges related to the technological race in hardware and software (e.g., computer processors (CPU)/graphic cards (GPU), operating systems (OS)), new generations of consoles, new generations of game devices (including handhelds; handheld gaming computers) and global game changers like the development of AI and biocybernetics.

Indeed, the entire gaming industry, including its surrounding ecosystems, is profoundly shaped and driven by technological advancements. The global industry's developmental leaps can be viewed through various lenses, inseparably tied to the emergence of successive generations of processors and graphics cards, new console generations, and other hardware innovations, as well as the advent of touchscreen technology and its popularization following the release of the first iPhone have been pivotal. Today, alongside these ongoing technological breakthroughs, artificial intelligence (AI) has joined this lineup, further propelling the video game industry forward. In the context of cross-industry collaboration, it is essential to highlight the leaps associated with successive generations of consoles and, to some extent, graphics cards and processors, which heavily rely on the cooperation between hardware suppliers and game developers. On the one hand, innovative technological solutions in newly developed games can act as catalysts for hardware advancement or influence its direction. On the other hand, technologically advanced hardware sets the stage for the future requirements games must meet. In both scenarios, collaboration between hardware manufacturers and developers is crucial.





A recent example of innovative hardware development is the Steam Deck, a mobile hybrid between a console and a PC. It targets the needs of demanding gamers who seek the ability to play technologically complex and requiring games beyond their desks or homes - games that traditional mobile devices like smartphones or tablets cannot support. This unique device exemplifies how hardware innovation can address specific gaming needs while redefining the boundaries of mobile gaming experiences. This technological innovation fits the tendency to turn domestic spaces into consumer spaces while also allowing for portable media experience through hand-held equipment like Nintendo's DS console (Millington, 2014, p. 4), which so far has been magnified by the popularity of Nintendo Switch and new generations of different handhelds. Besides that, we have multiple VR and AR solutions, which are more affordable every year (however, mainly in the context of serious games). Games are now less likely to get labelled as something that does not fit the shared spaces at home. This is magnified by such long-present aspects of games as the power of cloud computing and the pervasive, location-aware connectivity that changes gameplay and alters the boundaries between entertainment and what we have traditionally thought of as more serious computing contexts (Young, 2010, p. 17). Currently, the landscape of different access forms to video games is rich and expands across multiple platforms. Outside of PC gaming and the most popular gaming consoles (Microsoft Xbox, Sony PlayStation, Nintendo Switch, etc.) in their different generations, we have the burgeoning market of handhelds. While Nintendo already had an established role in this segment, Valve's introduction of Steam Deck, a portable all-in-one gaming PC, arguably started a new era of competition, with devices like ASUS ROG Ally or Lenovo Legion Go, to name a few. Even more critical, there are new business models that drive the market revenues, with games no longer being only sold (in physical or digital copies) but more and more popular as a monthly (or annual) subscription, battle pass, and mobile gaming available in a freemium model. Cloud gaming is even more possible through the advancing technology. It opens new potential markets, with services like Xbox Cloud Gaming, GeForce NOW, and PlayStation Plus or Amazon Luna, to name just a few. It is necessary to note that the business models of video game companies are currently as diverse as competitive, so one must be cautious of new trends, alliances, and ongoing mergers and acquisitions when describing this incredibly diverse, dynamic competitive landscape in detail.





### 2.3. Overall research design

The primary premise of the analysis of existing knowledge giving ground for this report was aligned with objective O.3.1, which focuses on identifying mechanisms of value co-creation and value transfer in the context of collaboration within EVGIE as well as CCI. Furthermore, considering the critical role of innovation for the gaming industry and game developers (Klimas & Czakon, 2018), the original scope was expanded to include mechanisms of co-innovation. These assumptions, shaped through a brainstorming session within the research team, were translated into a set of five research questions:

- **RQ1:** *How is value co-creation between VGIE and CCI addressed in recent research in terms of the establishment (drivers, motives, barriers, aims), execution (mechanisms, tools, practices), and ending (breaking events, problems, challenges)?*
- **RQ2:** *How is co-innovation between EVGIE and CCI addressed in recent research in terms of the establishment (drivers, motives, barriers, aims), execution (mechanisms, tools, practices), and ending (breaking events, problems, challenges)?*
- **RQ3:** *How is value transfer between EVGIE and CCI addressed in recent research in terms of the establishment (drivers, motives, barriers, aims), execution (mechanisms, tools, practices), and ending (breaking events, problems, challenges)?*
- **RQ4:** *What are the positive and negative outcomes (results, effects) of co-creation relationships between EVGIE and other CCI entities and impacts on the economy and society?*
- **RQ5:** *What are the success and failure factors of cooperation, co-creation and co-innovation, and value transfer between the EVGIE and other CCI entities?*

Taking into account the findings of earlier research on gaming innovation ecosystems (Klimas & Czakon, 2022), which highlighted the evolving and changeable use of cooperation and cooperative relationships by video game developers, the first three research questions focusing on cooperation (in the context of co-creation of value, value transfer, and co-innovation) were embedded within a process framework. It was cognitively valuable to identify mechanisms across the stages of establishment, execution, and ending of cooperative processes.

It should be noted that an additional key assumption was the focus on “*entertainment*” games while only providing auxiliary consideration for serious games (note: we have not used exclusion criteria related to serious games at the stage of data searching, instead during the





content analysis we focused on entertainment games). The decision to concentrate on games dedicated to entertainment, or those primarily developed for commercial purposes, stemmed from the fact that key industry reports and analyses predominantly address these types of games.

Answering the research questions was grounded in three research and analytical actions conducted as part of desk research: (1) thematic analysis of academic literature, (2) thematic analysis of industry reports, and (3) comparative analysis of case studies. These desk research activities were largely conducted simultaneously. Initially, efforts were concentrated on gathering and analysing academic literature and industry reports. These research activities adhered to the methodological principles of systematic literature review (SLR) (Paul & Feliciano-Cestero, 2021; Callahan, 2014). With a slight time lag - specifically, after completing the fourth stage of the systematic review (i.e., reading and thematic analysis of the gathered literature database) - analytical work on the case studies began.

As desk research, the studies relied solely on secondary sources. However, to enhance the credibility of the assessment of existing knowledge, these sources were highly diversified. Data triangulation involved the use of academic literature (addressing RQs 1–4), industry reports (addressing RQs 1–4), as well as publicly available information on the identified case studies, including websites, press materials, the games themselves, and scientific and industry publications (mainly addressing RQ5 and supporting RQs 1–4).

A detailed description of the research methods is presented in subsequent sections of the report, covering the analysis of academic and industry knowledge (see section 3.2) and the case study analysis (see section 4.2).

## 2.4. Key terms

Before we focus on the main, substantive, part of the report, it's important - both for interpretation and drawing conclusions - to clarify the context of EVIGE as adopted in the GAMEHEARTS project. More specifically, we need to highlight its very limited applicability. Additionally, to ensure the report is more reader-friendly, we provide the key definitions, conceptualizations, and essential abbreviations that were used throughout the analysis.





Regarding EVGIE, a **crucial insight** emerging from the comprehensive analysis of both academic literature and industry reports is that **it is difficult to speak of a truly “European” VGIE** or any other regionally limited VGIE. This difficulty stems from the fact that game developers are typically born global entities. Regardless of their headquarters’ location, size, or age, the target market segment they operate globally due to the dominance of digital game distribution platforms such as Steam, Microsoft Store, Playstation Store, Nintendo eShop, Google Play, or the App Store. From the perspective of VGDs’ operations, VGI development, or the impact of VGI and VGIE on the economy and society, such regional narrowness lacks significance and practical sense. The relevance of geographical narrowing arises, in our opinion, primarily when hard institutional conditions are under analysis - for instance, legal frameworks, institutional support, and regulatory activities - or in the context of monitoring macroeconomic indicators such as employment, revenue, etc. Moreover, in broader terms, when analysing EVGIE, its internal linkages, business activities, or cooperative and co-creation initiatives, geographical scope holds no significant meaning. Notably, in the context of cooperation itself, geographical proximity is of little relevance to entities within this industry as well as within the entire ecosystem, as many processes - collaborative ones included - can be effectively carried out remotely.

Furthermore, it’s important to note that besides consideration of EVGIE in the context of the geographical location of game developers’ headquarters, this label, limited to the European scope, may be used in the context of the consumer market. For example, if we are trying to compare customers’ expectations, expenditures, needs, preferences, approaches to microtransactions, and cultural differences. In our opinion, besides the above two specific contexts, the usage of the term EVGIE (as well as analogical labels such as American VGIE, Asian VGIE, or even national ones such as German VGIE, Japanese VGIE, etc.) is incorrect and inaccurate and may be heavily misleading. On the one hand, the term EVIGE is incorrect as, in many cases, European video game developers (besides location) are not European as the ownership structure of video game developers is highly complex, with European-listed companies often having co-owners from American or Asian entities. On the other hand, the term EVGIE is inaccurate in the case of traditionally perceived, entertainment-focused games, which are inherently global products, globally distributed, or even internationally/globally developed.





Given the above, all **issues presented in this report predominantly characterise not only EVGIE but generally VGIE**, however, when the European context is relevant, it is clearly stated that we refer to EVGIE.

This report focuses on the video game industry ecosystem and cooperation in the context of this ecosystem. To ensure conceptual clarity we would like to introduce our understanding of the key issues and phenomena used in the merit parts of the report.

**Co-innovation** – “a collaborative and iterative approach to jointly innovate, manufacture and scale up” (Janardhanan et al., 2020: 2) innovations (in terms of the commonly known Oslo Manual). Thus it is considered as a cooperation focusing on value creation based on joint development of innovations. Co-innovations are implemented via innovation co-creation relationships focusing on cooperation aimed at the development and implementation of innovations (Klimas, 2019).

**Cooperation/Collaboration** - a long-term, non-incidentally linkage between autonomous (but interdependent) organizations oriented towards achieving convergent strategic goals.

**Coopetition** – a specific type of cooperation/collaboration linking competitors.

**Cross-industry/Inter-industry cooperation** – cooperation exceeding single industry, in this report it refers to cooperation between video game developers and organizations representing other cultural and creative industries.

**Cultural and creative industries (CCI)** - the new 2021 Creative Europe Programme Regulation (Article 2) defines the cultural and creative sectors as including “*architecture, archives, libraries and museums, artistic crafts, audiovisual (including film, television, video games and multimedia), tangible and intangible cultural heritage, design (including fashion design), festivals, music, literature, performing arts, (including theatre and dance), books and publishing, radio, and visual arts*” (Regulation 2021/818, 2021)<sup>4</sup>.

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<sup>4</sup> Among the most crucial policies relevant for the CCI sector, are those related to the AI technologies. For further reference, we direct to Regulation 2024/1689.





**European video game industry ecosystem (EVGIE)** – refers to VGIE covering meta-organizations, organizations, collectives of individuals, and individuals (the structural components of VGIE – Klimas & Czakon, 2022) having headquarters located in Europe. As emphasised above, the consideration of EVGIE is very limited rather to the geographical location of developers and consumer market characteristics. At the same time, it should not be used in the context of ownership or products.

**Intra-industry cooperation** – cooperation within a single industry.

**Serious game** – “computerised game and advanced video graphics systems used for non-entertainment purposes and whose focus is on learning and training or educational and behavioral change” (Pacheco-Velazquez et al., 2023: 56-57). This report focuses on video games used for entertainment purposes and (if anyhow) considers serious games it is clearly stated.

**Value co-creation** - an integration of the existing resources of organization and the resources of another/other organization/s under certain circumstances, which is beneficial to the welfare of all parties (based on Vargo et al., 2008, cited after Fan & Luo, 2020). Value co-creation is implemented by co-creation relationships focusing on cooperation (Klimas, 2019).

**Value transfer** – the use of resources (tangible and/or intangible, including for instance technology, IP) allocated and employed in a specific way and for a particular purpose, but in a manner different from their previous use. Value transfer gives additional options for value creation with no focus on co-creation. In this report, the focus is on value transfer between two distinct industry contexts, one being the video game industry and the other a different CCI sector.

**Video game industry ecosystem (VGIE)** - can be defined based on a broader definition of an ecosystem, which refers to a complex system of organizations, institutions, and individual entities influencing businesses, their customers, and suppliers, and, from a wider perspective, society and the economy (Granstrand & Holgersson, 2020) usually taking the form of innovation ecosystem focusing on co-creation of a wide range of innovations, i.e. on co-innovation (Cohendet et al., 2021; Klimas & Czakon, 2022). The VGIE will be understood as an





ecosystem functioning around the video game industry, specifically focusing on traditionally defined entertainment-oriented games. Excluded from this definition are gambling games, serious games<sup>5</sup> (educational or simulation games), and e-sports.

**Video games** – “as a cultural product, a video game is a complex mix of technology, art, and interactive story” (Cohendet & Simon, 2007: 587). Originally, video games were created and used solely for entertainment purposes. Today, their applications are much broader, and entertainment is not necessarily the primary goal - or may not even be a goal at all. Nevertheless, this report focuses on games primarily designed and played for entertainment purposes, leaving serious games outside the core scope of interest.

### Acronyms used in the report

- AI – Artificial intelligence
- CCI – Cultural and creative industries
- DLC – Downloadable content
- EGDF – European Game Developers Federation
- EVGIE – European video game industry ecosystem
- PEGI – Pan-European Game Information
- SLR – Systematic literature review
- UKIE – Association for UK Interactive Entertainment
- VGD – Video game developer
- VGE – Video Games Europe
- VGI – Video game industry
- VGIE – Video game industry ecosystem

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<sup>5</sup> Importantly, we did not use “serious” as exclusion criteria in our literature or report searching. Moreover, in the case of serious games one may take a look into Deliverable 5.2 State-of-the-art exploring the current body of knowledge also in the context of gamification and serious games.





## 3 SYSTEMATIC REVIEW OF ACADEMIC LITERATURE AND INDUSTRY REPORTS

### 3.1. Introduction

The systemic literature review conducted for the GAMEHEARTS project was focused on two general types of secondary sources, namely academic literature and industry reports. Therefore, it was a systematic review of academic and grey literature (Garousi, Felderer & Mäntylä, 2016). Firstly, we run through academic literature as it is a typical approach to take a picture of the current body of knowledge in a given field as well as to identify the existing blind spots (Cabrera & Cabrera, 2023). Secondly, given the video game industry, game developers, and video game ecosystems remain poorly explored on the social science ground (Klimas & Czakon, 2022), especially in the context of value co-creation, co-innovation, and value transfer (Klimas, 2019) exploration of the state of the art has been enriched with in-depth analysis of carefully selected industry reports. We believe that including academic research and industry reports allowed us to increase opportunities for comprehensive recognition of given phenomena, namely cross-industry cooperation on the edge of VGIE and other CCI.

### 3.2. Research design

Our SLR has been designed following the most common, five-stage process (Booth et al., 2012; Czakon, 2011) starting with posing research questions, and going through publication searching, publication screening and selection, publication analysis using basic frequency and thematic analysis (Kraus et al., 2022) and finally reporting. All of the phases, together with their outcomes, are described in detail in the Table 1.

The conducted SLR followed a domain-based approach (Paul, Lim, O'Cass, Hao, & Bresciani, 2021), more specifically, a structured domain-based review addressing the key issues reflected in the research questions, as subsequently mirrored in the structure of the results section (section 3.4.).

The review protocol was developed using MS Excel and is available under a CC-BY license in the open repository [<https://doi.org/10.5281/zenodo.14510368>].



**Table 1. Stages of secondary data analysis**

<b>STAGE I. FORMULATING RESEARCH QUESTIONS AND DEFINING THE PURPOSE OF THE STUDY</b>	
<p><b>Main objectives:</b></p> <p><b>Main objective</b> Exploration of mechanisms of value transfer and value co-creation by EVGIE and CCI in the context of cultural audiences and the increase of (multidimensionally) inclusivity</p> <p><b>Additional goal</b> <b>Recognition</b> of the scale of cooperation between EVIGE and CCI</p>	<p><b>Research questions:</b></p> <p><b>RQ1:</b> <i>How is value co-creation between VGIE and CCI addressed in recent research in terms of establishment (drivers, motives, barriers, aims), execution (mechanisms, tools, practices), and ending (breaking events, problems, challenges)<sup>6</sup>?</i></p> <p><b>RQ2:</b> <i>How is co-innovation between EVGIE and CCI addressed in recent research in terms of the establishment (drivers, motives, barriers, aims), execution (mechanisms, tools, practices), and ending (breaking events, problems, challenges)?</i></p> <p><b>RQ3:</b> <i>How is value transfer between EVGIE and CCI addressed in recent research in terms of the establishment (drivers, motives, barriers, aims), execution (mechanisms, tools, practices), and ending (breaking events, problems, challenges)?</i></p> <p><b>RQ4:</b> <i>What are the positive and negative outcomes (results, effects) of co-creation relationships between EVGIE and other CCI entities and impacts on the economy and society?</i></p>
<b>STAGE II. SELECTING A BODY OF LITERATURE</b>	
<b>Academic literature</b>	<b>Industry reports</b>
<p><b>Database:</b> Scopus</p> <p><b>Keywords:</b> TITLE-ABS-KEY (("video gam*" OR "computer gam*" ) AND (develop* OR industr* OR studio* OR publish* ) AND ( cultur* OR creativ* OR cci OR museum OR orchestra OR music OR art OR sport ) AND ( creation OR co-creation OR "value transfer" OR innovation OR co-innovation OR inclusiv* OR cooperat* OR ecosystem*))</p> <p><b>Inclusion criteria:</b> Search in: title, abstract, keywords Publication type: (peer) reviewed article Language: English Access: full-text Time: no time constraints</p> <p><b>A priori selection</b></p>	<p><b>Exclusion criteria:</b> reports with no relevance to the topic of EVGI-CCI relations; reports with obsolete content; reports repeating the previously retrieved content.</p>
Number of identified publications	647

<sup>6</sup> It is worth noting that, with regard to the first research question, a significant portion of the research findings from the analysis of academic literature has been used to prepare a scientific article (Klimas et al., 2025), thus in this report the first question is addressed mainly using industry reports and supportively using academic literature. Nonetheless, to take a big picture regarding RQ1 it is recommended to read also the above referenced article.





Number of publications in English	606	The base list of 29 industry reports, with 18 Statista database statistical reports  The expanded list of 26 recommended by the Advisory Board members.
Number of articles	252	
Number of articles in English	218	
Number of preprints	24	
<b>STAGE III. INITIAL SELECTION AND EVALUATION OF THE COLLECTION</b>		
<b>Academic literature</b>		<b>Industry reports</b>
<b>Admission criteria</b>		<b>Admission criterion</b>
Articles chosen for the final database (selected)	The titles (T) and abstracts (A), of the papers refer directly to the research questions.	Approval by industry experts.
Articles chosen for the supplementary database (inspiring)	T/A refers indirectly to the research questions.	
Articles excluded	T/A/ are not related to the research questions or are irrelevant	
<b>A posteriori selection</b>		
Number of publications marked as selected	n= 58 / 1 preprint	
Number of publications marked as inspiring	n= 53 / 5 preprints	
Number of publications marked as excluded	n= 107 / 18 preprints	
Selected articles and preprints	n=59	
Full texts	n=57 (After the abstract review, the authors excluded two articles from journals lacking reliable credentials and citations in Scopus)	
Added seminal papers	n=4	



<b>Articles to be analysed</b>	<b>n=61</b>	Number of analysed sources: 55 industry reports + 18 Statista database statistical reports + incalculable amount of industry news accessed via reliable press services, analysed to stay up to date on topics regarding policies of diversity and inclusiveness in modern video game titles
<b>STAGE IV. READING &amp; ANALYSIS</b>		
a) bibliometric analysis, b) content/thematic analysis coherent with TCM and supportively also ADO framework		a) content/thematic analysis coherent supportively with ADO framework
<b>STAGE V. SUMMARY OF RESULTS/REPORTING</b>		
This report and scientific article (Klimas et al., 2025)		

Source: own work – shortened version focusing on first RQ is presented in Klimas et al. (2025)

The entire research process adhered to the principles of methodological rigor for literature reviews, commonly referred to as the 5C framework (Callahan, 2014):

- **Concise:** avoiding unnecessary and redundant content.
- **Clear:** maintaining a strong focus on the research questions and using 6W framework to describe the reviewing process (see next paragraph).
- **Critical:** identifying limitations and blind spots in the literature.
- **Convincing:** supporting arguments with examples and employing research triangulation through collaborative review and ongoing discussion of findings, additionally integration of both academic literature and industry reports.
- **Contributive:** identifying both what we know (section 3.4.) and what we do not know (section 5).

The reviewing process has also been subordinated to the 6W approach by Callahan (2014). The 6W (“who”, “where”, “what”, “how”, “why”, “when”) to increase the clarity of the process. Table 2 describes the approach employed by the research team in their industry reports review.





### **Analysis of academic literature**

The data for this part of SLR was retrieved via the Scopus academic database and then by the various legitimate sources of the full text of the selected papers (Singh et al., 2021). To ensure the highest possible utility of the selected studies, we applied a strategy of exhaustive coverage with selective citation (Cooper, 1988). We analysed both conceptual and empirical works using the content (thematic) analysis (Kraus et al., 2022) organised around codes adopted directly from our research questions (section 3.4.). Additionally, following methodological recommendations (Rosado-Serrano et al., 2018; Paul & Feliciano-Cestero, 2021) we adopted also the TCCM framework, where T stands for Theory, the first C refers to Context, the second C relates to Characteristics, and finally, M stands for Methods (section 3.4.1.), in order to comprehensively explore the given research area. Supportively to qualitative analysis, we conducted a basic frequency analysis to evaluate the maturity of the considered research area (section 3.3.).

### **Analysis of industry reports**

The research team started selecting reports by broadly searching for reliable industry-related source providers (commercial and public) and organisations. The list of the first 29 titles (not counting also searched and retrieved earlier editions of annual reports) of the most relevant industry reports from different sources and 18 Statista statistical reports was then shared with and expanded by the suggestions provided by the industry experts. To further explain and elaborate on the quantitative overview of all 55 comprehensively analysed industry reports and the additional Statista content chosen to expand the data with a business intelligence database, we can specify the details of the selected sources. The list of analysed reports is included in our reviewing protocol prepared MS Excel and is available under a CC-BY license in the open repository [<https://doi.org/10.5281/zenodo.14510368>].





**Table 2. The 6W of the VGIE-related academic literature and industry reports review**

6W	Description	Solution – academic literature	Solution – industry reports
Who	Who searched “data?”	Based on the developed research questions, the research team identified search criteria that consisted of a combination of words along with their potential synonyms. Subsequently, one of the designated researchers developed four sets of search criteria, which were as follows: TITLE-ABS-KEY (( "video gam*" OR "computer gam*" ) AND ( develop* OR industr* OR studio* OR publish* ) AND ( cultur* OR creativ* OR cci OR museum OR orchestra OR music OR art OR sport ) AND ( creation OR co-creation OR "value transfer" OR innovation OR co-innovation OR inclusiv* OR cooperat* OR ecosystem* )), and these were accepted by the entire research team in the presented form.	The has been searched and compiled by a designated researcher, with further assistance and consultations from the lead researcher, and a group of industry experts asked for suggestions (the experts were the participants of the panel described in the paper and the project partners).
When	When were the data collected?	The articles for review were collected from May to June 2024, and their analysis took place in July and August 2024.	The data was searched and retrieved between May and July 2024, with additional sources acquired after the “snowballing” effect achieved through reading and consulting the preliminary results of the search. The last reports used in the analysis were retrieved in August 2024.





Where	Where were the data collected?	The literature for the SLR was obtained from peer-reviewed scientific publications that adhere to high publishing standards.	The reports were searched via websites of renowned business intelligence companies, especially Newzoo, Statista, EMIS Next, and others. Business reports were then expanded by sources from EGDF (European Game Developer Federation), ISFE/VGE (Video Games Europe), UKIE, Game Developers Conference, Entertainment Software Association, Polish Gamers Observatory, SPIDOR, WARC, You.gov, and others, including the publications funded by the European Commission.
How	How were the data found?	The data source for this study was the academic database SCOPUS, in which a previously developed query was used to search for relevant articles (i.e., those containing content that directly or inspirationally related to the research questions) in the titles, keywords, and abstracts.	The data was first searched using the keywords used in the available databases and then with a broader search within the browser. This was followed by carefully reviewing all reports available to the research team from the top sources for the industry: Newzoo, EGDF, ISFE (Video Games Europe) and other previously listed providers. The final batch of retrieved reports was the publication recommended by partners and industry experts engaged in the activities conducted by the research team.





What	What did you find?	<p>The literature analysis contained in the final database revealed that the topics encompassing collaboration and co-creation of value between EVGIE and CCI remain at a preliminary stage. It is worth noting that the first scientific publication was produced in 2003, indicating a limited saturation of the research field. Furthermore, adopting a process-oriented approach, namely establishment, execution, and tip, we first identified the driving factors, motives, and potential barriers to collaboration and co-creation of value between EVGIE and CCI. Notable factors include: financial support, access to a skilled workforce (which simultaneously serves as a barrier), and concern for cultural heritage, protection, and revitalization. The content analysis of materials related to the implementation stage allowed us to identify three coordinating mechanisms aimed at ensuring consistency and the ability for effective collaboration. Finally, we noticed that the final stage of collaboration between EVGIE and CCI is largely unexplored. It turned out that none of the analyzed publications address issues related to breakthrough events, challenges, or problems leading to the sudden or gradual termination of collaboration.</p>	<p>The final collection of reports for the detailed analysis included 55 separate publications (not counting also retrieved previous editions of the selected report titles) and 18 additional statistical reports from the Statista database. The selection focused on the data related to the EVGIE, in addition to the publication on the American or Asian markets, in situations where those reports provided comprehensive comparisons with the European markets. The research team used Newzoo and Statista as the primary sources for business and industry statistics and the EGDF and ISFE (Video Games Europe) as the primary sources for reference related to policies, recommendations and Europe-specific trends and requirements. Despite the best efforts of the research team, data on the VGI-CCI collaboration has proven to be extremely scarce compared to the general business data. The research team also struggled with selecting data that will avoid the bias resulting from the secondary (and often not even reflected) role of the EVGI compared to the American and Asian markets (also commonly specified as the Western and Eastern markets).</p>
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Why	Why did you select the works included in your final data set?	<p>In the study, inclusion criteria were applied, such as: works written in English, available in full text, and peer-reviewed by experts. On the other hand, exclusion criteria included: books, book chapters, book reviews, conference materials, working papers, editorial materials, and notes. As a result, a preliminary database was created comprising 647 potentially relevant literary works related to the research questions. However, in order to identify the final literature base, the research team read the titles, abstracts, keywords, and (if necessary) conclusions of the works included in the initial literature database (each researcher was assigned a specific number of works). The works were divided into three categories: 1) selected articles - directly related to the research questions and suitable for in-depth content analysis; 2) inspiring articles - containing particularly interesting, alternative perspectives, research methods, etc.; and 3) useless articles - works that were completely irrelevant.</p> <p>As a result, a collection of 57 works was created, to which 4 seminal works (not included in the aforementioned collection) were added. Ultimately, the final literature database contained 61 articles, which were thoroughly read and subjected to qualitative content analysis as well as simple frequency analysis, serving as a complement to the proper analysis.</p>	<p>The final selection of the chosen data reflects the author's goal of providing the European Commission, European and national policymakers and the EVGIE actors (especially VG developers) with recommendations serving the potential increase of such collaboration and its positive effect on the European economy, society and culture, including topics European heritage protection and promotion, inclusiveness and diversity. The sources containing elaborate analyses of such endeavours were prioritised, along with the sources elaborating on the good practices and further recommendations. To ground the analysis in the actual industry realities, current topics, and recent trends, only the latest editions of available sources have been analysed in detail, and the latest available sources were used to overwrite all data found in also chosen but less up-to-date or even obsolete sources. Only the latest available sources were used to quote figures and estimations if applicable. Older sources were still used to elaborate on topics, practices, and case studies and formulate the final insights and recommendations.</p>
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Source: own elaboration based on Callahan (2014).





### 3.3. Quantitative results

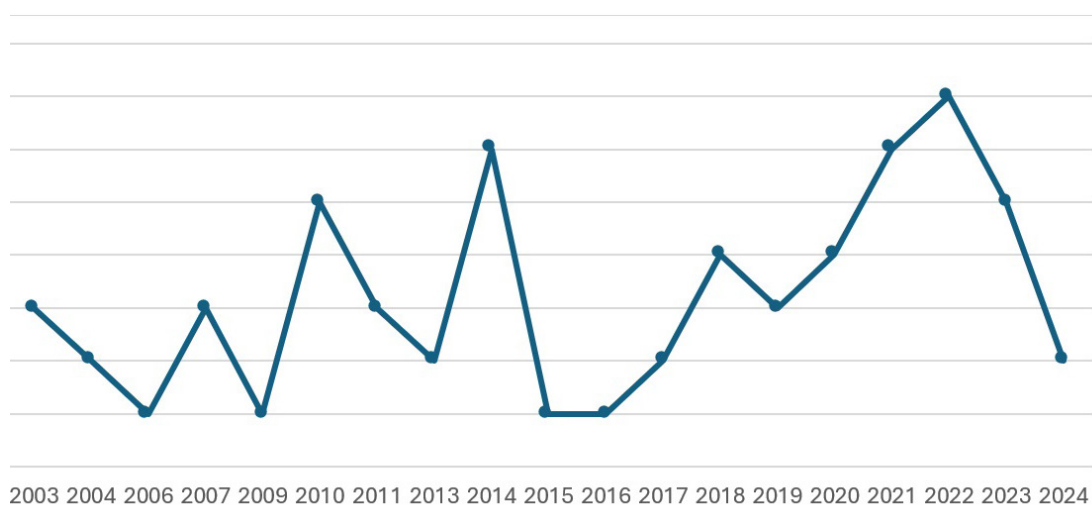
#### 3.3.1. Academic literature

##### Quantitative overview of the analysed academic literature

Quantitative analysis was run using frequency analysis. This was done by analysing the publication trends, types of articles published, and the most influential journals (Ferreira, 2018; Durach et al., 2017).

##### Publication trends

In the context of the publication trends, the analysis revealed that the topic related to VGIE-CCI relationships appeared in the field literature in the early 2000s. The oldest articles were published in 2003 and were authored by researchers affiliated with American, British, and Austrian institutions. Since then, there has been a noticeable upward trend in published documents per year, indicating the ongoing significance of the topics under investigation (Figure 1).



**Figure 1. The increasing number of published works in the VGIE-CCI-related fields**

Source: SCOPUS

Note: The query was conducted on 9th March 2024, with the full text of the selected papers retrieved in March 2024.



It is worth noting that, during SLR, it became evident that the topics related to contemporary issues of VGIE are usually relevant to computer science but rarely to social sciences. Additionally, many IT conference papers, while impactful to the VGI, are unsuitable for research from the social sciences perspective.

### **The Most Influential Journals**

The analysis of the frequency of publication trends showed that scientific papers were most frequently presented in the following three journals: *Critical Studies in Media Communication* (2/61), *Research Policy* (2/61), and *Review of Managerial Science* (2/61) and one book series: *Lecture Notes in Computer Science* (including the subseries *Lecture Notes in Artificial Intelligence* and *Lecture Notes in Bioinformatics*) (2/61). Additionally, a significant dispersion of publications was observed. It turns out that the remaining 53 papers (out of 61) were published in 53 different international journals. This proves a wide diversification of scholars and journals' audience interested in considered research field.

However, it is important to emphasise that this research area has been subject to scientific exploration relatively recently. Therefore, this diversification indicates continuous development and the creation of new knowledge in the field.

### **Types of articles published**

Further analysis of the frequency of the final set of publications focused on the types of articles. This means that we differentiated between theoretical and empirical works, which were divided into conceptual and review papers, and qualitative, quantitative, and mixed empirical investigations.

It turns out that there were 29 articles in the theoretical layer, of which 25 were theoretical papers and 4 were review publications (including one SLR).

Moreover, 32 (out of 61) articles have an empirical character. Within this group, as many as 25 publications used qualitative methods. In contrast, 3 employed a quantitative approach, and 4 used mixed methods. This shows quite an early maturity stage of the research field, as quantitative research is primarily used to test theoretical claims, and theories are underrepresented.





As previously emphasised, although the area of research on the relationship between VGIE and CCI is still at a preliminary stage, the extensive research layer utilising qualitative and mixed approaches indicates a cumulative development of knowledge. Furthermore, the need to understand and explain the dynamics of the VGIE-CCI relationship implies the necessity of in-depth analysis, which seems achievable by applying these specific research methods. Nevertheless, it seems reasonable to complement these methods with a hypothetical-deductive approach (quantitative research), as it allows for the exploration and explanation of poorly recognised phenomena and the relationships between them (Sułkowski et al., 2021), which undoubtedly applies to the relationships between VGIE and CCI.

### 3.3.2 Industry Reports

From the Newzoo portal, the principal and most influential global source on the VGI, six reports were chosen to examine in detail, all in their latest available editions and covering the topics related to the research: Global Games Market Report 2024, Games market trends to watch in 2024, The PC & Console Gaming Report 2024, How consumers engage with games in 2024, How different generations engage with video games today, How IP and brand collaborations level up games. All reports were retrieved in free versions, as Newzoo currently denies academic institutions and research teams' access to their complete business data.

Other major providers of separate report titles (as previous editions of the collected report were not considered separate sources) were EGDF (5) and UKIE (4). In contrast, other providers were used twice or less<sup>7</sup>. Five business reports were retrieved via the EMIS database. However, strict legal disclaimers protect the content of those reports, so while they are a viable source of insights and a broader picture, they cannot be quoted directly. A similar legal issue is a typical limitation for academic and educational (and, therefore, disseminated) use of subscribed business databases containing access to resources that cover company-sensitive data.

From all previously described industry sources, 21 reports cover national markets; the rest refer to European or global VGI. The time range of the reports' publications (latest editions) was 2020-2024, with the following distribution: 2020 (3), 2021 (2), 2022 (10), 2023 (34),

<sup>7</sup> It is worth mentioning that after the completion of the analytical work, a very interesting report was published under the auspices of the **European Audiovisual Observatory** (Cappello et al., 2024), dedicated to many key issues currently stimulating and distimulating the growth of the video game industry. While this report was not included in our analyses, due to its thematic alignment with the scope of our report, we encourage its reading. The findings of this report are planned to be analysed during the development of strategic recommendations, which will be included, among others, in Deliverable 3.3. Integrative Report.





and 2024 (16). The pre-2023 reports were chosen only if their impact on the research of VGI-CCI collaboration was substantial. Otherwise, pre-2023 reports were considered obsolete to cover the latest trends and issues in the industry. Even older reports are outdated, as they cover the industry before the game-changing factor of the pandemic and significant industry ownership changes during the last few years. For example, while one of the reports covered the European CCI in 2018, it was prepared and published in 2021 to help compare the pandemic situation with the industry at a glance just before its outbreak. Hence, it shares the post-pandemic perspective of the newer reports.

Finally, when reports covering the European market were analysed, much attention was paid to decipher whether it considered Europe or the EU to be aware that the UK, as a significant industry player, was taken or not in the picture. To maintain the rigour of the previous steps of this longitudinal study, we kept the report list intact, even if there is (rarely) a new edition of the analysed report. It is worth mentioning that the report European Key Facts 2023 (EGFD, VGE, 2024) was released after the thematic analyses of the reports but nevertheless, it was used in the analysis of the current trends of the EVGIE.

From the Statista database, 18 predefined reports were chosen to enrich the research by browsing through available charts and other data forms related to industry statistics. Other reports in the database were assessed as obsolete or unrelated to the study. The selected reports were the latest editions of Statista resources covering the topics of the video game industry, gaming platforms, and regional and national VGI (Europe, Finland, France, Germany, Sweden, UK). However, it is worth noting that regarding the VGI, Newzoo has proven superior to Statista for the latest data and EGDF for Europe-focused insights. Nevertheless, Statista reports on (1) Europe and regions and (2) the impact of COVID-19 were used in this report. Furthermore, Statista is also recommended for further, more focused research on the selected European VGI markets, especially for national VGI ecosystems.

It is worth mentioning that when studying and researching recent developments and the current trends in such a dynamic industry as VGI, the support provided by consultations with professional industry experts is invaluable to avoid oversimplified results extrapolated from the reports findings' similarities and shared topics, as well as avoiding the tunnel vision stemming from the lack of intra-industry dynamics, and the specific "*lore*" know only to inside-men.





### 3.4. Qualitative findings

The organization of the section presenting the results of the qualitative thematic analysis is structured around the research questions. From this perspective, the key sections are 3.4.3 to 3.4.8. Additionally, it should be noted that section 3.4.1 presents the results of the thematic analysis conducted exclusively for academic literature, while section 3.4.2 provides supplementary findings that introduce the topics covered in the sections dedicated to the research questions. Specifically, it offers three-perspective characteristics of the EVGIE.

#### 3.4.1. Theories, Contexts, Characteristics, and Methods of existing scientific works

In the following section of the report, a qualitative thematic analysis is presented according to the TCCM framework (Rosado-Serrano et al., 2018; Paul & Feliciano-Cestero, 2021) as it was used as an additional thematic lens for publication analysis.

#### Theory

Our systematic literature review identified 25 studies that applied at least one theory. Table 3 lists the most commonly used theories and concepts that researchers have employed in relation to the VGIE-CCI relationship.

**Table 3. Theories applied in the analysed literature**

Theory	No. of Articles	% of Articles	Examples
Theories related to games	5	20%	Kiourt et al., 2015; Amory et al., 2011; Lieberman, 2006
Knowledge-based theory	4	16%	Pizzo et al., 2022; Chaminade et al., 2020; Champion, 2020
Concept of immaterial work	3	12%	Creus et al., 2020; Baeza-González, 2021
Resource-based theory	2	8%	Pizzo et al., 2022; Klimas, 2019
Concept of the innovation ecosystem	2	8%	Cohendet et al., 2018, 2021



Semiotic theory	2	8%	Coppock, 2014; Shaev & Samoylova, 2014
Theory of property rights	2	8%	Harwood & Garry, 2014; Coleman & Dyer-Witthford, 2007
Theory of cultural and historical activities	2	8%	Vallance, 2014; Amory et al., 2011
Others	14	56%	Boudreau, 2022; Styhre & Remneland-Wikhamn, 2021; O'Donnell, 2013; Caperton, 2010

Source: own elaboration

Note: Literature was collected in March 2024.

The domain-specific literature on the relationship between VGIE and CCI significantly drew upon games-related theories (20%). This cluster included game theory, gamification theory, the model of game objects, the concept of language games, and ludology. Their common denominator is examining the VGI-CCI relationship or value co-creation issues from economic, narratological, cultural, sociological, and psychological perspectives.

A broad range of publications (as much as 56%) consisted of articles based on individual theories, categorised under “*other*”. This group included theoretical concepts such as social theory regarding deviance, innovation theory, learning theory, and knowledge management concepts. Articles based on these theories addressed themes related to, for example, a) the toxicity of gaming culture and its impact on shaping alternative visions and methods of inclusivity, b) managing creativity and expressing artistic values, or c) the use of games as a medium for learning and acquiring digital competencies.

## Context

This section presents the research context, understood as the geographical distribution of the authors of the works (i.e., their affiliations) and the conducted studies (i.e., the country of the research).

As the examined publications’ content analysis revealed, most of the articles were authored by researchers with affiliations in the UK (13/61) and the USA (9/61). Following this, Canadian (6/61) and Spanish (4/61) affiliations were found to be next in line.



Regarding the geographical dispersion of studies, it can be said that the most numerous research studies were conducted in the UK (5/61). This seems justified given the rapidly developing VGI market in the UK, one of the leading markets in Europe and globally. Similarly, explorations have occurred in the USA, Japan, China, Poland, and Canada, each accounting for 4 out of 61 studies. Concerning this characteristic, an intense mediation can be observed concerning the affiliations of the authors of these works. As it turns out, some of the explorations pertained to those countries (and continents) where VGI records the highest computer game sales (referring to Asia and the USA) (Buijsman, 2024) and where the percentage of people working in game development ranks highly in European standings (Marszałkowski et al., 2023, s. 10)

### **Characteristics**

This section presents the main thematic areas discussed in the publications covered by this SLR. As a result of the content analysis of the articles in the final database, it was possible to group the explored research fields into ten thematic clusters, which were further detailed into sub-areas (Table 4).

The most numerous group of works pertains to innovation, co-creation of value, networking, and collaborative creation. In these clusters, researchers focused on topics such as the impact of live music on game performance, co-creation of value, creativity and innovation, co-creative production platforms, collaboration and development, regional and global innovation networks, the relationship between community and environment, the potential of designing playful interfaces that combine interactivity and fun, and user co-creation of games.

Equally significant issues were related to education (10% of the studied works) and culture (8% of the articles), notably including the intersection of culture and education in games, the use of alternate reality games in education, and the role of local content (localisation and local language).



Research related to **inclusivity** is also gaining importance. Although it constitutes 5% of the studied works, there is a noticeable increase in interest in this area. Academics focused on topics such as cultural and gender identity in video games, promoting equality, diversity, and inclusivity among players and within games, as well as the significance of freedom and creativity.

Next were thematic clusters related to digitisation, legal regulations, innovation ecosystems, and human resources.

### Methods

This part of the report presents the undergone analysis of the research methods and analytical techniques used in the analysed articles. A summarising view on methodological aspects is shown in Figure 2.

As can be observed, in the case of conceptual articles, researchers in most cases (17 out of 25) did not specify any research method – this is intriguing as academic publications have been analysed. Concerning review articles, academics conducted bibliometric analyses, supportive thematic analyses, citation analyses (2 out of 4), systematic literature reviews (1 out of 4), and literature reviews along with industry report analyses (1 out of 4). Regarding qualitative explorations, they predominantly relied on case studies (8 out of 25) and semi-structured in-depth interviews (IDIs) (5 out of 25). Researchers in empirical quantitative studies employed econometric modelling in 2 out of 3 cases. Meanwhile, mixed-method studies primarily relied on IDIs and surveys (2 out of 4). Furthermore, there was an equal distribution of 1 case each for focus groups and surveys, systematic literature reviews, and case studies.

**Table 4. Main Research Themes in the analysed literature**

Cluster	Sub- cluster	% of publications	Examples
Innovations and co-values	<ul style="list-style-type: none"> <li>- Promotion of a healthy lifestyle in video games</li> <li>- Creating shared values</li> <li>- Creativity and innovation</li> <li>- Co-creative production platforms</li> <li>- Collaboration and development</li> <li>- The impact of autonomy at work on creativity and innovation</li> <li>- Evolving consumer tastes and the acquisition of intellectual property</li> <li>- Creative individuals in game production companies support exploration and the application of knowledge</li> <li>- The impact of live music on game outcomes</li> <li>- Balance between efficiency/productivity and creativity/innovation</li> <li>- Openness and encouragement for innovation, along with a strategic focus on innovation</li> <li>- Multi-faceted collaborative environments co-creating new values, delivered to the market in the form of innovations.</li> </ul>	23%	Millington, 2014; Harwood & Garry, 2014; Vallance, 2014; Marchand & Hennig-Thurau, 2013; Klimas & Czakon, 2018; 2022; Cohendet & Simon, 2007
Networks of connections and co-creation	<ul style="list-style-type: none"> <li>- Regional and global innovation networks,</li> <li>- Connections between the community and the environment,</li> <li>- The potential of designing playful interfaces that combine interactivity and fun,</li> <li>- Co-creation of games by users,</li> <li>- The potential impact of 3D technology and serious games on business,</li> <li>- Social interactions occurring in MMORPG games,</li> <li>- The concept of common goods in the context of video and computer games.</li> </ul>	11%	Chaminade et al., 2020; Høvig, 2016; Coppock, 2014; Gunkel & Gunkel, 2009; Coleman & Dyer-Witthford, 2007





Education	<ul style="list-style-type: none"> <li>- Pedagogy in games</li> <li>- Indie games</li> <li>- Connecting culture and education through games</li> <li>- Using alternate reality games (ARGs) in education</li> <li>- Games as means for learning</li> <li>- Development of tools for game creation to introduce entertainment and free play into training dramas.</li> </ul>	10%	Pacheco-Velazquez et al., 2023; Kiourt et al., 2015; Connolly et al., 2011; Silverman et al., 2003
Culture	<ul style="list-style-type: none"> <li>- Toxicity, marginalisation, exclusion</li> <li>- British culture</li> <li>- The role of local content (localisation and local language)</li> <li>- Local commons</li> </ul>	8%	Boudreau, 2022; Laiti et al., 2021; Webber, 2020; Simon, 2018
Inclusiveness	<ul style="list-style-type: none"> <li>- Cultural and gender identity in video games</li> <li>- Promoting equality, diversity, and inclusivity among players and in video/computer games</li> <li>- Freedom and creativity.</li> </ul>	5%	Tomé Klock et al., 2024; Kuling, 2014; Hotho & Champion, 2011
Digitization	<ul style="list-style-type: none"> <li>- AI</li> <li>- Digital innovations</li> <li>- Policies for the digital age.</li> </ul>	5%	Worrall & Collins, 2023; Pizzo et al., 2022; Benghozi et al., 2017
Legal regulations	<ul style="list-style-type: none"> <li>- Politics</li> <li>- Lobbying</li> <li>- Public policies</li> <li>- Harmful effects of increasing formalization in work practices.</li> </ul>	5%	Deng & Chen, 2023; Hotho & Champion, 2011;
Factors, Motives	<ul style="list-style-type: none"> <li>- Internal and external motives,</li> <li>- Personal motives driving game development.</li> </ul>	3%	Belyaeva et al., 2022; Baeza-González, 2021





Innovation and business ecosystem	- Complementarity of innovation ecosystems with business ecosystems.	2%	Cohendet et al., 2021; Klimas and Czakon, 2022
Human resources	- Highlighting the qualities of game developers.	2%	Creus et al., 2020

Source: own elaboration

Note: Literature was collected in March 2024.





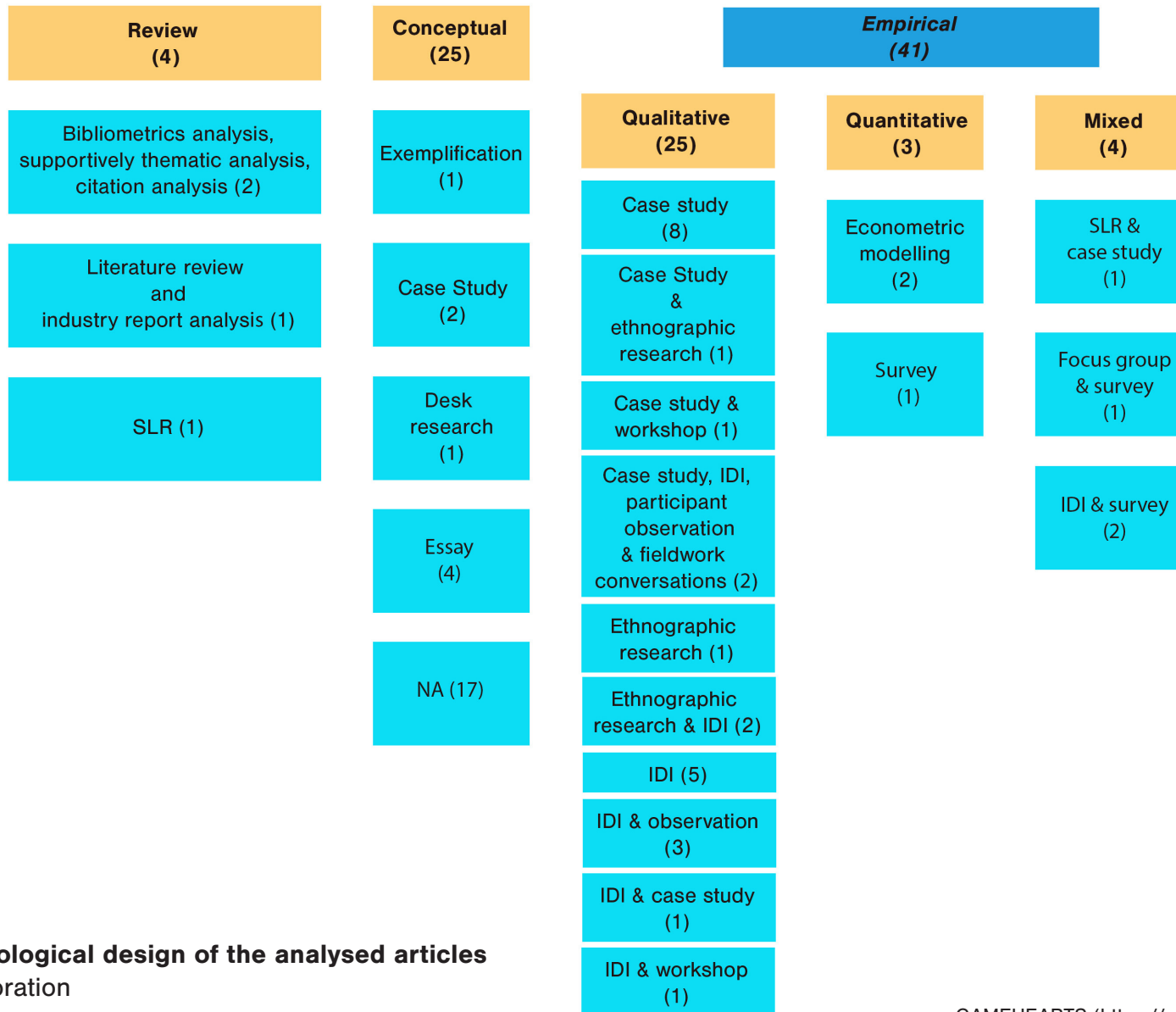
### 3.4.2. (E)VGIE characteristic

To comprehensively characterise VGIE three perspectives are adopted. First, the general qualitative and subject-contextual specification is presented. Second, the focus is given to the quantitative outlook. Third, the actors' view is outlined, as the actors are the constitutive elements of every single ecosystem (Granstrand & Holgersson, 2020) including ecosystems oriented on video games and video game industries (Klimas & Czakon, 2022).

#### General qualitative overview

To understand the intricate relations between different actors of VGIE, we need to clarify the definitions behind the subsequent levels of focus on the industry itself, its actors and the relationships between them. CCI are considered the core of the modern economy and society (Cooke & De Propris, 2011). In Europe, for instance, the video game industry is a fast-growing segment of CCIs, especially given the rapid digitalisation of European society and the role of games as digital means to promote e-skills, embrace new technologies, and encourage entrepreneurship, research, and development (EGDF, 2022, pp. 1-5) as video games represent a mix of technology, art, and interactive storytelling (Cohendet & Simon, 2007, p. 587). Indeed, we can regard video games as something bordering on different media and artistic fields, like audiovisual arts (film or animation), visual arts (textures or images), as well as music and game audio in general (Neogames Finland, 2024, p. 36). Therefore, it is safe to consider VGI a part of the broader CCI, with evident collaboration with other CCI industries in the related fields and considerable creative achievements of the VGI itself.

Video games are essential to Europe's cultural landscape, with their artistic and creative aspects distinguishing them from purely technological products (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, pp.10, 146-147, 167). Simultaneously, the industry faces constant significant technological pressures (Neogames Finland, 2024, pp. 5, 34), alongside increasing market demands from more discerning gamers (Newzoo, 2024b, pp. 29-37), and this technology-based and demand-driven situation is reflected also in the recent trends (Newzoo, 2024a, pp. 23-30; Newzoo, 2023: 7; EGDF, 2022, p. 13). Video games are a worldwide phenomenon involving millions of people of all genders, ages, and cultures, and they represent one of the most important, productive, and profitable cultural enterprises in the world. Its diffusion and popularity have allowed it to grow into a mass trend, opening the possibility of new opportunities arising from the application of



**Figure 2. Methodological design of the analysed articles**  
 Source: own elaboration





video games and gaming activities across many other entertainments, education and beyond sectors (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 142).

We understand the VGIE as an ecosystem encompassing a wide range of diverse actors such as video game developers, hardware and software producers, Non-Governmental Organisations (NGOs), policymakers, universities, research institutions, public institutions, to name a few among many. As identified by Klimas and Czakon (2022), these actors undertake different roles within the ecosystem, reflecting varying levels of engagement in intra-ecosystem co-creation processes. In a broader context, it is notable that these sectors often influence and cooperate to co-create with each other (Santoro et al., 2020), and this cooperation is an essential element of effective business models (Landoni et al., 2020). The intricacies of collaborative projects are evident in a specific form of cross-industry cooperation, where one side is represented by the VGIE (primarily game developers) and the other by representatives from another CCI sector (Lopez et al., 2024), for instance, museums (e.g. exhibitions focused on games like *The Art of Video Games* in Smithsonian American Art Museum or *War Games: Real Conflicts in Imperial War*), philharmonic orchestras (e.g. *Game Music Concert* organised by Silesian Philharmonic), archive and heritage institutions (e.g. social and cultural games disseminated by the Institute of National Remembrance – Commission for the Prosecution of Crimes against the Polish Nation).

Given the ecosystem perspective underlying the EU policy (Whicher, 2017), video games are an integral part of EVGIE but also VGIE. Video games, as a combination of technology and creative works, are finally correctly referred to by the EU institutions as creative, unique, and complex works, as stated in the conclusions adopted both during the Spanish Presidency and also in the European Parliament resolution on esports and video games (Video Games Europe, 2024, p. 4). According to Statista, Germany, France, and the UK are leading markets in Europe, with countries like Italy seeing significant workforce growth (Statista, 2024a). Poland has emerged as a substantial player in Eastern Europe, particularly in storytelling-focused games (Statista, 2024).

Given the regulatory perspective, while sometimes it is also hard to set boundaries between the European and “*beyond European*” VGIE, there are some crucial fields of mutual understanding, such as the PEGI classification system. The Pan-European Game Information (PEGI) age rating



system functions as an independent organisation to help European parents make informed decisions when buying video games. Via the PEGI App, parents, guardians, and players can access all the information about a specific game in one place and can, for example, filter by age rating (Video Games Europe, 2024, p. 23). Such initiatives and pan-European policies create fundamentals for the EVGIE identity despite the ongoing globalisation of the VGI and rapid expansion of American and Chinese companies in their aggressive acquisition of European game publishers and developers<sup>8</sup>. The detailed Strengths, Weaknesses, Opportunities, and Threats (SWOT) of the EVGIE are available in a relevant study (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 168).

### Quantitative snapshot

A 2020 list found 1,181,019 video games available across the existing major gaming platforms and distribution systems (ISFE Esports, 2022, p. 10). It shows the overwhelming scale of the effort, money, and creative, often artistic, work invested into the creation of video games and the development of VGI. Globally, the industry generated an estimated revenue of USD 184 billion in 2023, while the second largest entertainment industry, the movie industry, generated revenue of USD 99.7 billion in 2021 (WIPO, 2024, p. 106). According to Newzoo, in 2024, the global games market will generate \$187.7 billion, representing +2.1% year-on-year growth, with the number of players globally reaching 3.42 billion in 2024, a +4.5% year-on-year increase (Newzoo, 2024, p. 16).

The VGI contributes significantly to economic activity in the hubs that host it and to many people's leisure and relaxation activities (WIPO, 2024, p. 106). In the top global economy, the USA, the video game industry generated and supported more than \$101 billion in total economic impacts and contributed nearly \$66 billion to US GDP in 2023 (Entertainment Software Association, 2024, p. 15). In Europe, the video game industry revenues reached €25.7 billion in 2023 (Video Games Europe, 2024, p. 14) while European player growth will amount to +2.4% yearly (Newzoo, 2024, p. 18). Today's generation of the youngest gamers is primarily the children of millennials, and today's gamer kids are also more immersed in games than previous generations (Polish Gamers Observatory, 2022, p. 13). What is more profound, is the increasing phenomenon of "*passing gaming*", with a significant group of

<sup>8</sup> During the work on this report, as well as through the stakeholder workshop held in Wroclaw under WP2 and the interviews conducted in the following research stage, it became clear that **the issue of ownership, mergers, and acquisitions** in the context of the European video game industry is very significant. This importance is particularly evident due to the potential threats posed to European developers and players by the growing, unchecked expansion of Chinese and Saudi companies. These issues will be incorporated and discussed in the context of potential recommendations in the final deliverable of WP3, i.e., Deliverable 3.3. Integrative Report.





consumers passively watching other people's gameplay through video platforms, popular especially among young consumers who watch other players' gameplay through different platforms and social media (Polish Gamers Observatory, 2022a, p. 3).

The global crisis had different impacts on different national industry ecosystems (Lee et al., 2024). When talking about the VGI, and the crisis in the industry, on one hand, as has been noted for the collected 2022 data, the growth slowed in Sweden, Romania, and Denmark, whereas the Croatian, Dutch, Slovakian, and French industries faced a decline or zero growth. On the other hand, the number of studios in the EU and the employee base of the EU game industry continued to grow (EGDF & Video Games Europe, 2024, p. 3). The companies in Finland, Sweden, and Poland can be considered as some of the key EVGIE players in terms of game production. (Neogames Finland, 2024, p. 17). Nevertheless, the potential of the European game studios has been noticed by the industry giants outside of the EU, and we observe a progressing and ongoing buyout of the most attractive companies. It is also evident that public funding helps new studios, facilitating research and development of the entire EVGIE (EGDF & Video Games Europe, 2024, p. 20). According to Newzoo data from July 2024, all game market regions scored a year-on-year growth in 2024, with the values for Europe estimated to be 34.8 billion US dollars, which is significantly lower than those calculated for Asia-Pacific (85,9) and North America (50,2), even if higher than Latin America (9,1) and Middle East & Africa (7.7) (Buijsman, 2024). It is necessary to note that Newzoo revenues data as the amount the industry generates in consumer spending on games, excluding the revenues from taxes, second-hand trade, and profits from advertising, as well as console or peripheral hardware, B2B services, and all forms of online Betting and gambling (Newzoo, 2024, p. 10). Regarding the number of players, according to the same sources, the situation differs, considering that Europe, with around 454 million players, is behind Asia-Pacific (1809) and Middle East & Africa (559), but before Latin America (355) and North America (244) (Newzoo, 2024, p. 18). This shows the importance of remembering that the potential player base is not a simple factor when forecasting revenue.

Among the most critical issues in the EVGIE that industry leaders and policymakers should address is the lack of a talent pool. The game industry competes with other sectors for the best global tech talent (Neogames Finland, 2024, p. 7). The Swedish games industry will need more than 25,000 game developers by 2031 if current growth trends continue and



there is no further increase in the talent pool (Video Games Europe, 2024, p. 5). The factor hugely impacting the recent growth in the EVGIE, casually omitted (or not understood) by the global or American sources, is the rapid expansion of the talent pool in the eastern borders of the EU. The Russian invasion of Ukraine and the simultaneous political unrest in Belarus both triggered a historical game industry talent exodus from Ukraine and Belarus – causing a significant influx of game industry war refugees into the EU. The video games industry came together to welcome them, with Poland and Lithuania having made enormous efforts to integrate political and war refugees into their communities. As an outcome, in 2022, the EU game industry surpassed the 90,000 employees mark for the first time, with the percentage of women working in the sector going up from 23.7% in 2021 to 24.4% in 2022 (EGDF, 2022, p. 3).

After the thorough analysis of all the selected reports, the research team came up with several insights that serve as the anchor for the detailed analysis of the VGI-CCI cooperation, as well as the potential pool of references for the future EVGIE supporting policies of the EU agendas. The insights are:

1. EGFD and VGE are the most reliable and elaborate sources on the EVGIE. The most informative reports are created jointly by both organisations. Non-European reports focus on the American or Asian VGI, usually dividing the World into West and East, with Europe being a more and more non-relevant part of the West.
2. Newzoo is the most influential source on the global VGI for regions and prominent countries. However, the data is primarily business-related and marketing-oriented, with little to no relevance to the broader CCI. There is limited access to VGI-related data for research purposes (a significant paywall and commercial focus limit access to top providers, like the Newzoo).
3. Top powers from the USA, China, and Japan increasingly concentrate on the global gaming market and, through acquisitions, are continuously deepening the concentration of the video game market. Ubisoft and Embracer used to be the only significant European publisher/developer that stayed relevant among the top global companies. However, the ongoing concentration of the market connected to the acquisition of European companies by the industry leaders from the USA and China made even top European companies significantly less resilient to the loss of independence. Even if it does not affect the players,





the lack of action in this matter may soon result in a situation in which the “European” VGI will mean geography or the consumer base, with the companies generating revenue for the American or Asian owners. Other, even well-known and nationally influential companies remaining uncontrolled by capital outside of Europe, like the Polish CD Projekt Red, are far behind in size and influence. Nonetheless, even in the national context, there are some cases of the acquisition of significant national European brands by entities outside of Europe, such as the case of the Polish Techland being acquired by Chinese Tencent in 2023.

4. It is hard to accurately assess the significance of most well-known European publishers and studios because of the significant non-European capital and intricate corporate structures. Once again, it brings us to the conclusion that the applicability of the label of EVGIE is quite problematic and may lead to misunderstandings.
5. AI is currently one of the crucial factors in the development of VGI, including EVGI in particular if Europe does not want to fall behind in the American-Chinese race. As we can see, AI use and development are currently among the most crucial megatrends, and it will undoubtedly revolutionise multiple industries, including the VGI<sup>9</sup>. Nevertheless, it is problematic that **the European role in pursuing the new AI technologies is marginal**. China’s serious take on AI development, including its creation of the DeepSeek AI solution, is Europe’s wakening call to answer.
6. European EVGIE, especially smaller studios, depend on State aid and other forms of public support.
7. The “*European VGI*” is mostly a figure of speech, with much diversity (and competition) and little cooperation between the national VGI markets. The “*European*” VGI data also need constant double checking from report to report to avoid the data excluding the UK, which, next to Germany, is the primary European market<sup>10</sup>.
8. The PEGI age rating system is one of the few initiatives unifying the EVGIE.
9. The Russian invasion of Ukraine has strongly impacted the VGI companies in adjacent EU countries with new professionals. Nevertheless, the European VGI competes with other sectors for the best global tech talent, and there is a persistent lack of VGI-related

<sup>9</sup> We recommend to read and analyse the Trend Map 2024-edition developed by Infuture Institute in which approximately 70 trends and megatrends are identified for the next 25 years among which a lot refers to technology including AI. Trends maps are updated and published every year: <https://infuture.institute/en/trend-map/>

<sup>10</sup> Given the more practical perspective presented in industry reports, the EVGIE is considered mainly as a set of European companies and their games and other IPs. The valid question addresses the nature of the “*European*” moniker. Industry-wise, the most appropriate is to use the geographical range of countries encompassed by the industry-leading European organisations EGDF (European Games Developer Association) and Video Games Europe (VGE, formerly ISFE), which are the most relevant and reliable sources on the EVGIE (with Newzoo being the most relevant and influential source for the VGI in the global context). We use this approach to avoid the shortcomings of limiting EVGIE to only EU countries, as the United Kingdom is among the most critical national industries, both actors and players.





education policies.

10. If the EU does not lead the development and will not support the strategic unity of the EVGIE, it will become even more dominated by the American and Asian capital. The rapid expansion of the Chinese Tencent technology conglomerate should incentivise European policymakers to consider the risk of losing even the vestiges of independent EVGIE. Tencent's domination is not only a threat to European business but is even more troubling when we consider the huge impact video games have on popular culture and how Chinese perspectives of politics and citizenship differ from European mindset and standards.
11. The need for more relevant industry sources shows the necessity of further research on the VGI-CCI cooperation, its phases, and related conditions.
12. The lack of extensive and actual sources for the CCI-related EVGI case studies results in further searching and retrieving sources beyond the scope of industry reports. The industry reports show a general lack of focus on CCI-related games. However, there is more coverage if the game is commercially successful.
13. The examples of CCI-relevant games most often include topics related to the history of war, architecture, or cultural or national heritage. The innovative aspects of modern titles using such themes focus on authenticity and realism to differentiate them from fantasy games that often dominate in related genres.
14. While there are examples of more innovative CCI-inspired games (new technologies, unusual immersion, important message), they need wider recognition, especially if they are more artistic or educational projects, and commercial success is not a sure factor.

## Actors

The reviewed literature identifies various types of actors within the VGIE, with particular emphasis placed on game developers as key actors (e.g., Tschang, 2007; Vallance, 2014; Klimas & Czakon, 2022) as well as end-users, namely players (e.g., Pacheco-Velazquez et al., 2023; Klimas & Czakon, 2022). Some studies highlight the necessity of involving experts in specific thematic areas relevant to the game, as well as those with technical or artistic skills and competencies (Harwood & Garry, 2014; Pacheco-Velazquez et al., 2023). This stems from the increasing complexity of games, their technological advancements, and the growing expectations of players for comprehensive gaming experiences. Basically, we can distinguish a vertical path that represents the “*gaming environment*” (content providers, platform providers, and consumers, as well as their interrelationships) and a horizontal path in the framework,





which refers to the distribution and communication channels linking content providers to customers (Marchand & Hennig-Thurau, 2013). The platform is the focal element, but the game content ultimately defines the industry. When a game is released, what is received is a multifaceted product that, in addition to entertainment, generates advertising campaigns, merchandising, debates on social networks, media analysis, gameplays on YouTube, games streaming on Twitch, fan-generated material, professional player competitions, academic analyses, and a whole series of cultural practices that increasingly expand the concept of “*video game*” (Reyes-de-Cózar et al., 2022).

The most extensive categorization of actors in gaming industry ecosystems found in the academic literature is presented by Klimas and Czakon (2022), who classify actors into four types (see Table 5) and outline their roles based on intensity (see Table 3, pp. 2240–2241 in the reference article) within the gaming industry ecosystem (pp. 2238–2239):

- **Leadership:** orchestration and participation in collective coordination within the ecosystem, attracting and involving participants, managing communication and cooperation, and overseeing value management within the ecosystem, such as addressing tensions in value co-creation processes.
- **Direct value creation:** initiating and coordinating one’s own innovation processes within the ecosystem, as well as participating in innovation processes led by other ecosystem actors.
- **Value support:** engaging in and implementing knowledge management processes within the ecosystem, including knowledge creation, processing, sharing, distribution, transfer, dissemination, and protection. It also involves coordinating the appropriate allocation of newly created knowledge and ensuring IP protection, alongside supporting internal communication and the integration of IE participants.
- **Encouraging entrepreneurship:** stimulating knowledge transfer, particularly from academia to business, facilitating bottom-up regulation and coordination of innovation ecosystem development, and ensuring the appropriate structure of the ecosystem, including support for the introduction of new potential actors.



**Table 5. Heterogenous actors of video game ecosystems**

Actor type	Actors	
NETWORKS	Networks of organizations	
	Producers of final products - video game developers	
	Competitors - video game developers	
	Suppliers - game publishers	
	Suppliers - game distributors	
	Complementors - hardware/console manufacturers	
	Complementors - producers of complementary products for gaming	
	ORGANIZATIONS	Producers of substitutes
		Government
		Public institutions
Research institutes		
Universities		
Regulators		
NGOs		
INDIVIDUALS	Consumers - players	
	Consumers - gamers	
	Consumers - hardcore gamers	
	Consumers - professional gamers	
	Clients - people who buy games but excluding consumers	
	Modders	
	Hackers	
	Testers	
	Influencers	
	Political decision-makers	
COMMUNITIES	Investors	
	Communities of individuals	

Source: Klimas & Czakon (2022, pp.2226-2236)

Within the VGI itself, all segments overlap with each other. Actual game development consists of product management, arts, design, graphics, animation, and, on the technical side, the game engine, software architecture, and back and front-end programming. The business includes marketing, studio management, financials, business plans, and negotiations with partners, publishers, and investors. Supportive actions include community management, analytics and metrics, human resources, and quality assurance (Neogames Finland, 2024, p. 40). We understand the VGIE in a way that corresponds with the interpretation presented



by the EGDF. EGDF perspective forms the framework of our understanding of the broader video game industry and its place in the CCI, along with the mentioned understanding of the intricate relations regarding the CCI, VGI, VGIE (as well as its European context), and dependencies between them. We also recommend further checking the EGDF website in the section related to the VGIE-related topics of games as the driving force of the digital revolution and content-driven innovation. All ecosystem-related EGDF classifications, with their respective interpretations, are available on its website. In this paragraph, we use them to illustrate the intricacies of the EVGIE connections to different stakeholders, the EVGIE impact on innovations in different fields, and the digital revolution.

### 3.4.3. Value co-creation between VGIE and CCI<sup>11</sup>

To ensure a clearer and more comprehensive understanding of the findings regarding co-creation phenomena, their presentation follows a processual structure, encompassing the following stages:

- Establishment – the focus on drivers, motives, barriers, and aims.
- Execution – the focus on mechanisms, tools, and practices.
- Ending – the focus on breaking events, problems, and challenges.

#### Establishment of value co-creation

During the mixed-method research conducted at the establishment stage, we identified seven motives and factors influencing value co-creation between VGIE and CCI (Cohendet & Simon, 2007; Klimas, 2019; Schütze, 2003; Vallance, 2014). Four were classified at the ecosystem level, while three were at the organisational level.

At the ecosystem level, the identified motives are:

- motivations related to financial support,
- access to a skilled workforce,

<sup>11</sup> The key findings and contributions related to this specific issue are presented in paper submitted to one of thematic journals in the mid-October 2024 – recently this paper has been accepted for publication (Klimas et al., 2025). Moreover, a valuable complement to the discussion on utilization of cross-industry cooperation leading to value co-creation is the research poster developed by the WP3 team, which presents preliminary findings from the national stakeholder workshop. The poster focuses on a decalogue of good and effective intersectoral collaboration practices as well as the key anchors hindering the initiation and development of such cooperation (Klimas et al., 2024).





- increasing technological and artistic complexity of video games and other cultural goods and
- the achievement of government policy objectives.

It turns out that financial issues represent the main factor (as well as a barrier) influencing intersectoral cooperation. This means, firstly, the readiness and willingness of public institutions to financially support gaming and cultural projects. Secondly, incentives for cooperation through various public grants or tax breaks contribute to intersectoral production.

The second most significant motivator revealed by the research is access to a skilled workforce. In Germany, bureaucratic hurdles complicate hiring skilled workers from non-EU countries in the German games industry (game – The German Games Industry Association, 2023, p. 40). The chronic shortage of creative workers has led to intense competition for talent. Moreover, the growing artistic sophistication of games, combined with a concurrent lack of creative talent, seems unattainable for many developers, prompting them to look beyond their industry for solutions

At the organisational level, the following factors should be highlighted (Belyaeva et al., 2022; Laiti et al., 2021):

- the company's commitment to cultural heritage,
- the protection and revitalisation of cultural heritage, and
- commercial objectives.

At this level, special attention should be drawn to emphasising cultural objectives. In practice, developers, guided by their organisational culture or mission, can focus on delivering games embodying cultural heritage. A noteworthy example of such an approach is 11 bit studios, which created *This War of Mine*, described in more detail later in this report. This video game received the Cultural Innovation award at the South by Southwest Interactive festival in Austin. It has also been included in the list of required school readings by the Polish Ministry of National Education. Nevertheless, a strong emphasis on cultural elements often necessitates collaboration with various sectors within the cultural and creative industries. For instance, the premiere of *The Witcher 3* was made possible only through collaboration with numerous



creative professionals from different fields, including screenwriters, a symphony orchestra, actors, animators, comic artists, and even producers of the related television series. This illustrates how developers, in their pursuit of preserving and promoting cultural heritage, increasingly engage in intersectoral cooperation to create immersive and culturally rich game experiences.

Concerning barriers, we also identified seven obstacles that are considered at both the ecosystem and organisational levels (Pacheco-Velazquez et al., 2023; Coleman & Dyer-Witford, 2007; Harwood & Garry, 2014). These are:

- Difficult access to financing,
- Potential language barriers,
- Legal issues (related to intellectual property),
- Delayed intention to engage partners in value creation processes,
- Lack of familiarity among decision-makers and management,
- Conflicting objectives, and
- Insufficient network connections.

The analysis of academic literature revealed that the main catalyst hindering collaborative value creation between VGIE and CCI is the difficulty of accessing financing. It appears that many CCI sub-initiatives rely on financial support from public institutions. However, restrictive conditions for obtaining grants, complicated bidding procedures, and the lengthy duration of this process pose significant barriers and limit cross-sector collaboration.

As shown in the analysed industry reports, CCIs are taking on an increasingly important role in the development strategies of many countries (Święcicki et al., 2023, pp. 6-7), and while Europe is not the top market for the VGI, studios still have substantial potential to reach out to ambitious projects, including those involving cross-industry cooperation. Leading European game development countries (France, UK, Germany) have more than sufficient studio and employee base to run a self-sustaining local game industry ecosystem, a well-established professional game education framework, and local game industry Venture Capital (Neogames Finland, 2024, p. 17): the French Video Game Tax Credit is Europe's oldest big public support instrument dedicated to game development, the UK Video Game Tax Relief is Europe's





second oldest significant public support instrument dedicated to game development, the German Federal Funding for Video Games is the most prominent grant-based public support instrument dedicated to the game industry in Europe.

The significant financing and capital access issue is common in all national markets. In Sweden, according to the companies, the most significant and major weakness is the limited access to capital and access to public funding, which makes it hard for gaming companies to get financial resources, which makes it hard to compete with the bigger competitors (Flanders Investment and Trade, 2023, p. 6)<sup>12</sup>.

Many young development studios generally search for a partner to handle the game's publishing and distribution. Usually, those studios strive to become independent in time, acquiring some of the competencies connected with promoting and distributing their games or via the development of low-budget, free-to-play games, often mobile ones, where the developer can work on more projects and develop only those that turn out to be promising (Rutkowski et al., 2020, p. 38). Those small, less financially demanding projects could be a good starting point for cooperation with CCI actors.

Video game trade associations should facilitate opportunities for private investors and companies to connect, for example, at networking and pitching events, including existing video game conferences and events (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 11). VGI professional communities can significantly support game development by providing a peer support framework for sharing knowledge and relevant contacts, helping teams evaluate their games and game development processes, and giving support and empowerment. While this may look like a form of competition, European game developers rarely compete with each other. Finland has practically no domestic market, so local VGI does not compete internally (Neogames Finland, 2024, p. 39). This insight shows how the unique aspects of the VGI may serve as incentives for cooperation both within the CCI and beyond.

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<sup>12</sup> It is worth to note that the same issue has been brought multiple times during the project-related stakeholder workshops run under WP2.



The European Commission should also examine how existing EU instruments can help to scale up small video game companies (e.g., SMEs and start-ups) (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 11). It is also worth mentioning that multiple older game titles are currently rereleased as remakes (new interpretations of the game, its graphics and mechanics) or remasters (updated graphics and polishing of older mechanics, with no changes to the overall game mechanics or story). While this could be considered a value transfer, it is also a safe space for new ideas and a wide field for potential innovations. Remakes provide developers with multiple options to create new visuals and music, which have great potential for joint projects. However, such initiatives are not always possible because of the phenomena of the so-called “*abandonware*” titles, whose publishers are defunct, and the IP owner is unclear. There is a huge potential in bringing back older European games for modern audiences (and devices).

### **Execution of value co-creation**

The thematic analysis of academic literature performed during the collaboration phase allowed for the classification of mechanisms into three coordination mechanisms (see also Klimas et al., 2025): the static-adaptive management mechanism (Aoyama & Izushi, 2003; Vallance, 2014; Pacheco-Velazquez et al., 2023), the knowledge management mechanism (Vallance, 2014; Chaminade et al., 2020; Cohendet et al., 2021), and the proximity mechanism (Aoyama & Izushi, 2003; O’Donnell, 2013; Cohendet et al., 2021).

These mechanisms generally align with broader concepts of collaboration focused on co-creation. Interestingly, there is a noticeable lack of references to financial mechanisms - such as revenue generation, revenue sharing, value creation, value sharing (fair capture), and even value appropriation (unfair capture that may lead to value co-destruction) - despite their acknowledged significance for the success of joint efforts (Zhang & Liu, 2013; Corsaro, 2020; Shollo et al., 2022). This gap may stem from the specifics of creative industries, where entities often prioritise artistic expression, passion, and pursuing creative outcomes over financial considerations. This dynamic simultaneously paves the way for future research, particularly regarding the practical application of financial coordination mechanisms, the scope of their use, and the potential relationship between their absence and difficulties or failures in establishing or maintaining cross-industry collaboration.





Moreover, two additional issues emerged that are significant for further developing knowledge concerning the proximity mechanism. First, social and cognitive proximities, referring to similarities in both formal/professional and informal/private communication and relationships, are also crucial from the perspective of knowledge management mechanisms (Wijngaarden et al., 2020). This suggests that these mechanisms, namely proximity and knowledge management, may be interconnected.

Second, while previous studies have focused on individual dimensions of proximity, it remains unclear how these dimensions are related in this particular industry context and whether their significance for the realisation of collaboration is equivalent. In this context, it is worth noting that the necessity to engage in diverse activities and to communicate not only formally but also informally takes on particular importance for the reorientation of CCI actors. An example from e-sports shows the importance of a direct and fluid dialogue between the video games industry and policymakers is the best way to ensure the continued and sustained growth of the sector, with national and international industry-wide associations here to help coordinate and facilitate this dialogue by providing an authoritative voice for the industry, reliable information about the state of e-sports, and access to the relevant stakeholders in every territory (ISFE Esports, 2022, p. 65). This approach should be applied to the broader CCI as well.

Potentially enabling policies for EVGIE (EGDF, 2022, p. 13) include multiple sustainable solutions, like the updated immigration rules enabling cross-border remote work for solving the global talent shortage or regulations related to digital solutions, platform gatekeeping, AI, or carbon footprint. It all could positively impact the potential of EVGIE development and innovations.

Meanwhile, creative and cultural sectors are taking on an increasingly important role in the development strategies of many countries, with examples from France, Canada, Sweden, and Korea (Marszałkowski et al., 2023, pp. 6-7). It is also worth consideration by policymakers to assist in the localisation and cultural adaptation of foreign games for local markets. Such an approach helps local companies learn to develop content with local and global appeal and the capabilities necessary for international expansion (WIPO, 2024, pp. 121-122). While such approaches are unusual in the West, they are the staple of game creation in the Chinese market. While it is hard to imagine the localisation specifically for the European market, there is a vast potential in using niche cultural themes to create innovative or unique games.



### Ending of value co-creation

Although the thematic analysis of scientific publications did not reveal prior works addressing this area, field research has highlighted factors that lead to the dormancy or termination of intersectoral cooperation.

These factors include:

- financial constraints,
- legal limitations,
- misconceptions,
- challenges related to mindset,
- difficulties in predicting success (or failure) factors, and
- market challenges.

Once again, it becomes evident that the most common reason for the dormancy or termination of cooperation in this context is financial constraints. Problems related to securing funding sources, lengthy procedures, and an over-reliance on public funding have detrimental consequences for the relationship between VGIE and CCI.

Furthermore, a factor associated with financial constraints for the participants in the study has been the necessity to manage misconceptions. It appears that flexibility in funding activities, lack of consistency in perceiving finances, and distorted expectations among various entities involved in the cooperation positively correlate with the distorted perception of VGIE.

As game markets are overflowing and saturated, the competition on players tightens and drives the market towards consolidation, with the larger established game studios having better chances to secure marketplaces due to their development and marketing budgets. Sony, Microsoft, Tencent, Nintendo, Activision Blizzard, and other giants have dominated the game market's top revenues (Neogames Finland, 2024, p. 20). Nevertheless, even if national VGI potential is vital in European countries, especially France, the UK and Germany, the key challenges lie in access to experienced senior talent and strengthening and widening existing support instruments (Neogames Finland, 2024, p. 17). The cyclicity of revenues due to production cycles is a well-understood phenomenon within the VGI. Still, it can be problematic when it typically takes two to three years to produce a game before its release, which leads to periodic revenue fluctuations (Marszałkowski et al., 2023, p. 12).



There is also an ongoing discussion on the cultural value of video games in the context of State aid for video games. In 2007, the Commission's decision on the tax credit introduced by France for creating video games required assessing whether video games are cultural products and thus fall under Art. 107(3)(d) TFEU allows the "*promotion of culture and heritage conservation where such aid does not affect trading conditions and competition in the Union to an extent that is contrary to the common interest*" (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 144).

Finally, the VGI is still generally dismissed by the broader CCI. It is magnified by the lack of shared understanding of the EVGIE and its economic value. For example, in Poland, the mass media is often present, simultaneously and sometimes incorrectly, as one of the three values that describe that segment of the entertainment industry from the point of view of revenues: amounts spent by Polish consumers on video games, global revenues of the Polish companies developing video games, capitalisation of the companies from the sector listed on the WSE, on the main trading floor and the NewConnect market (Rutkowski et al., 2020, p. 27). It complicates the picture of the VGI and its interpretation by the potential partners.

#### 3.4.4. Co-innovation between VGIE and CCI

Similarly to the approach taken for value co-creation, the analysis of co-innovation adopts a processual perspective, encompassing three stages: (1) establishment (focus on drivers, motives, barriers, and aims), (2) execution (focus on mechanisms, tools, and practices), and ending (focus on breaking events, problems, and challenges).

##### **Establishment of co-innovation**

The analysis of domain-specific publications has shown that among the factors driving the creation of joint innovations, the following can be highlighted:

- cultural heritage,
- access to a skilled workforce, and
- innovative capabilities.

All in all, it turns out that the primary motivation cited by academics is cultural heritage. Video games, after all, play a fundamental role in the cultural landscape. They represent an artistic and creative dimension, distinguishing them from purely technological products. This





growing recognition is visible in shaping policy, as video games are increasingly prevalent in key documents related to cultural and creative policy (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 7-14).

Moreover, games serve as a precursor to digital artistic content, existing at the intersection of several creative fields, including audiovisual (e.g., film and animation), artistic (textures, images), and audio (music, sound from games). This, in turn, strongly mediates the need for a broad range of creative professionals (i.e., access to a skilled workforce), such as sound designers, game composers, character and concept artists, animators, interface designers, and gameplay designers (Neogames Finland, 2024, p. 36).

As thematic analysis shows, the cluster related to barriers to co-innovation turns out to be somewhat richer in themes. Researchers postulate that key issues related to co-creating innovations include:

- potential barriers associated with the use of artificial intelligence (AI) tools in the innovation process,
- potential communication barriers,
- skills gaps,
- intellectual property, and
- standardisation.

It should be emphasised that in the analysed academic literature, artificial intelligence has been so far identified only in the context of music. However, this is a much broader issue that seems to require attention concerning co-creating innovations *per se*<sup>13</sup>. To some extent, the development of AI may result in limiting the need for cross-industry cooperation for innovations as the missing creative capabilities could be ensured by AI-generated outputs (at least if we consider quite basic and low-advanced activities and operations). Among the key concerns, also, ethical worries, irreversible changes in the composition process, job security fears, technical issues, social concerns related to abuses, and worries about audience reception are highlighted (Worrall & Collins, 2023). Nevertheless, the inherent conflict between creative ego and AI may hinder the acceptance of this technology. Furthermore, the lack of technical

<sup>13</sup> It's important to note that while the academic literature focuses on AI's potential in areas related to music, this remains a relatively small segment of game production in practice. Estimates indicate that music and audio files constitute only 10% of ready-made assets in the video game industry. Simultaneously, a report prepared for Unity Technologies in 2024 states that "62% of studios turned to AI to improve their workflows, particularly for content creation and animation. 71% of those developers acknowledged that using AI say has improved their delivery and operations (Chu, 2024).





knowledge, support, understanding, and trust in AI<sup>14</sup> complicates its use (Worrall & Collins, 2023). However, despite numerous concerns, it is also important to emphasise the benefits of using AI, such as stimulating creativity, streamlining processes, and empowering employees. Another issue frequently highlighted in literature is intellectual property. The video game industry, as a relatively new creative sector, still faces a particular innovative challenge. The expectation that game developers should strive to create and ultimately utilise their IP - i.e., their own games - and consequently allocate resources to develop higher-value intellectual property through exploratory innovations is widely shared among industry players, agencies, policymakers, current and future employees, and clients/gamers/players (Christopherson, 2004; Hotho & Champion, 2011).

Video games compromise numerous intellectual property rights, including those vested in the software and game mechanics, the art, the score, the sounds, the characters and voices, and the art of the in-game world, so their publishers invest heavily in developing their games and rely on their intellectual property rights to protect that investment, market their games, and grow their audiences (ISFE Esports, 2022, p. 29). Additional public support instruments in the EU are also mapping different methods to include corporate sustainability in the eligibility criteria for public funding.

In Sweden, strong laws concerning intellectual property protection are in place. This is very important for game developers and publishers since these companies rely on this intellectual property to create revenue (Flanders Investment and Trade, 2023, p. 19). The Digital Fairness Initiative will introduce a new wave of consumer protection rules by the decade's end, and even earlier, the ePrivacy directive and AI regulation act might change how developers produce games in the EU (Neogames Finland, 2024, p. 37).

### **Execution of co-innovation**

Although the literature in the field does not indicate precise mechanisms for cross-industry innovation, one can classify them into three thematic clusters: innovations related to music, innovations related to museums, and innovations in business models.

Video games have long been regarded as a well-suited medium for generating music due to their interactive and unpredictable non-linear nature (Worrall & Collins, 2023). Furthermore,

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<sup>14</sup> Following the data provided by Eurostat, in 2023, only 8% of European enterprises (and 30.4% of large enterprises) used AI in their business activity (Eurostat, 2024).





an interesting proposal was put forth by Kiourt et al. (2015), who recommended the creation of virtual museums and exhibitions. While this example draws from serious games, it provides valuable insight into the creation of innovations between VGIE and CCI. Others (Bahia, 2023) demonstrate two ways museums can co-create innovations with video games. First, art museums may be interested in using games as elements of exhibitions (temporary or permanent), such as the Museum of Modern Art in New York, which has incorporated 14 video games into its collection. Second, museums can produce digital games using tangible collectible items (such as paintings, sculptures, and graphics) as themes.

Game-based business models create new business opportunities by providing fun and intuitive frameworks focused on metrics for existing business model frameworks (Roth et al., 2015). Gamification-based approaches can support the early stages of innovation while simultaneously addressing innovation challenges (Patrício et al., 2018). Research indicates that game-based workshops create a conducive environment for gamification at the forefront of corporate strategy, entrepreneurship, and innovation management (Patrício et al., 2020). Moreover, gamification is becoming a key tool for catalysing innovation, allowing companies to gain a competitive advantage by incorporating game mechanics into their innovation processes.

At this point, it should be noted that throughout the literature review, new inspiring themes have emerged that deserve attention in the context of co-innovation. First, the aspects of using artificial intelligence in the innovation process. Although initially framed as a barrier, this thematic cluster received a positive reception in this context. Interestingly, scholars assessed that AI tools do not pose threats but offer benefits, as they stimulate creativity, contribute to streamlining processes, and empower employees.

Second, it can be said that the effects of utilising AI tools significantly mediate the shortening of game production cycles. An intriguing example is the creation of boutique premium mobile games, produced in short cycles ranging from 6 to 12 months, which require relatively low production budgets. In the case of a game's success (measured by the number of copies sold), a quick return on investment follows (Marszałkowski et al., 2023, s. 45-47). Furthermore, this is evidence of a creative and innovative concept that lays the foundation for further endeavours.





Next, in moderate-capacity game development countries, the challenge is to encourage the creation of spin-off companies and help them become scale-up companies (Neogames Finland, 2024, p. 5). Moreover, the policymakers should actively encourage and support entrepreneurial ventures within the video game sector by providing resources, mentorship, and funding opportunities for start-ups and independent game developers to stimulate innovation and diversity within the industry (WIPO, 2024, pp. 121-122).

Such policies facilitate the movement of talent within the industry, enhancing knowledge transfer and fostering innovation. Among different areas to explore for co-innovation is virtual heritage, defined as creating virtual landscapes imbued with heritage content and presented in digital media, which has emerged as a significant area of video game application (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 151).

Given the analysed works, it seems that the execution mechanisms of co-innovation have not been clearly determined so far. Given the current stock of knowledge, we are able to acknowledge that the execution of co-innovation depends on the field of innovation implementation but also depends much on the country and its political and regulatory environment.

We can highlight differences between some of the most prominent European VGI markets. The regulatory framework applicable to the industry reflects the complex nature of video games, which affects creative content, hardware, and software, or games as a product or service. As such, the sector is subject to various regulations, which smaller companies need help understanding (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 1). The national and pan-European VGI organisations (EGDF, VGE) have a crucial role. For example, in April 2023, Ukie organised the games industry showcase of innovative games illustrating the sector's creative prowess and global impact, at 10 Downing Street, which brought together industry leaders, the Prime Minister, his wife, the Chancellor of the Exchequer, three Secretaries of State, Ministers, officials and school children for a celebration of amazing British video games, their economic impact and contribution to education (Ukie, 2024, s. 10). In Poland, various programmes offer support to the video games sector: the Ministry of Culture and National Heritage supports the Creative Industries Development programme with a cultural and economic approach, the National Research and Development Centre has kicked off the GameINN initiative, offering annual





R&D subsidies, whereas the Polish Agency for Enterprise Development provides financial support for the promotion of product brands on foreign markets (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 144-145). The Swedish government also provides funding for research and development through several government agencies. They provide funding for research and development projects, including game development and promoting innovation and growth of Swedish businesses (Flanders Investment and Trade, 2023, p. 19). Today, the Finnish video game industry is considered a pioneer in mobile games. Finnish teenagers for a long time spend the cold, dark winters tinkering with their PCs, laying also the foundation of the “*demoscene*” subculture, in which programmers and artists try to do impressive computer audiovisual demos with limited hardware (WIPO, 2024, p. 114). Given the cultural and social impact, as well as the role of the video game industry advancements, inland has listed demoscene on its list National Inventory of Living Heritage (EGDF positions on video game policies - EGDF, 2020) while Polish Minister of Culture and National Heritage provided Polish demoscene on The National List of Intangible Cultural Heritage in 2019.

Video games can also be beneficial in employing their potential to reach out to young people, become platforms to encourage youth participation and civil engagement, and potentially support economic development across Member States (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 142). Finally, when discussing heritage, we must remember that open worlds and deep storytelling are PC or console players’ most famous play motivators (Newzoo, 2024, p. 14). That creates opportunities in cooperation with the CCI for world-building or book adaptations.

### **Ending of co-innovation**

Similarly to value co-creation, no academic publications were observed while analysing emerging elements, features, problems, or challenges that may lead to the stagnation or cessation of the innovation process. This raises the question of whether it is a win-win relationship. However, there is no doubt that this area requires further exploration.

While studying industry reports, we noticed increasing uncertainty and emerging risks related to AI technologies. This is an ongoing issue. In April 2021, the European Commission presented the first EU regulations on AI to ensure the safety and fairness of using this technology



(Święcicki et al., 2023, pp. 56-57). Creators' organisations strive to introduce appropriate provisions during ongoing legislative negotiations, which mainly concern AI learning from large databases, including artists' works, which raises concerns about copyright and the threat of potential harm to these sectors.

### 3.4.5. Value transfer between VGIE and CCI

Once again, to ensure coherence across the results presentation findings related to value transfer are presented using the process approach distinguishing its establishment, execution, and ending.

#### **Establishment of value transfer**

The analysis of secondary data revealed that the research field remains unsaturated. At the establishment stage, one can only point to factors driving cross-industry value transfer, and although this is a broad set, it is not a closed range and requires further research. Similarly, the barriers were not directly described in the existing literature and remain unaddressed.

Among the motives determining the decision to transfer value (i.e. technological, immersion-related, interactivity-related, gamification-related solutions) from VGIE to CCI or the other way around, the following can be identified:

- Effective learning and knowledge transfer;
- Promotion of cultural and national knowledge;
- Building competitive advantage and market expansion.

Researchers have most frequently pointed to effective learning as the primary determinant of value transfer (e.g., Levin, 2010; Caperton, 2010; Lieberman, 2006). It can be said that the approach to learning as a game can have countless positive effects on research creativity, as evidenced by the discovery of scientific processes and products when researchers began to treat research as a "game" (Uskoković, 2023). A silent issue here is the time, which potentially can be significantly shortened to achieve assumed learning effects. The ability of games to convey knowledge is also interesting. A game is a cultural artefact with a strong narrative capacity. It promotes immersion and offers limitless possibilities, allowing educators to choose



games whose narratives adapt to prescribed content. This enables players to interact through mechanics, puzzles, or problems created within the game, thus enhancing immersion and the ability to establish interpersonal connections (Reyes-de-Cózar et al., 2022).

Finally, games open the door to creative learning, allowing the exploration of diverse topics and issues in a way that differs from traditional methods, providing space for experimentation, decision-making, and critical thinking. In this way, games become a tool for conveying knowledge and a means of developing essential social and emotional competencies.

Games – and here we are not talking about serious and educational games (!) – have not only an educational dimension but also support the dissemination of knowledge about cultural, historical, and national heritage. By bringing history closer to players, they encourage reflection and the development of attitudes of remembrance and respect. Moreover, they serve as a method for creating and communicating culture (also by presenting differences between cultures) (Kuling, 2014). Finally, conveying unique and specifically situated values allows for building respect, bonds, and shared responsibility for cultural heritage (Champion, 2020).

This implies that games are interconnected with various industries and their content in multiple ways. Such industry linkages can provide added value for game producers and other organizations from CCI, strengthening their competitive advantage. This advantage lies in the ability to leverage potential as well as to build and reinforce it. An interesting example is adapting games to entertainment media, such as books, movies, television series, or comics. Furthermore, the generation of competitive advantage is evident in the professional sports industry through the transfer of value to the esports audience, entering a new market segment, changing the purpose of operational units and skill sets, utilising existing networks and building relationships, and applying strategies for managing teams and players (Pizzo et al., 2022).

Finally, gamification can be seen as building a competitive advantage. Enriching the existing range of tools and broadening the target audience can enhance and modernise the current offering. The implementation of game mechanics has also found wide application in marketing communications. This approach to campaigning generally has a greater chance of arousing





interest and reaching a larger audience. UNICEF used this technique when disseminating the idea of charitable assistance. The challenge faced by participants involved simultaneously installing an app created by the organisation and avoiding using their mobile devices for as long as possible. Every 10 minutes of non-use equated to one day of clean water provided to communities that lacked access to it (Dineen, 2017).

VGIE occurs within interactive networks and with various devices, including smartphones and tablets. It often bridges into and spurs innovation in other entertainment industries, such that some products even offer hybrid experiences (e.g., *The Lord of the Rings* as a game, movie, and other merchandise). Players can earn money from e-sports in front of crowds and on live TV, or they can spend their money to buy virtual goods and expansions within games (Marchand, Hennig-Thurau, 2013, p. 153). Leveraging brand and IP partnerships in games to create new content can attract players and reward them with items from their favourite intellectual properties, with gaming being entertainment's latest stage for spotlighting brands and franchises (Newzoo, 2024a, p. 5). The industry's market and audience overlap is significant, with gamers frequently engaging in various game types across multiple platforms (WIPO, 2024, p. 108).

### **Execution of value transfer**

In reference to the mechanisms, tools, and practices used for value transfer during collaboration, it can be stated that the existing literature does not indicate clearly classified mechanisms. Furthermore, it can be observed that knowledge in this area remains fragmented and is still at a preliminary stage.

As a result, it is possible to identify only a few (limited) practices and methods for value transfer between VGIE and CCI. Firstly, one of the methods widely discussed is gamification. Game mechanics serve as a tool for influencing behaviour (Sailer et al., 2017) as well as for training purposes, as virtual worlds provide highly visual environments with repeatable, engaging simulations and scenarios (Levin, 2010). Such applications are acknowledged as leveraging the features of video games to successfully create engaging educational experiences and achieve specific educational goals. Furthermore, there is significant potential for applying gamified tools. Environmental sustainability, politics, and international relations are areas where players from different countries can collaborate and respond to changing situations arising from their ideas and actions (Connolly et al., 2011).





Secondly, a commonly used way of value transferring refers to the adaptation of well-known brands (product, corporate, or even personal) into a new industry context, thereby expanding the brand's existing universe to new market(s), is another significant example of value transfer. This type of transfer is particularly prominent at the intersection of the gaming and film industries (as well as the music industry). Interestingly, it can occur in both directions: from gaming to film or vice versa. Video game characters, music, and stories are increasingly present in other media we consume, such as movies, TV series, books, and music platforms, an integral part of the media ecosystem in which we all participate (European Commission: Directorate-General for Communications Networks, Content, and Technology, 2023, p. 145). Indeed, films and TV productions in the EU use video game IPs, and their numbers and perceived quality are increasing (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 10). If gamers know the IPs, having a well-known studio is less critical, making remakes and remasters a viable way to use nostalgia to capture player interest (Newzoo, 2024b, p. 30).

The power of transmedia is vital, so film and TV adaptations can increase their game of origin's engagement at the adaptation's launch (Newzoo, 2024b, p. 32). The phenomenon of the popularity of the *Witcher* character and the development of K-pop was highlighted in the Polish report on the creative industries (Święcicki et al., 2023, pp. 6-7) as examples of the global success of local brands. While the world based on Sapkowski's prose achieved success mainly from the ground up, thanks to the popularity of books and video game series, K-pop benefited from significant resources and an organised support system. On the other hand, in November 2024, Sapkowski published another *Witcher* novel, and such an act naturally sparked recurring interest in all media related to the franchise. The subsequent reveal of the new *Witcher* game in December (*The Witcher*, 2024) is a testament to such a strategy. In this case, the IP and franchise-related approach is even more profound, as the new book and the new games (a prequel and a sequel, respectively) are not connected.

Interestingly, the value transfer between the gaming and film industries often flows in the opposite direction as well, with recognizable brand value effectively moving from film to gaming. This is evident in the involvement of acclaimed creators in game development processes, such as screenwriters, film directors (e.g., James Wan, Guillermo Del Toro, Steven Spielberg, Michael Bay – Adkins, 2023), voice actors (e.g., Lucy Liu and Emma Stone in *Sleeping Dogs*



– Scherer, 2024), and even performers lending their entire likeness (e.g., Kristen Bell as Lucy Sillman in *Assasins's Creed*; Keanu Reeves appearing in the teaser trailer of *Cyberpunk: 2077* – Scherer, 2024; Arnold Schwarzenegger promoting *Heavy Artiller - Mobile Strike*, 2016). This type of transfer, much like the reverse, allows for the expansion of a brand's universe and reaching new audiences. Additionally, it enables game developers to enhance the quality and depth of storytelling, character dynamics, and overall narrative immersion. These effects of value transfer are gaining particular importance in an era of growing player expectations for rich storytelling and comprehensive sensory, aesthetic, and artistic experiences during gameplay.

In this report, the focus is given to the video game industry and its cooperation with other CCI. Nonetheless, when considering the value transfer mechanisms and processes, some additional points should be made as the practice shows that value transfer may exceed the boundaries of CCI.

The first example of the transfer of value from the gaming industry to other sectors (but importantly, not just cultural and creative ones) is the adoption of economic mechanisms and even monetization models developed within the gaming industry, which are now integrated, or even determine, contemporary business models. A clear example in this context is the adaptation of gaming-originated solutions like microtransactions, freemium models/economy, and user reward systems (originally for gamers) designed to intensify user engagement and, as a result, increase monetization. The transfer of these solutions to other industries and digital products, such as YouTube, Spotify, VOD apps, office apps, design tools like Figma, banking apps, cryptocurrencies, and messaging apps, has contributed to developing these sectors/products. However, it has also lowered the barrier to their use within the gaming industry itself.

The second example refers to transferring the value offered by e-sport to (traditional) sports organizations and users. Nowadays, many prominent global sports organisations (e.g., FC Bayern Munich, Real Madrid, and Paris Saint-Germain) belong to an increasing number of organisations diversifying into the e-sports industry (Pizzo et al., 2022) that fits the emerging trends of revenue and market diversification (as mentioned in section 2.2.). As part of these efforts, professional leagues for the 'esports' version of traditional sports (e.g., FIFA gaming) have been created, or e-sports teams have been purchased, competing in e-sports leagues that extend beyond the genre of sports simulations (Pizzo et al., 2022).





As shown, the development of e-sports is becoming an integral part of the strategies of many recognised sports clubs. Integrating traditional sports with the gaming world broadens the organisation's operational horizons and allows for reaching a multigenerational and more heterogeneous audience. The collaboration between sports and e-sports creates unique opportunities for athlete development and increased fan engagement, notably not only fans understood as players participating in esports competitions but also enthusiasts of such entertainment who form entire interest-based communities or even subcultures centered around esports. Given the fact that the population of digital natives will grow and expand, this way of doing sport or at least popularising sport may gain interest in the future. Moreover, considering the announced intention of the inclusion of e-sports in the Olympic Games (Grohmann, 2020), we can expect that this type of value transfer from e-sports to sports will be developed in the future.

### Ending of value transfer

During our content analysis, we observed an interesting implication: a lack of cohesive studies differentiating value co-creation and value transfer, which conceptually seems necessary. Moreover, this appears to correspond with the fact that, in this context, our research did not reveal any publications addressing the issues, challenges, or events resonating with the termination of intersectoral value transfer collaboration.

However, while it is obvious that legal infringement could jeopardise the potential collaboration, it is hard to point out when and how exactly such an instance may affect the creative process. Moreover, the ongoing "passive" collaboration between the game studio and the IP owner makes it even harder to pinpoint the exact termination phase. An example of the supposed termination unsatisfying to the IP owner is related to the previously mentioned most well-known Polish game series, *The Witcher*, with *The Witcher 3* being one of the most critically acclaimed and culturally impactful European titles. The author of the original novels sold CD Projekt Red the right to use his IP in producing a game. Over the percentage of the profits, he preferred a fixed (and rather unassuming at the time) amount of money (Majkowski, 2021), non-believing in the potential of the game's success (Hall, 2019). This was related to the fact that the first Polish adaptation of *The Witcher* into a movie in 2001 (and a TV Series) marketed internationally as *The Hexer*, has been a financial failure, broadly ridiculed for its shortcomings and outdated special effects (Majkowski, 2021). However, after the worldwide phenomenon of *The Witcher 3*, Sapkowski sued CD Projekt Red in 2018 for much bigger royalties, feeling excluded from the monetary benefits stemming from the fictional settings of his creation. Sapkowski argued





that the initial fixed sum contract for the rights to the books contravened Polish royalty law. He claimed that copyright only covered the first *The Witcher* game, not the trilogy of titles (Bardwell, 2020). In a letter to CD Projekt, made public in October 2018, he claimed that under Polish law, he was wrongfully underpaid for his work (Hall, 2019). *Bezprawnik*, an influential Polish website on legal, financial, and business issues, has thoroughly reported the case. When discussing the settlement reached late in 2019, several insights were mentioned regarding the case (Kralka, 2019), including the facts that the Polish legal system makes the IP related cases risky and unpredictable for both sides and that the legal battle with Sapkowski would be detrimental to the company's publicity (and, possibly, its market value). An agreement with Sapkowski secured the company rights to *The Witcher* IP in video games, graphic novels, board games, and merchandise and helped CD Project retain its reputation as a well-known VGI "good guy" (Bardwell, 2020). Such goodwill and perceived integrity help strengthen the rapport with the player base. Polish gamers are important in promoting *The Wicher* and the company on social media and forums like Reddit, effectively producing substantial marketing (Kralka, 2019). Ultimately, the relations between the author and the game producer are settled. It could show the need to always strive for mutual understanding and win-win between the involved parties when we want to succeed in the VGI-CCI cooperation.

#### 3.4.6. Positives and negative effects of cross-industry cooperation – organisational view

This section focuses on the directly identifiable positives and negatives of cross-industry cooperation considered at organisational level.

##### **Positive effects of cross-industry cooperation**

Our desk research reveals significant positive effects of collaboration between VGIE and CCI. It turns out that cross-industry collaboration contributes to building competitive advantages and innovative capabilities. A compelling example is the National Museum of Science and Technology in Stockholm, a well-established institution in the market with a long history and high status as a national museum tasked with preserving technology and industry as part of Sweden's cultural heritage. From 2013 to 2014, the museum hosted the exhibition GameOn 2.0, which opened the door to significant reflections on the relationship between video games and museums. The exhibition had an educational character as a tool for acquiring knowledge and deepening the gaming theme. The novelty factor, combined with a growing interest in





video games, significantly contributed to the exhibition's success, convincing the museum's management that video games should be included in the permanent collection both as an educational tool and as cultural heritage (European Commission: Directorate-General for Communications Networks, Content, and Technology, 2023).

Moreover, cross-industry collaboration contributes to mutual profitability and sustainability. An example here can be the purchase of complementary products, such as processors, graphics cards, monitors, consoles, VR devices, televisions, audio equipment, headphones, gadgets, better smartphones, and broadband internet access.

Additionally, in the context of R&D investments in video games aimed at developing technological and service innovations for increasingly demanding games, these solutions are distributed to other sectors and have applications beyond entertainment, as shown both in the whole of Europe as well as in leading EVGIE countries (Rutkowski et al., 2020, pp. 40-41).

Furthermore, joint value creation, innovation, and transfer stimulate creativity and technological development. For instance, the pharmaceutical industry has adopted video game technology, utilising game engines to facilitate drug discovery and development across various disease areas. In another example, real estate developers and architects are currently using video game rendering technology to create interactive digital designs, assisting in the development and construction of projects. Lastly, game engine technology has become a standard tool in the automotive industry, particularly in vehicle interface design and research and development. The automotive industry shows increasing interest in game engine technology, especially as vehicles become more reliant on software and technology. The visualisation capabilities offered by commercial game engines, such as Unreal and Unity, make these products attractive solutions for automotive applications. Game engine technology has also contributed to advancing R&D efforts by expanding simulation and testing capabilities (Ukie, 2023).

### **Negative effects of cross-industry cooperation**

Little space has been devoted to the harmful effects of inter-industry cooperation in literature. This raises the question of whether the relationship is solely positive, free of dark sides, or if this aspect is underrepresented in the literature. However, there is no doubt that these and other questions can serve as a call or appeal for further research.



### 3.4.7. The impacts of cross-industry cooperation – macro view

Many aspects of our society can be understood through video games. As Muriel and Crawford (2018) argue, our daily lives have been “colonized by the logic and mechanics of video games. Spheres of the economy, labour, leisure, education, health, and consumption are permeated by the premises that govern video games”. Indeed, gamification aspects can be found everywhere: from swiping and rushing to collect matches in dating apps (Bandinelli, 2022; Garda & Karhulahti, 2021) to playful fitness apps like *Zombies, Run!*. Such examples are part of what Fuchs et al. (2014) explain as the “overall process in which games and play-related experiences are understood as essential components of society and culture.”

The significance of cross-sectoral collaboration is vital at the macroeconomic (global) level, evidenced by numerous examples of practices and literary reports in four clusters.

#### **Economic growth**

When scientists, journalists, and industry professionals consider the significance of the video game sector, one of the main aspects they often discuss is its financial success. Indeed, video games are viewed as a thriving international industry that significantly contributes to the economy. For instance, the European video game sector is valued at over €23 billion annually (ISFE & EGDF, 2022; Neogames Finland, 2024), and in the UK alone, the industry supports 71,400 jobs and contributes £5.1 billion to the economy (Ukie, 2023). In 2021, Europe was the third-largest video game market in the world, with revenues 4.3 times higher than those of the music industry and 1.8 times higher than those of video on demand (Neogames Finland, 2024). This sector has also significantly expanded during the COVID-19 pandemic (Statista, 2021), with an estimated increase from 222 million European gamers aged 6 to 64 in 2019 to 246 million in 2023 (European Commission, 2023). The profile of gamers is also broadening in terms of diversity: it is estimated that in 2021, 47% of women in Europe played video games, compared to 45% in 2019 (ISFE & EGDF, 2021).

#### **Culture**

When examining the value of video games and the video game industry, it is important to consider how they create a unique culture while also reflecting the broader culture in which we live. Muriel and Crawford (2018) recognise these two aspects and define video game





culture as “*the institutionalization of practices, experiences, and meanings related to video games,*” while noting that culture is neither homogeneous nor monolithic - “*Video game culture is diverse, complex, and continually evolving*”.

The side effects of VGI are also evident throughout the CCI. For instance, as commented when considering the cross-industry value transfer, the convergence of video games with film and television has resulted in a rich, interrelated media landscape, filled with multiple failures but also significant and inspiring successes. This media convergence illustrates the significance of VGI in expanding the narrative and artistic possibilities available to creators and audiences. It underscores the importance of video games as a cultural touchstone that shapes contemporary storytelling and entertainment (MacDonald, 2023). In recent years, video game exhibitions and museums, festivals, and tournaments have also proliferated, highlighting the importance of video games in promoting community engagement and providing new career opportunities (Eklund et al., 2019; Taylor, 2012; Witkowski, 2012).

However, it is worth noting that video game culture co-creates a broader cultural sphere and serves as a lens for analysing larger issues in contemporary society. For example, video games have traditionally been viewed as a gendered hobby dominated by men. Although data shows an almost equal gender split among players<sup>15</sup>, women are often overlooked or marginalised by both players and the industry (Chess, 2017; Cote, 2020). This discrepancy is evident in the fact that in 2020, women comprised only 22% of the European VGI workforce (European Parliament, 2023). Similarly, research indicates marginalization of players based on ethnicity or sexuality (Gray, 2017; Ruberg, 2019), as the industry continues to be dominated by white employees (e.g., 90% in the UK VGI, as reported by Ukie, 2022). At the same time, there is evidence suggesting that inclusive design in video games can help reduce various forms of exclusion, thereby leading to greater inclusion of women (Mozelius et al., 2022), low-income or ethnic groups (Dawson, 2014), and individuals with mental or physical disabilities (Heron, 2012; Malinverni et al., 2017).

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<sup>15</sup> As we already commented, it should be noted, that even though it is reported that women represent 45% of gamers, such statistics are highly sensitive to the type of games and devices/platforms used for playing (Cook, 2024). Nonetheless, when it comes to employment in the industry, in Europe, women represents 24.4% labour (Video Games Europe, 2024, p. 15).



## Social dimension

Video games can also reflect and elevate current political and social discussions through their narratives and character representations. For example, video games like *Papers, Please* and *This War of Mine* tackle complex social issues such as immigration and war. Through these themes, they invite players to consider the struggles and ethical dilemmas faced by individuals in difficult situations (Formosa et al., 2016; Muriel & Crawford, 2018). Furthermore, the recent backlash against the inclusion of ethnically and sexually diverse characters in popular franchises such as *The Last of Us Part II* (Byrd, 2020; Tassi, 2020) and *Assassin's Creed* (Kim, 2024; Murray, 2024) reflects a broader social discourse on diversity and cultural openness. Such controversies underline the importance of representation while showcasing resistance from those who view certain changes as part of a “woke” culture.

As Gershenfeld and Anst (2021) suggest, video games can serve as a bridge to understanding culture. They provide a unique opportunity to create worlds rich with cultural nuances that introduce new ideas and offer us a better understanding of our current social climate. They present a microcosm of our social fabric, its tensions, and the pursuit of equality and integration, all while driving various sectors forward through digital advancements.

It is also worth highlighting the significance of video games in fostering social relationships, social interaction, community building, and shared identity formation as well as providing mental stimulation and stress relief (Entertainment Software Association, 2023, p. 3). However, when considering the societal impact of games, including their influence on communities, one must not overlook the potential negative effects. These can include addiction (with WHO having recognised gaming disorder as a distinct medical condition) as well as the creation of virtual spaces that may encourage aggression, violence, or brutal behaviour (Orlando & Parry, 2018).

## Environmental and climate protection

In the context of environmental protection and climate transformation, two key issues seem to emerge when considering the video game industry. First, nearly one-third of the global population plays video games, giving game developers a substantial channel to reach a significant portion of the global community, which can be leveraged to promote pro-environmental and pro-climate attitudes. Second, the industry itself is highly energy-intensive (a trend likely to increase with the growing use of AI). Therefore, it should actively work - or be appropriately



institutionally incentivised - to reduce its carbon footprint, for example, by investing in and utilising renewable energy sources. Recognising the consequences of the climate crisis, the gaming industry takes its social responsibility in this area very seriously. In early 2022, *game* (the association of the German games industry), together with the co-organiser of Gamescom, *Koelnmesse*, created a program to make this networking event embrace a comprehensive climate protection program game – The German Games Industry Association, 2023, p. 61). As per the program goals, all emissions from the main event that cannot be avoided or reduced will be offset entirely in collaboration with climate experts. There are numerous examples of pro-environmental initiatives within the video game industry, some of which have genuinely global reach. Initiatives like the *Playing for the Planet Alliance*, *Green Game Jam*, *Xbox's Carbon Aware Downloads*, and *PlayStation Environmental Goals* demonstrate the potential impact and developers' awareness. However, there is room for even more effort. Institutional support could play a key role, not only through financial assistance (e.g., for thermal modernization or renewable energy adoption) but also via awareness programs. Such initiatives could highlight that pro-environmental approaches not only reduce costs but are also increasingly valued (or will be even required) by the emerging Generation Alpha. At the same time, however, it is impossible to overlook the issue of greenwashing. Therefore, all initiatives, including those driven by institutional support, should be carefully monitored to ensure they deliver tangible environmental benefits.

### 3.4.8. Inclusiveness in games and within the video game industry

The inclusiveness theme is addressed from various standpoints, but Equity, Diversity, and Inclusion (EDI) become more apparent in both<sup>16</sup> – academic literature and industry reports. However, the most visible impact of inclusiveness principles is revealed in the games itself. First, regarding gender equality, inclusion is manifested in avatar representation for transgender and non-binary players in-game spaces (Thomé Klock et al., 2024). Modern games, like *Baldur's Gate 3*, often replace traditional choices of sex or gender with choices related to body type and identity, which are not necessarily linked. While this is still controversial, especially from the point of view of the more conservative communities, allowing players to express their identity is now more prominent, especially in role-playing titles. Worth commending is the inclusion of well-written characters representing communities that need a justified presence in games to promote equity, diversity, and inclusion. The same trends are now preeminent in other media, especially movies and TV series.

16 Regarding EDI it would be good to read also Deliverable 5.2. of the GAMEHEARTS project (Klock & Hamari, 2024).





Gender equality is also targeted by promoting awareness of gender-inclusive indicators for Software Engineering students and general promotion of mindset towards developing STEM skills without gender limitations (Thomé Klock et al., 2024). Moreover, the inclusion of previously omitted targets by game developers (like older persons and women) has already been widely recognised (Millington, 2014, p. 2), and the economic and technological barriers have already been surpassed, making almost every consumer a potential gamer (Marchand & Hennig-Thurau, 2013, p. 149). The role of women in the industry's growth and diversification has been acknowledged as, according to some research results, 47% of European gamers are female players with an average age of 32, which goes beyond an established stereotypic profile of video gamers as male teenagers (Reyes-de-Cózar et al., 2022, p. 2). The age diversity and inclusion of players representing various generations are also visible in creating new media that holistically treat the rights to respect and protect younger users (Thomé Klock et al., 2024).

A more inclusive environment regarding various disabilities is also more commonly represented within the practices adopted by the sector with the serious games, which, while not directed to the broader target audience, positively promote VGI as a valuable ally for education, healthcare, and other important fields. More products are designed to foster intellectual disabilities (i.e., ID, Autism Spectrum Disorder (ASD), or Asperger syndrome), aimed to improve their social and cognitive skills. Also, the unique needs of visually impaired players, auditory disability, or learning disabilities are more commonly targeted, and customisation is not only dedicated to mainstream users (Felicia, 2020, p. 37).

Regarding employment in VGI, the inclusion and diversity rate has improved recently. However, the need for improvements is still reported, especially regarding broader demographics and gender enclosure (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 1). There are some noteworthy initiatives that address this need from a formal standpoint. One of them is establishing a Diversity Working Group in early 2021 by Video Games Europe and EGDF. It aimed to enhance gender equality and diversity within the industry and promote legislative issues (Video Games Europe, 2023, p. 27). Among the other initiatives, we may mention Woman in Games, Hier Spielt Vielfalt (#TeamDiversity in Germany), #PlayEquall, Diversi, and #RaiseTheGame. In the UK, the Impact Campaign was introduced in partnership with Many Cats Studios, focusing on outlining the talents of disabled and neurodiverse UK-based games industry professionals within various themes, fields, and levels (Ukie, 2024, p. 17).





Some recommendations could be useful to address the inclusiveness issue from the broader, legislative perspective. There are postulates that the main support could cover identification and trespassing of good practices exchange. Good examples of EU companies' practices designed to implement inclusion and diversity initiatives could be collected and transmitted by Member States and European Agencies, including the European Commission, as partnering with industry would result in creating a room for forums of knowledge dissemination and unlimited learning process (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 13).

### 3.5. Conclusions

Given the conducted thematic analysis of both academic literature and industry reports the following conclusions may be drawn.

#### **(E)VGIE characteristics**

In the report, the understanding of the VGIE is based on the diverse character of the actors and their goals, perceptions, and capabilities. This is why so much attention is put into considering the role of regulators and policymakers from as many angles as possible. While we may speak a lot about the fantastic capabilities of the VGI-CCI cooperation, it is evident from the scientific literature, industry reports, and experts' recommendations that the political institutions' capable facilitation of the process is crucial. Moreover, the "European" VGIE context is not always easy to grasp. The role of EGDF and VGE organisations and the PEGI age rating system has been highlighted. The endorsement of those projects, along with the policies regarding State Aid and other public support (especially for education and the talent pool), is recommended as the pillars of future EU (especially EC) support of the EVGIE.

#### **Value co-creation**

Based on our analysis we may point out that the full recognition of co-creation practices and praxis between VGI-CCI remain limited. We may also see the need to further expand the understanding of mechanisms that underpin the co-creation process, addressing the recognised expectations and needs of the CCI entities with a particular focus on the application of financial coordination mechanisms that turned out to be pivotal. Finally, a more comprehensive examination of the broader impact of EVGIE regarding the co-creation practices should point out the diversified standpoints.



### **Co-innovation**

Regarding the co-innovation theme, our analysis outlined the focus on increasing uncertainty and emerging risks related to AI technologies, and the issue of securing intellectual property seems to be a fundamental factor driving the potential co-innovation practices. AI seems to be the most frequently addressed challenge and the need to address it in both- policy and practices employed by companies is highly essential. Finally, the trends and expectations of the actors involved should be investigated to understand how to orchestrate the co-innovation coordination.

### **Value transfer**

The academic literature, industry reports, and the experts' insights make it evident that value transfer is the most common, easiest, and often profitable form of cooperation. However, such projects do not always involve active participation from different actors, as, like in the case of the novel adaptation, the author does not have to be directly included in the artistic decisions if they expand the IP. The same goes for movies and other media. Nevertheless, value transfer is an excellent way for VGI-CCI cooperation and transmedia storytelling and should be supported.

Similar to other forms of cooperation, there is an extreme lack of relevant and reliable cases describing the reasons for project endings or failures, elaborating on breaking events, problems, and challenges that led to the end of cooperation. This demands future research, primarily via qualitative and quantitative surveys among the EVGIE actors, with some additional insights from the broader CCI.

### **Positives and negatives**

The analysis of the relevant literature allowed for the aggregation of data into two thematic clusters, which were labelled with positive and negative sentiments.

It turns out that among the positive effects of collaboration and co-creation between VGIE (video game industry) and CCI (cultural and creative industries), one can identify: building competitive advantage and innovative capacity, mutual profitability, and technological innovation.



The impact of VGIE on other creative sectors can also be negative. Although these are marginal occurrences, it is still possible to point to distrust and misunderstanding stemming from the perception of the video game industry as competing with new technologies in the market (while this aspect could be viewed as a prompt for collaboration and joint creation).

### **Macro impacts**

Cross-industry collaboration plays a significant role in the macroeconomic (also global) context, as evidenced by numerous literary examples.

It can be said that the video game industry plays a key role in the global economy, and its financial success and dynamic growth are impressive. This fact is supported by statistical reports (e.g.: ISFE & EGDF, 2022; Neogames Finland, 2024), indicating that the European video game sector is valued at over 23 billion euros annually.

Furthermore, the culture of video games is diverse, complex, and constantly evolving, thereby co-creating a unique and broader culture and serving as a lens for analysing wider issues in contemporary society.

Video games can also reflect and reinforce ongoing political and social debates through the content, narratives, and character representations they offer. It is worth noting that creating diverse, inclusive narratives enriches social discourse. Moreover, from a macro perspective, it is important to recognise the long-term influence of video games on players' attitudes and even behaviours by promoting values, beliefs, norms, and principles of social coexistence. The significance of games in this context is particularly notable, given that they have become the most popular form of entertainment today. Alongside social media, they serve as an excellent platform for promoting cultural values, making their role in shaping societal perspectives increasingly impactful.

Finally, the video game industry takes its social responsibility very seriously by engaging in activities aimed at sustainability, particularly concerning the climate crisis. This is evident in numerous initiatives, such as energy-saving strategies and the use of green energy.





## Inclusiveness

Including EDI in the broader policies encompassing the EVGIE is undoubtedly important from the perspective of all the involved groups: gamers (inclusion of diversified groups, minorities and targeting the specific needs of a broad range of disabilities allows to get access to the products limited previously to a privileged group of users), producers (expanding the perspectives and enhancing the creativity level by more diversification of employment) and policy-makers (as the games are culture transmitters, addressing the pivotal issues of inclusion and diversity and promoting viable practices, has a broad impact on societies). However, the most difficult challenge from the VGD standpoint is to implement EDI in a balanced way and find the possibilities to adequately merge the game context with the efforts to include diversity and inclusivity and not to lose the game settings' authenticity.





## 4 INSPIRING CASE STUDIES OF SUCCESSFUL EVGIE-CCI COOPERATION

### 4.1. Introduction

The following chapter explores the case studies of video games (and game-related initiatives) that may be considered a worthy **inspiration for new projects, as well as blueprints or good practices in the cooperation between the VGI and the broader CCI**. We have researched a series of games and game-related initiatives from different genres directed to various target audiences. All titles were produced by European game studios and published by a European publisher, except the game *Eternal Sonata*, which was recommended during the GAMEHEART project-related workshop (run as a part of WP2 of GAMEHEARTS project) by one of the panellists and is one of the most unique examples of the VGI-CCI cooperation in the field of classical music. We have also supplemented the analysis of games with a case study of a game-related music festival. In total, we analysed nine cases. We can divide the cases into two categories: major cases / minor cases and expert recommendations / further examples. We present all of the cases following the framed structure: first, we present the Game and the studio; next, we discuss the CCI-related aspects; and finally, we analyse the insights for the EVGIE.

### 4.2. Research design

We provided the content analysis of the secondary data gathered from diversified sources:

- The recommendations emerged within the research team's participatory observations conducted during the Panel workshops organised within the GAMEHEARTS project in April 2024, when VGI and CCI representatives discussed their experiences with cooperation<sup>17</sup>. We covered as cases (both major and minor) all the titles mentioned during the workshops related to various projects involving cooperation within the CCI. Those examples encompassed both finished and unfinished cooperations and projects that were successful in some respects (artistic value, acute use to national culture) but unsuccessful in others (financial profit, global recognition).
- The supplementary insights were delivered by two external experts supporting the project in its various stages. Their knowledge and experience allowed us to gain maximum synergy between different forms of our project-related research tasks and provided various insightful recommendations.

<sup>17</sup> A detailed information is presented in the paper being under review and is included in the final deliverable D2.2. Stakeholders Workshop report.





- To triangulate the data source, we have also used the examples that become apparent in the comprehensive analysis of the industry reports.

Following the methodological suggestions regarding the case study analysis to be contextually bounded (Sayer, 1992), we have provided context-specific explanations. Our goal was to explore the complexity and multiple iterations that could be outlined within our cases (Welch et al., 2011). Using the explorative case study as a research method (Ellram, 1996) was relevant to address the following research question:

**RQ5:** *What are the success and failure factors of cooperation, co-creation and co-innovation, and value transfer between the VGIE and other CCI entities?*

As we wanted to understand the contextual conditions of cooperation, co-creation, and co-innovation, using the case study method was justified (Yin, 2018).

In our case study analysis, we have followed an established procedure (Beverland, Lindgreen, 2010):

- We justified the usefulness of the method to accomplish the research goal and explore the success and failure factors of investigated phenomena (as we investigate the relevant context).
- We decided to use multiple case studies which were purposefully chosen (Goffin et al., 2019). Our sample size (9 cases) was in line with the formal case study research recommendations (Eisenhardt, 1989).
- We have used various data sources to triangulate the data and provide multiple perspectives on the case studies analysed (Gibbert & Ruigrok, 2010).
- Finally, we have analysed the data using aggregation of data and searching for emerging patterns (Dubé & Paré, 2003).

The listed examples should always be considered not a one-dimensional success story but a multidimensional case study, with some positive and negative aspects, with bright ideas and controversies, with critical praise of some aspects, and complaints against others.



We have shown a successful incorporation of themes related to national history, culture, and historical figures in commercial video games that got international attention. They should be considered an important, multifaceted case study of potential ways of incorporating CCI entities into the design project of a game benefiting from the mutual engagement of the combined potential of the diverse actors within a given national (or European) CCI ecosystem. We have further investigated the following cases:

- *Kingdom Come: Deliverance* (major case, workshop participant's recommendation);
- *This War of Mine* (major case, workshop participant's recommendation);
- *Assasins`s Creed* (major case, further example);
- *My Memory of Us* (minor case, workshop participant's recommendation);
- *The Thaumaturge* (minor case, workshop participant's recommendation);
- *Cypher`s Game* (minor case, further example);
- *Hellblade: Senua`s Sacrifice* (minor case, further example);
- *Eternal Sonata* (minor case, workshop participant's recommendation);
- *Game Music Festival* (minor case, workshop participant's recommendation).

The fact that four cases are directly related to the Polish VGI is not incidental. The researchers and their research participants are mostly connected to this national industry. However, from both the literature and further sources, it is evident that *This War of Mine* is a unique example of using history and war themes in a unique cultural and educational manner. The minor case of *The Thaumaturge* gives more insight into how different the same publisher could endorse history-oriented games. *My Memory of Us*, on the other hand, is a less-known representative example of a game rooted in the national heritage and dealing with emotions concerning the whole generations in a given nation, in a similar way as the well-known Ubisoft's *Valiant Hearts*, or *Last Train Home* (by the Czech studio Ashborne Games) that dealt with the soldiers` experiences of the Great War. Similarly, *Cypher`s Game* is an excellent example of a history / national heritage-related game produced solely for educational purposes by a public institution (Polish Institute of National Remembrance) but receiving a positive critical response. Those titles are also the source of further examination and project-related insight and recommendation, as the representatives of the mentioned game studios and public institutions were participants in the qualitative research conducted in late 2024<sup>18</sup>. Those interviews will provide a further synergy with the following case analysis.

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Results of this research step implemented under WP3 will be reported in Deliverable 3.3.



When discussing video games created in collaboration with the CCI or inspired by historical and cultural themes, it is hard to omit many games whose target audiences are strategy and history enthusiasts. Series like *Civilization*, *Age of Empires*, *Europa Universalis* (and its successors: *Crusader Kings*, *Victoria*, *Hearts of Iron*, among others), and *Total War*, as well as many other stand-alone titles (like 2024 Polish sleeper hit *Manor Lords*, interesting as a highly successful one-man project) in both strategy and action-adventure genres and many others, are great examples of how European and global history can inspire game developers. We also have multiple mobile games that, while much less advanced in mechanics, still can nudge the player to learn more about history and civilisations. While the strategy games are obvious examples, we have multiple other genres deeply immersed in history, with the *Battlefield* series being one of the most famous European examples. DICE, the Swedish studio standing behind the *Battlefield* series, made a significant effort to include the knowledge of military experts and historians in their franchise. Even fantasy games could have clear European cultural and historical inspirations, like the latest single-player instalment of the *Elder Scrolls* series (*Skyrim* with clear influences and tropes stemming from Nordic mythology and folklore), with the similar case of the critically acclaimed *The Witcher 3* arguably promoting Slavic folklore and myths via elaborate storytelling and worldbuilding. This approach is also visible in the recent promotional materials of the new game in this franchise (*The Witcher*, 2024). The Finnish studio Remedy Entertainment also used European folklore and the support of European music institutions in creating *Alan Wake 2*. Further focus on the mentioned titles would help study the development of separate genres and the use of national history and culture to enhance the game content and mechanics. Still, considering our focus in the EVGI-CCI collaboration and after the reconnaissance of contemporary titles, we believe the topics of historical inspiration are deeply covered by *Kingdom Come: Deliverance*, which is the most stellar example of a successful adaptation of national history and context into a European video game directed to the general audience, not only a history enthusiast or a strategy fan.

To expand the topic of European titles distinguishing themselves from others by their huge influence or novelty, we have covered more cases to provide more project-related insights, inspired both by the experts' recommendations as well as our research regarding the topics of using the broader aspects of CCI in the EVGIE projects. We have chosen the major example of the famous and well-known *Assassin`s Creed* franchise and then covered a few more niche but inspiring cases. We do, however, cover literal examples of games





using the exact value-transfer in the form of a literal book or movie adaptation. There are plentiful of those, like the latest Polish examples from the already covered example studio 11 Bit-Studios: *The Invincible*, based on the eponymous novel by the most famous Polish sci-fi writer, Stanisław Lem (11 Bit-Studios, 2023) or the planned game based on the book by the well-known Polish Author and Nobel Prize Winner, Olga Tokarczuk (<https://notesfrompoland.com/2024/10/07/studio-co-founded-by-olga-tokarczuk-to-make-game-based-on-her-work-wins-e4m-grant/>). Such category is covered in more detail and from a different angle in a related subchapter on the value transfer as one of the forms related to the VGI-CCI cooperation. Nevertheless, it is worth noting that adapting other cultural products into video games (and *vice versa*) is still one of the most prominent forms of merging different sectors of the CCI. On the other hand, while using history and cultural heritage is more demanding, it is still among the preeminent examples of creating games with a society-beneficial added value. Such examples are covered in the following parts of this chapter, with three major examples and the selection of additional examples. To magnify the similarities and central themes of the selected case studies, we later performed the cross-case analysis, separately for the major and minor cases, and finally distilled in the chapter conclusions.

### 4.3. Analysis of case studies

#### 4.3.1. Major case #1: Kingdom Come: Deliverance

##### The Game and the Studio

Inspiration for the primary case study presented in this report stems from the discussions during the expert panel organised by the authors. When the participants were discussing potential genres for a game involving the historical character of the first Polish king, Bolesław Chrobry, one of the participants mentioned *Kingdom Come: Deliverance* (Warhorse Studios, 2018), often shortened to KDC, a 2018 action role-playing video game developed and published by Warhorse Studios (co-published by Deep Silver), a part of the VGI in the Czech Republic. The game is set in the medieval Kingdom of Bohemia, an Imperial State of the Holy Roman Empire, focusing on historically accurate content. The game is a preeminent example of the successful use of deeply elaborated national history in a video game appealing to a broader global audience. The game has high recognition globally and is praised locally, as in the context of the global VGI, it is an inspiring case study from a small European country that, over the years, progressively developed its national VGI potential. After its release in 2018,





the game was primarily ranked positively (Saed, 2018) and achieved multiple awards. The game was nominated at the 1st Central & Eastern European Game Awards for “*Best Game*” and “*Technology*”, winning the award for “*Narrative*”. Among this and other awards, the game won the “*Best Game of the Decade 2010-2020*” award at the 11th edition of the annual Czech Game Awards, and it is arguably the most successful Czech video game ever produced.

The development studio Warhorse launched a Kickstarter campaign so people could support their effort or show interest in their PC game. After a short time, more than 35 0001 backers financially supported this project, which aimed to create the most realistic depiction of the Middle Ages in e-games (Warhorse Studios, n.d.). While it is reported that KCD initially struggled to find a publisher willing to take a risk with a medieval RPG (Majewski, 2022), it is understandable, considering its novelty. It needed sound and precise selling points, and realism became one of them, helping to distinguish the game from the far more common fantasy RPG titles, fuelling a successful crowdfunding campaign, and leading to a publishing agreement. For this to happen, it was not enough to decide on realism – this intent for realism needed to be communicated to the public, to always convey the developers’ authority on the authenticity of the in-game 15th-century Bohemia. The marketing materials for *Kingdom Come* made a powerful promise of the historical accuracy of the setting, and the creators made a solid effort to employ strategies that reinforce the idea of *Kingdom Come* as a historically accurate game.

Following the game’s success, the developers started working on the sequel as early as July 2019, with the creative vision of making *Kingdom Come: Deliverance II* the game that *Kingdom Come: Deliverance* was supposed to be according to developers plans, but Warhorse Studios could not deliver at first due to a lack of resources and experience (Warhorse Studios, 2024). The British actor Tom McKay, who portrays Henry, the protagonist of the series (and the player character), has revealed much information about the sequel during an interview with a German video-game portal (Halley, 2024). McKay spoke about new inventions and technologies implemented in the game mechanics. While it is natural that the game developers still use the support of historians, universities, and museums in the creation of the realistic, immersive, and believable medieval world, there are also new technologies implemented to increase the player’s immersion through facial capture technology for dialogues and the use of stunt riders during the development of the riding parts of the game.





### CCI-related aspects

As a medievalist game, KCD stands out as a very focused project based on a specific date, the year 1403, and a specific location in the Kingdom of Bohemia. The player controls a fictional character, Henry, who must find himself in a civil war between the heirs of the late Emperor Charles IV, struggling to survive and looking for revenge after the murder of his parents. While our character is of (as it seems at the beginning) humble origins, we follow the historically accurate retelling of the Central European power games of the period. While playing, we observe the political unrest under the reigning king, Wenceslaus IV of the Luxembourg dynasty. The game helps to explore the history of the Middle Ages in a more vivid form and with greater integrity through the role-playing specifics of the game in the first person, significantly increasing the level of immersion in the virtual medieval world (Sukhov, 2023).

The combat system is a creative way to demonstrate the historical characteristics of weapons based on the interpretation of written evidence. Developers also had to make compromises regarding intangible matters essential to provide immersion. Interactions between characters sometimes show an approach to relation based on an interpretation of the medieval social convention (Bostal, 2019). However, it is also evident that Warhorse was willing to acknowledge that its commitment to a faithful representation of the past was selective when the game mechanics did not allow it. This acknowledgment that the game sacrificed accuracy for playability is not controversial. It is an understandable result of the technical limitations of game systems, as well as considerations of playability (Young, 2021). Thanks to the bigger budget and workforce, the studio reportedly adds more realism and sophisticated mechanisms to the sequel (Warhorse Studios, 2024).

*Kingdom Come: Deliverance* and similar projects are engaging ideas for historians. Its aim of historical accuracy makes it an oddity among mainstream video gaming productions (Peppiatt, 2016). It allows us to draw a parallel with historical reenactment as another public use of history aiming for accuracy (Bostal, 2019). The difference between KCD and other RPG games dwells in the innovations, as an elaborate and source-inspired sound thought combat system that is the closest way of experiencing a real fight, the simulation of the world through quests, dialogues, combat, or survival (Neumann, 2019). The game's success, despite its undeniable flaws and limitations, stems from the fact that players enjoy immersion into a medieval era that can provide as much authenticity and realism as possible.

The success of this Czech game is worldwide. For many players, it has provided enough stimuli, visual tools, and researched information to motivate them to learn about and participate in medieval life and society. Bostal (2019) argued that KCD is, above all, a game about Czech history. It is hard to disagree. Masaryk University in Brno even created a series of lectures focused on the game, in which historians demonstrate the similarities and differences between the real medieval world and the differences (Neumann, 2019). While *Kingdom Come: Deliverance* remains an extremely classical first-person role-playing game and does not revolutionise video game mechanics, it stands out in a medieval open world with fictional elements. Beyond its medieval background, the events depicted bring to light a mostly unknown national history, thanks to a very “*personal*” project of the much invested in the games Warhorse Studios’ developers. However, it remains a game that involves compromises to its gameplay and a specific interpretation of history.



**Figure 3. The Kingdom Come: Deliverance II promotion during the Gamescom 2024 in Germany and PGA 2024 in Poland**

Source: Photos by Michał Bobrowski and Patrycja Klimas

### Insights for the EVGIE

Historical digital games can significantly influence the understanding of their subject period, and there is growing evidence that this effect can be more profound and more pronounced than that exerted by other media. While violence is common and possibly natural in medievalist video games, it is worth noting that a section of players seeks to avoid combat across almost every game through their decisions and counterplay. Ludic digital medievalism is often more nuanced than bloody and brutal combat. However, to move away from a focus on violence,



these games must overcome conventions around both their structure and theme (Houghton, 2024). In KDC, while combat is imminent to playing as a knight, there are multiple ways to avoid it by using stealth or diplomacy. It makes the game possibly more appealing to players willing to experience more than just combat.

There is also a still controversial issue regarding the representation of people of colour in games, including this exploring historical settings, and there is also scrutiny focused on Kingdom Come Deliverance concerning this topic (Young, 2021). Daniel Vávra, the game's lead designer, insisted on the game's historical accuracy, linking '*realism*' to the representation of race and gender in Kingdom Come (Shimshock, 2015). While it could be tempting for game developers to dismiss claims related to cultural representation bluntly, it is not recommended, especially in a project expected to provide added value by using historical and cultural references. No one expects video games to be literal adaptations of history, and there is always space for creative decisions. While it is hard to decide how significant should be such representation and in what form, we still should be aware of the needs and sensitivities of people of colour, and all matters regarding this issue should be treated with openness and tact to keep the values of diversity and inclusiveness intact in games directed to the general audience. The sequel is supposed to address this issue (Wetterau, 2024).

Considering the success of KCD, it is assured that it will preserve its identity as the most accurate game based on the medieval period. Historians can be pleased that aiming for historical accuracy, even with flaws, does emerge in mass-consumption industries such as video gaming. KCD stands out as the prime example of the innovative use of the potential usually reserved for more traditional CCI's but for the creative process of video game making. In the European VGI context, Kingdom Come is a unique example of a game that uses entertainment to promote the scarcely known history of a smaller European Central European country, not much recognised as a part of the more significant historical event by an average player. Unsurprisingly, panellists of the GAMEHEARTS project brought this title as a potential blueprint for a video game promoting Polish historical figures. The same instant could be exchanged for other European countries, especially for historical figures or periods appropriate to promote a shared sense of European identity.





### 4.3.2. Major case #2: This War of Mine

#### The Game and the Studio

During the part of the workshop devoted to the barriers and hardships in implementing national history in games having educational and significant gameplay value, the panellists mentioned two titles related to the 11 Bits Studios: *This War of Mine* and the more recent *The Thaumaturge* (also discussed later in the report in the section about additional examples of CCI related games). *This War of Mine* (TWoM) (11 Bit Studios, 2014) is a game developed and published by the Polish VGI company 11 Bit Studios in November 2014. The game is known as a cult classic, as well as a prime example of merging entertainment with profound educational content in an unexpected way.

In an interactive form, TWoM visualises the gruelling experiences of the civilian population as victims of war. Among inspirations, the studio mentioned especially infamous the siege of Sarajevo (11 Bit Studios, 2014a), which is, in fact, one of the most vivid examples of inhuman total warfare not experienced in Europe since WW II, and unfortunately cyclically repeated on the EU peripheries, like the ongoing Ukrainian struggle against the Russian invasion. To create moral gameplay, the team needed to balance emotional realism and entertainment (de Smale, Kors, & Sandoval, 2019, p. 404), which they mainly achieved by creating a game that shows the struggle of the civilians but is challenging (even frustrating) for the player and treating the theme of war seriously.

The game stands out in both European and global gaming by focusing on civilian wartime experiences rather than traditional combat-focused narratives from military perspectives. This unique approach shifts away from typical war game mechanics of frontline battles and command strategies to explore the human impact of conflict on ordinary people. The game has acquired universal acclaim, primarily because besides its great gameplay value, it is essentially an anti-war game with great educational value. In Poland, it is the first video game ever introduced on the school's reading list, a unique initiative (Tilles, 2020), and it is worth an additional comment, which will be presented in the subsequent part on the insights stemming from this game.

#### CCI-related aspects

The 11 Bit-studios used video games as the medium that crossed its expected boundaries in pursuing genuine use of the player's immersion for education purposes, magnified by emotions



and critical thinking. The game forces an emotional response and ethical considerations from the player, with the non-romanticised wartime challenges, including murder, starvation, and sex trafficking (Bjørkelo, 2018, p. 184). Such an approach serves to amplify the overall player's understanding of the diversity and scale of the tragedies of war.

The game's message is unique among other wargames because it does not show how glorious or epic the war is. In *This War of Mine*, war happens to civilians much more than soldiers, forcing the civilians (encompassing not only individuals but the families) to make difficult choices for survival (Bjørkelo, 2018, p. 169). Being both visually inspired by magazine coverage of the siege of Sarajevo and also drawing on the developers' family memories of the German occupation of Poland, TWoM offered an intensely bleak look at the difficulties and moral compromises of life under brutal occupation (Kikuchi, 2024).

To achieve a realistic moral experience of war, the designers incorporated game mechanics not often found together in conventional military war games (de Smale, Kors, & Sandovar, 2019, p. 388), like ambiguous moral choices, not having an onboarding process (tutorial). Finally, there is no respawning, so there is always the challenging and frustrating mechanic of the "permadeath". Also, the gameplay includes nonplayable children, whose presence in wargames usually omits the controversial topic of players being responsible for children's deaths.

*This War of Mine* has made a prestigious achievement by joining New York's The Museum of Modern Art as part of the exhibition *Never Alone: Video Games and Other Interactive Design* on view through July 16th, 2023 (<https://11bitstudios.com/this-war-of-mine-in-the-museum-of-modern-art/>). MoMA acquired *This War of Mine* in 2022, along with 35 other video games, as part of the Museum's permanent collection. The decision allows the Museum to study, preserve, and exhibit video games in its *Architecture and Design collection*. Starting in September 2022, the game is also a part of *War Games* – an exhibition exploring the message about conflicts conveyed by war-themed games, in the Imperial War Museum in London.

For many players, playing *This War of Mine* is a rewarding yet uncomfortable and disquieting experience, reminding them of or confronting them with the civilian experience of war. Some players may find the game frustrating because it does not live up to the





expectation of a typical wargame or resource-management game or is experienced as depressing. However, there is a creative approach to creating such a unique “war game” with an unexpected approach to show that the game could be so challenging that it is frustrating because that is how war is: horrible (Bjørkelo, 2018, p. 170).

For the creative process, the designers of *This War of Mine* also stressed the importance of continually testing the game with new players because of the desensitisation toward the emotionally engaging gameplay that happens over time (de Smale, Kors, & Sandovar, 2019, p. 405). Such insight shows the importance of keeping the testers “fresh” in their perception of the game to avoid the loss of the emotional aspect of a game that has, among its goals, teaching an essential lesson on social and humanitarian values. This is an important lesson for all developers planning to create a game that not only entertains but also stirs emotions. Having testers experiencing raw emotions from the gameplay, not dulled by the multiple hours of the previous testing of subsequent alpha and beta versions, is crucial to forecast and evaluate the future player experience. It is important, especially in innovative games, that push further and beyond the already explored themes and mechanics, when the gameplay has a brand-new concept, and there is no easy benchmarking with other titles from the given genre.

### Insights for the EVGIE

As mentioned above, *This War of Mine* is the best example of the growing role of games in business and education, as the first video game added in Poland to the official school reading list (Rutkowski et al., 2020, p. 11-12), making Poland and Belgium’s Flanders the pioneers in adding video games to the official education system (Video Games Europe, 2023, p. 29). The Microsoft Windows version of the game is free to download from the Polish government’s website, alongside lesson topics for teachers (Ministerstwo Edukacji i Nauki, n.d.). The educational and cultural significance of the game, both in Poland and in general, has increased after the Russian invasion of Ukraine in 2022. What is essential is that the game was not meant to be an educational initiative and was not an effect of a publicly funded programme, which shows that even titles created with the primarily commercial goal can also impact culture, citizen attitudes, and modern education.

To this time, *This War of Mine* is the game most unique in its simultaneous non-commercial approach with an adult interpretation of war, and at the same time, being most successful commercially for a match with such direct and unapologetic education values. It also shows the importance of conducting elaborate background research about a subject for a game





(such as war) to support game-world coherence (de Smale, Kors, & Sandovar, 2019, p. 405). However, while the game's creators cite the siege of Sarajevo as a source of inspiration, the city is not directly mentioned. However, depriving the location of characteristic elements that could indicate their relationship with the actual location and historical circumstances makes the game a universal story, not about a specific war but war in general (Gieba, 2019, pp. 26-27).

In October 2024, Amnesty International awarded<sup>19</sup> *This War of Mine* a *Special Recognition Award* during the Central & Eastern European Game Awards (CEEGA). The Amnesty International team specifically highlighted the game's continued relevance in portraying the harsh realities faced by civilians in conflict zones, as well as how *This War of Mine* serves as a powerful reminder of the crucial importance of international humanitarian law in protecting civilian lives in areas of armed conflict, citing current situations in various regions of the world. It is worth noting that the 2024 awards went to the 2014 game. It is thanks to the constant involvement of the studio in promoting humanitarian values, as well as the universal value of the game's message. The humanitarian approach of the studio, combined with promoting the game in an educative way and using the downloadable content (DLC) to teach players about ongoing conflicts or donating profits from DLC to war victims. It explains why different bodies still commend the games and allows the EVGIE to support the educational system effectively. It is also one of the prime examples or a blueprint for future projects that could be inspired or funded by the national bodies or the European Commission.

### 4.3.3. Major Case #3: The Assassins' Creed

#### The Game and the Studio

*Assassin's Creed* (Ubisoft, 2007–present) is a historical action-adventure video game series and media franchise published by Ubisoft and developed mainly by its studio, Ubisoft Montreal. The *Assassin's Creed* (AC) video game series depicts a fictional millennia-old struggle between the Order of Assassins, who fight for peace and free will, and the Knights Templar, who desire peace through order and control. The series features historical fiction, science fiction, and fictional characters intertwined with real-world historical events and figures.

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<sup>19</sup> *This War of Mine* has received multiple awards and nominations through the years, including the Games for Change 2015 for Best Gameplay (Games for Change, 2015).



Ubisoft Montreal (Ubisoft Divertissements Inc.) is a Canadian video game developer founded in April 1997 as part of Ubisoft's growth in worldwide markets. Ubisoft (Ubisoft Entertainment SA) is a French video game publisher headquartered in Saint-Mandé and not only one of the biggest video game publishers and producers Globally but also the most prominent European VGI company and arguably the only European company big enough to be considered an entity on the same level as the top VGI publishers, especially considering the volatile structure of the Swedish Embracer Group. It is worth noting that Ubisoft has also been affected by the expansion of Chinese Tencent in Europe.

### CCI-related aspects

"*Alamut*", an allegorical novel written by Slovenian writer Vladimir Bartol (1903–67), including its famous maxim "*Nothing is true, everything is permitted*", inspired the first instalment of the game (Sutcliffe, 2024), especially regarding its worldbuilding and artistic vision of the otherwise historical Assassin's order. As Assassin's Creed evolved from a single game to a game series and into a whole franchise with in-universe set novels and even a movie adaptation, the value transfer of this franchise is expanded through different media, with a natural co-creation effect. The series has also been analysed in terms of its use of transmedia storytelling (Veugen, 2016). The Assassin's Creed franchise takes place on two levels. On one level, modern-day characters are '*transported*' back to historical periods (the other level) through technology fuelled by artefacts and bloodlines (Cole, 2022, p. 926). As the series demonstrates, technocultural mashups offer the chance to '*relive*' the past through new media, experience events, and see historical figures in their '*original*' setting while reflecting on cultural heritage's fragmented and preferential nature. While it is true that the series blends history with pure fantasy, it is a franchise that has become famous for its diligence in the realistic presentation of the given period, especially regarding the architecture or basic information on political and social issues.

*Assassin's Creed* series explores several different places and periods, each devoting significant attention to the cultural context. Three *Assassin's Creed* games - *Origins*, *Odyssey*, and *Valhalla*, respectively, set in ancient Egypt, Greece and in the Viking era - feature a discovery tour module (Ubisoft, n.d.) which allows students, teachers, and players to discover the culture and history of these eras at their own pace or to embark on guided tours and stories curated by historians and experts (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 151-152).





Making digitalised versions of historical buildings and objects available for game developers is the most effective way to make them accessible to the public. Europe has a rich cultural heritage, and many game developers would like to celebrate it in their games. If the European Commission wants to reach the biggest possible audience for the digitalised cultural heritage, it should widen its scope from serious games to games for entertainment. *Assassin's Creed* series is an excellent example of a game celebrating European cultural heritage by reconstructing historical sites (e.g. late 15th century Venice and 16th century Rome) in their former glory. Video games effectively preserve and promote cultural heritage (Hanussek, 2024, p. 11). The fifteenth-century Florence of *Assassin's Creed II* contains many recognisable landmarks, including the Palazzo Vecchio, the cathedral, the Santa Maria Novella, and the church of Santa Croce. These striking replicas are not simply scenography because the player must navigate them to accomplish the game's objectives (Dow, 2013, p. 216). In 2019, the Notre-Dame de Paris was devastated by a fire. The importance of Notre Dame as a world heritage was underlined by the countless contributions, donations, and solidarity worldwide pledged to help rebuild the cathedral. Among all contributions, Ubisoft's idea to offer its game *Assassin's Creed: Unity* for free to the public was arguably most celebrated as an innovative and creative measure to secure Notre Dame's heritage in case of its destruction (Hanussek, 2024, p. 1). The special case of Ubisoft's participation in Notre Dame's restoration and its use of the series to promote the cultural value and national heritage of the cathedral is currently even more profound, as we are fresh after its grand reopening in December 2024, after the meticulous five-year-long restoration process.

### Insights for the EVGIE

Adapting the novel into the worldbuilding of the first game is a less-known example of the popular value transfer method of transferring a book into a game. The unusual aspect of this case is that the novel served not as a one-to-one basis for the plot or characters but rather to shape historical events and facts in an already proven manner, showing a potential form of co-creation. Adapting historical settings based on historical sources and their artistic interpretations is also exciting. Whether the player is visiting classical antiquity or nineteenth-century London, the AC series makes for an enticing virtual time machine, and, with the introduction of the Discovery Tour and the involvement of some of the scholarly community, Ubisoft is to be commended for increasing its support for the dissemination and production of knowledge about the past through its games (Politopoulos et al., 2019, p. 322). Moreover,





the time and space presented in the game series allow us to study how representations of the past can be assembled to be recognisable to a broad audience, which also gives us insight into the mechanics of cultural memory (Westin & Hedlund, 2016).

The appearance of cultural heritage in popular video games can raise public awareness of heritage sites and artistic items, so it is worth noting that Ubisoft also cooperates with public organisations that use their game engine and modelling systems for exhibition purposes. For instance, the Institut du Monde Arabe in Paris used it for an exhibition on Palmyre (European Commission: Directorate-General for Communications Networks, Content and Technology, 2023, p. 151-152). Despite different controversies that Ubisoft faces regarding its games, be it because of either artistic decisions or the infamous reliance on microtransactions implemented in the single-player games, its ongoing devotion to authenticity and promotion of the explored cultural heritage is still inspirational for both the VGI as well as policymakers from the CCI-related authorities. Ubisoft's initiatives or promoting cultural heritage via its games is also a great example of the commercial possibilities of large-scale cultural heritage simulations (EGDF positions on video game policies - EGDF, 2020).

While Ubisoft has always been careful with sensitive matters, the artistic decision to add an African character in a samurai role in the gameplay of *Assassin's Creed: Shadows* ignited controversies about the limitations of creativity in a game series praised for its authenticity of presenting the period, despite having sci-fi and fantasy elements. While previous games have not sparked such attention, the extreme combination of historical context with modern ideas of diversity and inclusiveness in worldbuilding and storytelling has been so much commented on that Ubisoft published an update for the Japanese community with the *Assassin's Creed Shadows* Development Team explaining the intentions and creative decisions made by the game developers (The Assassin's Creed Shadows Development Team, 2024). It has been observed that Ubisoft has already shown a willingness to stretch its historical record to provide players with a more inclusive experience (Root-Williams et al., 2024, p. 21) and that Ubisoft cares about representing groups in the game well and realistically (Shaw, 2014, p. 10).

Considering the whole franchise, Ubisoft shows that potential controversial issues should not be entirely omitted but instead treated with awareness and openness about the fact that the game studio has the right to creativity and artistic decisions, even in games using historical settings in its worldbuilding. While it may be hard to balance the realism and gameplay





demands, AC's ongoing popularity and broad acclaim in presenting different eras show how powerful the potential of video games is as a tool to promote and preserve cultural heritage. Heritage, whether tangible, intangible, or digital, bestows opportunity but also responsibility. It is a chance for us to remember the past and reshape the future, but we are also responsible for protecting and preserving it (Hanussek, 2024, p. 12), with video games appearing ideal for this task. The *Assassin's Creed* franchise is a crown example of this and combined with the prominent role of its publisher in the EVGIE and the Global VGI in general, makes it necessary to include this series in all serious discussions about both the potential VGI-CCI cooperation, as well as the creation of frameworks fostering such collaborations.

#### 4.3.4. Minor Cases

The following section presents six more minor case studies that deepen the understanding of themes and topics mentioned during the major case studies. As explained in the introductory part, the following examples were either suggested by industry experts during the panel workshops or added by the research team to cover some additional venues of the potential VGI-CCI cooperation.

While the games and music initiatives presented below are less prominent as VGI references and slightly less universal as the sources for potential insights for recommendations than the major case studies, they are still a valuable source of potential good practices and further suggestions. After the following presentation and elaboration on the CCI-related topics, the examples will be further examined during a separate cross-case analysis.

#### **My Memory of Us**

One of the national stakeholder workshop's participants mentioned the case of a 2018 game titled *My Memory of Us* (Juggler Games, 2018). It is a side-scrolling adventure game set in a WWII setting that shows a war-torn city from a child's perspective in the form of a grotesque fairy tale with bittersweet humour. The gameplay concentrates on a pair of kids struggling to survive during times of occupation. The game is set in a fictional version of Poland during World War II and tells the story of a young boy and girl who must navigate through a city divided into two parts: one for Jews and one for non-Jews. The game features hand-drawn art, puzzle-solving, stealth elements, and a unique memory manipulation mechanic that allows players to change the past to solve puzzles and progress through the story.





*My Memory of US* received positive reviews for its story and art. The game is touching and emotional, telling a story of friendship, love, and survival during a war (Fernández, 2023). The game uses a euphemism for the Holocaust by being carried out by evil robots against people wearing red clothing (Majkowski & Suszkiewicz, 2021, p. 88). This approach, by learning about Holocaust by a platformer utilising fable-like aesthetics, replacing Nazis with robots, and coding persecuted Jews as people wearing red clothing, serves to avoid too much realism in a video game, to avoid the scrutiny of the memory-guarding institutions (Caselli et al., 2023, p. 40), that does not treat lightly using a literal depiction of such tragedies for, after all, entertainment.

*My Memory of Us* is similar in its universal approach to the war we have seen in *This War of Mine*. While the game's gameplay has been met with mixed reception (genre-wise, as an action-adventure game), it has gained praise and multiple award nominations for its artistic and educational value. The visual similarities to the acclaimed "*Shindler's List*" have been noted. The fact has brought an additional entertainment and cultural (and promotional) value that a distinguished British actor, Sir Patrick Stewart, has narrated the game. However, while discussing incorporating historical figures, events, and context within a video game, we must remember the controversies surrounding the more painful events related to international history, especially when combined with war, death, and immoral behaviour. Such issues must be treated with respect and subtlety.

The terms "*Polish death camp*" and "*Polish concentration camp*" have been controversial as applied to the concentration camps and extermination camps established by Nazi Germany in German-occupied Poland, and the terms themselves are clear misnomers. Politicians and news media have occasionally used the terms about the camps' geographic location in German-occupied Poland. They usually apologise when confronted about the inaccuracy, as President Obama did in 2012 (NBC News, 2012). In 2016, the Polish cabinet started the legislative process of outlawing such terms (The Guardian, 2016) and, as stated by Zbigniew Ziobro, the Polish justice minister, and chief prosecutor at the time, making it possible to prosecute EU citizens for such transgression using agreements on judicial cooperation between member states, with those from outside the EU would be pursued through mutual extradition treaties (Kroet, 2016). However, a Polish legal act – the Amendment to the Act on the Institute of National Remembrance - in 2018 generated outrage when it criminalised any public statements ascribing to the Polish nation's collective responsibility for Holocaust-





related crimes (Santora, 2018). Some commentators considered this as an institutionalised denial of any crimes committed by Poles against the Jews (Blakemore, 2018) or even to falsify history (Gross, 2018). *My Memory of Us* fell victim to this and, as discussed during the Project workshops, as a Polish game about the Holocaust, released by coincidence close to the Act, has been ostracised by some international media. While the VGI studio may do its best to honour the subject matter, the politicians may endanger its impact by pursuing aggressive international rhetoric.

### **The Thaumaturge**

Another title mentioned during the Project workshops by one of the panellists is *The Thaumaturge* (Fool's Theory, 2024). This isometric role-playing game entertains the player with a supernatural theme in a historical setting, developed by Fool's Theory and published by 11 Bit Studios in March 2024. While the game setting is deeply immersed in Warsaw's historical, political and social realities under the Russian Empire's rule, it is by no means a game neither so serious as *This War of Mine* nor pursuing realism and authenticity as *Kingdom Come: Deliverance*. The player deals with the mysterious art. of thaumaturgy, enabling them to control mythic beings. (Fool's Theory & 11 Bit Studios, n.d.).

While *The Thaumaturge* has no pretence of being labelled as educational or promoting the national culture, it is worth mentioning considering its broad use in the Polish national history and political context from the early 20th century, when Polish people were under the over century long occupation by the neighbouring countries, with part of Poland being ruled by the Russian Empire. The presented world is filled with themes related to the contemporary Polish struggle for independence. It is also worth noting that the game uses a well-known classic role-playing video game artistic choice of an isometric third-person view, which is less technologically demanding than some more advanced visual solutions seen in games (for example, the KCD and AC, discussed earlier) and makes it possible to emulate *The Thaumaturge* approach to game design if a similar project, set in a different period or locale, would be a subject of a potential VGI-CCI collaboration.

*The Thaumaturge* also offers a bittersweet lesson for the studio and the whole VGI. The workshop's participant mentioned that while the voice actors were Poles, the game initially lacked voice acting in Polish, disgruntled the Polish audience. Only a few months after the



release has the Polish dubbing been added. That shows that while contemporary games with global expectations are supposed to be produced with English voice acting, it is worth spending time and resources to honour the country of origin, especially in a game with an immense significance of the national history and settings as a part of the actual gameplay. After the release and the subsequent updates, the game is praised, especially for its rare gaming presentation of the historically accurate atmosphere and cultural references.

### **Cyphers Game**

Staying firm within the brilliant, but maybe not well-known, Polish examples of the creative approach to VGI-CCI collaboration, studied by the research team and the panel workshop participants in a project realised by the Polish Institute of the National Remembrance (IPN). On 1 April 2022, *Cyphers Game*, the computer game produced by the IPN's New Technology Division, was presented during a press conference held at the Reduta Bank Polski in Warsaw (Institute of National Remembrance, 2022). The *Cyphers Game* is a gaming project prepared as a first-person perspective game, consisting of three missions, which describe the course of the Polish-Bolshevik war and the contribution of Polish cryptology to its victorious end (IPNtvPL, 2022). The in-game content has been created from the source material or accurately reproduced from historical exhibits.

In the *Cyphers Game*, the players' missions are based on documented historical events, and each hero has a different task crucial to the battle's outcome. The game was created as a first-person adventure and took the player into the world of the conflict that established European order for the next two decades. The story begins at the end of 1920 when the battle for Korosten, a strategic railroad junction and technical and supply base, is underway. In 2022, *Cyphers Game* won the 16th edition of the Historical Event of the Year Plebiscite. The project of the Institute of National Remembrance received the most votes from Internet users and "*Cyphers Game*" was awarded as the best educational project of 2022 (Institute of National Remembrance, n.d.). *Cyphers Game* also continues the path started with *This of War of Mine*, being added to the schools' reading list. As of the 2023/2024 school year, two video games have been included in the secondary school Polish language curriculum: *This War of Mine* and *Cyphers Game*. Although both titles are only on the supplementary reading list, it is still an essential step toward fully appreciating video games as a cultural product that can be used in teaching (Płosa & Kłosiński, 2024, p. 20).





### **Hellblade: Senua's Sacrifice**

A unique approach to a video game set historically or culturally is *Hellblade: Senua's Sacrifice*, a British action-adventure PC game from 2017, with later releases on other platforms (Ninja Theory, 2017). The game also features support for virtual reality, which was added in a 2018 update. Intense negative and uncomfortable emotions can be particularly prevalent in psychological horror games due to their frightening nature, making them an ideal context for further exploration of this dynamic. However, we are witnessing a shift towards a more positive and realistic portrait of individuals with mental health in video games, especially within the psychological horror genre such as *Hellblade* (Tomé et al., 2024, p. 2). The emotional nature of the game's plot and the characters' problems are the principal elements of the game, in which the main female protagonist struggles with psychosis and trauma. The illness enables us to understand Senua's character, way of thinking, fears, and motivations. It allows understanding of the protagonist's character and actions (Stasieńko et al., 2021, p. 39).

*Hellblade: Senua's Sacrifice* is one of the video games that tend to be exceptional vehicles for the symbolic representation of sensitive topics and excel at presenting allegorical figures and scenarios referring to trauma to present serious subject matter as a unique immersive experience for sensitive topics, including obsession, guilt, penance, impotence, bigotry, or dejection (Marak et al., 2024, p. 3). In representations of mental illness onscreen, we are usually presented with an illness first and then a two-dimensional character attached to that. In this case, the characters are fully formed and not defined by their condition (Lloyd, 2017). The game is one of the titles using its mechanics to present the issues of crises and mental illnesses (Stasieńko et al., 2021). *Hellblade* has received funding from the Wellcome Trust, and its creators have been working closely with Prof Paul Fletcher (PF), a neuroscientist and psychosis expert at the University of Cambridge (Lloyd, 2017). Senua is trying to make sense of her experiences and work her way through them – that is incredibly de-stigmatising.

The unique way of representing schizophrenia in *Hellblade* is undoubtedly worth noting; the developers have undertaken to reflect the presence of different voices and personalities in the head of the main character (Stasieńko et al., 2021, p. 37), with an elaborate attempt to recreate in the linguistic layer the mental states of a person who has psychosis (Stasieńko et al., 2021, p. 64). Female characters in video games go beyond being symbols of hyper-sexualisation; video games such as *Hellblade* have created stand-alone female protagonists with deep and intriguing characters (European Commission: Directorate-General for Communications



Networks, Content and Technology, 2023, p. 150). *Hellblade: Senua's Sacrifice*, together with *Life is Strange*, has been noted as a game in which the choice of a female protagonist is meaningful (Baltezarević et al., 2021, p. 46). The important aspect of female empowerment in the *Hellblade`s* is not forced on the player or underlined with some extra agenda. The femininity of the main character is among the central parts of the game's concept, the story and the unique blend of violence with vulnerability makes this title a worthy example of how to create a game that can mix action with a commendable approach to important themes and messages. The recent reveal of the protagonist of the next instalment in the *Witcher* franchise as a previously known character, but now much older and shown as a scarred (physically and psychically) mature female selflessly struggling with the oppressive society (The Witcher, 2024) has also sparked some debate on how seriously we should treat the game character and that this topic is still something worth focusing on.

### **Eternal Sonata**

Considering the significance of historical figures to national culture, the national stakeholder workshop participants mentioned some unusual examples. The most interesting is a Japanese game titled *Eternal Sonata* (tri-Crescendo, 2007), and the life and work of Fryderyk Chopin inspire its themes, mechanics and gameplay. *Eternal Sonata* is a role-playing game developed by tri-Crescendo and published by Bandai Namco Games, released in 2007. The game also features a selection of Chopin's compositions played by pianist Stanislav Bunin. While the game is set in a fantasy setting, the game uses multiple classical piano pieces and has educational cutscenes featuring real-life paintings and photographs. Rarely do the worlds of classical music and video games collide explicitly; when they do, as in *Eternal Sonata*, the result is of marked semiotic interest, with the game's complex metafictional plotline – involving multiple levels of narrative seeking to blend fantasy and reality – invites speculation and interpretation, particularly concerning its multivalent ending (Yee, 2018).

As a role-playing game, *Eternal Sonata* makes statements about society and challenges the player to do something to improve the world. By offering a detailed, surrealist landscape and integrating classical and contemporary music, it arguably achieves a degree of visual and musical harmony that few games manage to obtain. The plot, characters, and themes presented in the game can be suitable for all ages, although, as reported, a child will certainly see the game from a different perspective than an adult (Quijano-Cruz, 2009, p. 217). The Academy of Interactive Arts & Sciences (founded in 1996, dedicated to advancing and recognising the interactive arts) named *Eternal Sonata* as one of the nominees for 2007's "Role-Playing Game





of the Year”, but it lost to *Mass Effect* (Academy of Interactive Arts & Sciences, n.d.), which is no shame, considering that *Mass Effect* is one of the most acclaimed and influential sci-fi role-playing games ever created and started a powerful franchise. Such a nomination shows how a game with a unique approach to using cultural topics could achieve considerable recognition.

*Eternal Sonata* is a unique example of the out-of-the-box approach to video games inspired by cultural themes. It is worth noting with its creative use of a well-known musical genius’s personal history and works for a game targeted at a wider audience. It can also have educational value despite the gameplay having nothing to do with the separate genre of more niche music games. *Eternal Sonata* was brought up during the workshop discussion to highlight the diverse possibilities of successful cooperation between the VGI and the classical music industry. It expanded its well-known boundaries of producing game soundtracks and symphonic title themes. Such examples are scarce because while we have numerous music games, they rarely blend the promotion of the music and musicians with easily approachable gameplay. While there is no point in taking too much inspection into the game mechanics, as Asian-style role-playing games are not necessarily the most convenient, easy inspiration for the VGI-CCI collaboration, the idea of games inspired by themes involving European musicians should not be abandoned but embraced and nurtured.

### Game Music Festival

Besides the evidence of video games incorporating themes related to national culture and history, the participants discussed various cooperations promoting VGI through music. While we know that it is now a standard practice to involve music institutions in creating the game audio and music score, there is an additional aspect of the direct involvement of live music concerts. The participant representing the classical music industry mentioned a successful initiative called the *Game Music Festival* (gamemusic festival, n. d.) , where the music from popular video games is played with concert hall quality music, with chosen games’ music adapted to orchestral suites. During its first four editions, the festival occurred in different cities in Poland and the UK, including Wroclaw and the National Music Forum (NFM), during the second and third editions. Those concerts are very popular among gamers, and the audience during concerts is very enthusiastic. However, such events need a high level of cooperation between the music institutions and people from the VGI, considering that in a classical music institution, there is usually a lack of people with enough VGI-related knowledge





to organise a game-related event. During the panel workshops, the participants explained the importance of creating a framework for the VGI-CCI collaboration, as the inherent differences in perceptions of the resource demand and business practices between the partners could (and did) easily jeopardise any joint project.

The lack of knowledge about the classical music industry among the members of the VGI brings inaccurate expectations of the time, effort, and conditions necessary to make events such as the *Game Music Festival* possible for an orchestra to perform. The barriers include the limited availability of instruments, the need for a proper conductor, and even not always easy access to the props and furniture. However, such initiatives have proven to be among the most popular and successful means of promoting the gaming culture among non-gamers and creating an interest in and awareness of contemporary classical music among gamers. They are great opportunities for collaboration between the VGI and CCI, possibly encompassing cooperation and value transfer in its purest form. This is magnified by the fact that contemporary game music tends to represent increasing quality and even benefit from substantial budgets. Unsurprisingly, multiple initiatives are similar to the GMF game-related concerts of the Bohemian Symphony Orchestra Prague (Bohemian Symphony Orchestra Prague, n.d.) with their regular game music concerts. The EC should endorse such activities by providing opportunities for VGI and interested music institutions and orchestras to cooperate. Considering the potential to attract players to music via games and improve VGI publicity through its involvement in classical music-related projects, such initiatives should be among the significant EVGIE initiatives supported by the EU agendas.

#### 4.3.5. Cross-case analysis – major cases

Further analysis of the three major cases leads to numerous critical findings for each title and synthetic insights that can lead to further recommendations, especially for the policymakers, both on the national and pan-European levels. Those three cases have been carefully chosen to improve the multidimensional approach to the analysis.

*Kingdom Come: Deliverance* shows how accurate historical content (settings, political events, national culture) is not niche but attractive to global audiences while at the same time promoting national history. KDC successfully shows the potential of crowdfunding campaigns if there are clear and understandable descriptions of the added value (realism,





authenticity). It also shows how public engagement in the game studio is necessary to build interest and interact with players even before the game is in its alpha state. It is also evident that the contemporary policies regarding diversity, equity and inclusion should be treated with sensitivity and understanding. While the game is not educational, its realistic recreation of medieval Bohemia sparked interest among players and scholars, which is a great starting point for further collaboration. Nevertheless, KDC shows that a commercial game can (and should) compromise authenticity and gameplay to maintain the user experience alongside its historical values.

*This War of Mine* offers the most unique, as the commercial gaming goes, educational use among the war games, with its unique focus on the civilian perspective of war and well-maintained emotional and ethical impact. The universal message helps avoid national controversies and increases accessibility and relevance. Its inclusion in the Polish school reading list shows potential for integrating games into formal education, not only in typical IT context and gamification but also to promote humanitarian values. The ongoing use of TWoM publicity by the publisher is highly commendable, with more to advocate for humanitarian values and initiatives and less to sell the game itself, as its base version in Polish and multiple DLCs are free.

*Assassin's Creed* as a series is famous for its transmedia storytelling extending through different media and showing how simple (if there is the will) cooperation with broader CCI. Commendable is its promotion of cultural heritage, both via "Discovery Tour" mode (enabling learning through guided tours and showing how easy it is to integrate educational content in a commercial action game) and, finally, the focus on authentic architecture presentation in consecutive games and Ubisoft's input into preserving the national heritage of Notre Dame, during its restoration after the fire in 2019 and before the reopening in December 2024. It is also one of arguably few examples of Ubisoft's active involvement with the European context. The franchise AC shows that balancing historical authenticity with modern values and policies is a great way to create popular games, but could be challenging in avoiding bias and requires clear communication and transparent justification of artistic decisions.

From a cross-study comparison of those titles, we can draw the following insights and recommendations that aim to deepen the integration of VGI and CCI, leveraging the strengths of different actors to foster innovation, cultural preservation, and educational enrichment across Europe.





- **Collaborative Framework:** There is a need for dedicated platforms in the form of forums or joint initiatives between historians, museums, game developers, and cultural policymakers to facilitate more focused and accurate collaboration. Without this, the robust implementation of the academic and CCI potential in new games, as seen in the analysed titles, will be diminished by the potential relational capital and limited networking. It is also crucial to offer EU funding for projects integrating VGI and CCI to make incentives for CCI to recognise and acknowledge the often disregarded VGI.
- **Supporting Authentic Content with Creative Freedom:** the game developers should have easy access to digitalised historical materials and sources, archives and expert consultation to ensure cultural and historical accuracy not only when it fits the major game themes but also for the promotion of national and European cultural heritage and historical or cultural artefacts. Nevertheless, studios should be allowed to use artistic interpretation with limitations regarding sensitive topics and transparent communication about deviations from historical fidelity.
- **Inclusivity:** developers need to participate in workshops on integrating diverse narratives and characters to ensure that inclusivity in games does not compromise authenticity, either to offend some communities or non-intentionally ridicule the historical content. Proactive engagement in communication and discussion with the player communities helps understand their expectations and prepare them for a product that introduces innovative approaches or ideas.
- **Public awareness:** it is beneficial for the game studio, CCI partners and society to leverage successful games (like in the case of AC and KDC) to raise awareness about cultural heritage and history through public collaborations beyond the game itself. It could also help to use the game to promote culturally valuable content beyond the target audience, like in the case of AC, in which the Discovery Tour mode and Notre Dame's recreation are also directed to audiences not much interested in the action-adventure aspect of the games. Such initiatives are great opportunities for private-public partnerships with cultural institutions that can use game assets for exhibitions, education, museum installations, or virtual tours not only through existing but also lost (but not forgotten) historical locations, monuments, and architectural wonders.
- **Sustainability and Impact:** learning from the TWoM creators alongside the community-oriented actions of the other mentioned publishers, the policymakers should make incentives for studios to update games with additional educational content and expand





their impact by non-commercial partnerships, creating not only the added value for the European society but also improving the VGI standing as not only a commercial entertainment sector but also a proactive actor in the formation of the modern European cultural identity and values.

- **Educational Integration:** the national and European authorities should promote the use of games with historical or cultural themes (TWoM case) in school programs and educational initiatives. There is an immense but still underemployed potential for VGI technologies, know-how, and already existing content for educational purposes.

#### 4.3.6. Cross-case analysis – minor cases

The analysis of the further studies provided additional key findings and insights. The goal was to cover a broader selection of potential inspirations for VGI – CCI cooperation, be it in the topics related to common European history (like strained international relations, WW I, WW II and its implications), a unique mix of cultural heritage with a focus on diversity and inclusion and finally the music, both as European music serving as game inspiration and the video game music serving as the means to gain popularity and broader audience by the European music institutions and orchestras. First, we present the key findings from all the chosen minor cases to expand the base of insights provided by the major cases.

*My Memory of Us* shows a well-handled artistic representation of a sensitive period of European history by using allegory and metaphor. The fact that the game uses primarily black and white colours with vivid red clothing of children is not only a subtle in-game marking of the Jews but also a brilliant inspiration drawn from the famous scene in a critically acclaimed *Shindler's Lists*. The combined storytelling, art and gameplay not only entertain but also educate players using cultural and historical context. While the game mechanics were far from AAA titles, it is one of the most worth remembering historically inspired games that serve to preserve not only historical landscape or events but the cultural heritage of the common European trauma and teach about it in an accessible and creative way. It is also worth noting that the game's message was more subtle than a simultaneous Polish policy against the journalists and politicians using the misleading term "*Polish Death Camps*". In general, it shows the utmost importance of well-handled communication with the audience, especially in projects involving sensitive topics (*This War of Mine* is, on the other hand, a masterclass in this).



*The Thaumaturge* shows that combining national history in an exciting setting with fantasy elements can create a unique narrative experience. As the Project workshop panellist mentioned, the lack of local voice acting annoyed the community and showed the expectations regarding the national language in a game about national topics. While it is not always possible to implement the local voice acting, it could be one of the fields for further collaboration with the CCI.

*Cyphers Game* is a uniquely surprising title because while it is purely an educational project, its gameplay value met with critical praise, and, therefore, it could be considered a blueprint for similar projects in the future. While it is aimed at teaching players about the Polish-Bolshevik War, it also demonstrates how well-made and not only symbolic or vague gameplay can effectively complement traditional education. It is also a commendable way of promoting a vital public institution, Polish Institute of National Remembrance, actively showcasing its willingness to support video games in education. *Cyphers Game* is an insightful case of how to use public resources to fund games successfully. As such, it should be a vital inspiration for other national policymakers and the EU. The fact that the game is available for free and not only on the organisation`s website but also on the Steam platform (for increased visibility) should be a good practice for similar projects.

*Hellblade: Senua`s Sacrifice* is a unique representation of mental health in a mainstream title, magnified by its gritty, historical setting. The fact that game mechanics and creation (including an innovative approach to sound effects) were expert-consulted and the game has received funding from the *Wellcome Trust* are examples of how to approach mental health topics in future projects. From a more artistic perspective, immersive gameplay has proven to be a superb way to address sensitive issues. The mature approach to choosing a female character as the game protagonist has not been missed. *Hellblade* should inspire VGI to collaborate with experts and form valuable partnerships to promote serious topics in not only educational but also commercial games, as well as promote gender diversity in a sound, not forced, way. *Eternal Sonata* is a unique example of the creative use of cultural heritage when thinking out of the box. While a fantasy role-playing game about Chopin may sound like a farse, the execution was excellent, and the title serves as a crown example of the innovative promotion of classical music and its author among the target audience not precisely expected to visit symphonic orchestras. The non-forced education using cutscenes with real-life paintings, photographs, and musical compositions is also commendable and should serve as a great



example. While *Eternal Sonata* is not a European game, its example is too vivid and inspirational to miss its inspiration for co-creation, co-innovation, and value transfer between the VGI and CCI, especially by using cultural icons, artistic collaboration, and new ways of interactive education. It is worth noting that After *Eternal Sonata*, there are other games with classical music as the theme or inspiration, but not many, with long gaps in releases. The examples of *Frederic: Resurrection of Music* (Forever Entertainment, 2012), *The Artful Escape* (Beethoven & Dinosaur, 2021) and *Mozart Requiem* (Hoplite Research LLC, 2022) show that even if limited, this approach still has potential.

*Game Music Festival* (GMF) is among the most prominent initiatives to bring video game music into concert halls and create practical intersections between the VGI and the broader CCI, especially institutions from the field of classical music. Such initiatives attract gamers and non-gamers, helping achieve a mutual appreciation for classical music and the gaming culture. However, those initiatives are also prone to logistical issues and extreme knowledge gaps stemming from entirely different regulatory and business environments of cooperating partners. Policymakers and public institutions need to endorse such projects actively.

When analysing all the strengths and vulnerabilities observed in the described cases, we have a set of cross-case recommendations that may serve as feedback for policymakers and regulators.

- **Public funding and public policy support:** the EU should promote projects that merge entertainment with education, cultural heritage, or essential social themes.
- **Cross-industry partnership:** it is evident from all cases, no matter how diverse they are, that it is crucial to create matchmaking and networking programs between diverse fields: historians, artists, musicians, and also other specialties, like medicine or other academic fields.
- **Public awareness:** There should be regulatory/financial encouragement for including educational games in schools and public institutions, as well as public endorsement of games created with maximum accessibility. The common practice of offering reduced difficulty for “casual” gamers will also help provide accessibility. It also should promote cultural sensitivity and best practices for addressing sensitive cultural, historical, or psychological topics.
- **Transmedia, multi-sector narratives, and integration:** it should be not only allowed and appreciated but generally promoted to expand games with cultural values to other





mediums (books, films, music festivals) to facilitate broader cultural resonance as well as expand audience, invite to learn more about their fields of interest (history, heritage, psychology, music, and others) by engaging in entertainment provided by video games.

#### 4.4. Conclusions

Concluding the case study analysis, the major cases deserve additional glances, considering their obvious similarities and more subtle differences. Those three cases have been carefully chosen to improve the multidimensional approach to the analysis. While all three titles employ cultural and historical topics, they have significant differences in both genres and the VGI-related conditions, each serving unique lessons for different sizes of VGI/CCI entities.

*This War of Mine*, a strategy war game, is the least technologically advanced, with simpler graphics and more focus on mechanics than the audio. This blueprint is excellent for smaller studios, independent developers, and CCI-related game enthusiasts. It is also a product of a relatively small (at the time) publisher. On the other hand, *Kingdom Come: Deliverance* is a first-person role-playing game with much more advanced graphics and audio-visual content. It also serves as its added value by recreating a realistic vision of medieval Bohemia and its cultural and historical artefacts. The Warhorse studio was (at the time) a medium-sized developer, struggling with resources but delivering the title that is currently widely recognised as the best Czech game ever made. The lessons from Warhorse are great insights for all game studios looking for their path in the industry, preferably with their unique blend of national or cultural heritage in a video game. Finally, *Assassin's Creed* is among the most well-known, influential, and profitable video game franchises ever made, being one of the cornerstones of Ubisoft's being *de facto*, if not *de iure*, "the European top video game company", with its preeminent skill in creating impactful history-based games, *Assassin's Creed* has to be one of the flagship titles for the EVGI-related case studies. However, considering Ubisoft's increasing dependence on Chinese Tencent, it is more and more debatable if we can still label Ubisoft as the European bulwark against American/Asian dominance in the VGI-related sectors. At the time of finishing this report, we are still waiting for the financial results related to the release of the next major *Assassin's Creed* franchise entry (*Assassin's Creed: Shadows*). Only then we can seriously discuss the actual future of Ubisoft. What should be stressed is the need to always advocate for fairness and openness in communicating artistic choices,





especially regarding sensitive topics. As seen in a vivid example of “*My Memory of Us*” and other history-sensitive titles, incorporating historical figures, events, and context within a video game demands careful awareness of the controversies existing around the more painful events related to international history, especially when combined with war, death, and immoral behaviour. Such issues must be treated with respect and subtlety. While the VGI studio may do its best to honour the subject matter, the politicians may endanger its impact by pursuing aggressive international rhetoric on topics close to the game’s theme. A similar example is related to the controversies around *Assassin’s Creed: Shadows*, which ignited such controversies around its extreme combination of historical context with modern ideas of diversity and inclusiveness in worldbuilding and storytelling. Finally, the complaints about the lack of cultural diversity or strong female characters in medieval-themed games should not be simply ridiculed. The spokespeople for game studios should ensure that the demand for realism and authenticity is fluently combined with modern sensitivity.

Among the final remarks should also be that most examples mentioned during the Project-related workshops and described in detail in the cases, as well as others mentioned in this report, clearly show the relatively low difficulty and successful outcome of adapting other media into video games. One such media are novels, which are highly potent sources for direct adaptation of the plot and an excellent blueprint for the significant worldbuilding foundations and storytelling when the book is not adapted directly by serving as an inspiration. Adapting the novel *Alamut* into the worldbuilding of the first game is an apparent popular value transfer method of transferring a book into a game. The unusual aspect of this case is that the novel served not as a one-to-one basis for the plot or characters but rather to shape historical events and facts in an already proven manner, showing a potential form of co-creation. After all, the described examples show multiple ways to employ different CCI actors in video game projects. Now, the role of game studios is to initiate it and the European policymakers to facilitate those projects and their successful realisation, positively impacting the broader European society and culture.





## 5. Summarising Conclusions

This report should outline the existing knowledge and enhance the understanding of industry practice in (E)VGIE & CCI and examples of cooperation between these sectors. To do so, extensive desk research has been conducted. The research investigation covered a systematic literature review of academic literature and industry reports as well as a comparative analysis of the success of major and minor case studies.

Nevertheless, before providing the synthesis of key findings and addressing the research questions, we found it important to comment on three topics that, while not initially planned for analysis during the desk research phase, emerged during the study. Based on our understanding, these issues are particularly significant for the future development of the European gaming industry and thus warrant inclusion in this summary.

1. **Accurate understanding of the European Video Game Industry Ecosystem** – caution is advised when using geographically specific terms for the video game industry, such as EVGIE, German VGIE, Finnish VGIE etc. Geographic qualifiers can be misleading due to the highly diverse ownership structures of game development companies and the inherently global nature of the industry - not only in terms of sales but also production, which often involves a significant share of remote work.
2. **Artificial Intelligence as a critical issue requiring coherent regulation, promotion, and continuous monitoring of legal accuracy** - Eurostat data reveals relatively low adoption of AI by European companies (8% in 2023, according to Eurostat, 2024), However, within the video game industry, AI stands out as a pivotal technological solution. Notably, Europe lags significantly behind the U.S. and China not only in AI regulation but also in AI development, with examples like China's DeepSeek demonstrating the ability to deliver more cost-effective and efficient AI solutions than OpenAI's GPT-4.

It should be acknowledged that AI is increasingly integral to game development, enhancing the efficiency of large-scale projects, reducing costs, and potentially minimising entry-level positions such as junior roles. Yet, its rapid development raises the need for thoughtfully crafted regulations to ensure a balanced approach between fostering innovation and addressing safety concerns. Regular updates and adjustments to these regulations will be essential to keep pace with the evolving landscape of AI usage in gaming and beyond (Blew, 2024).





3. Dynamically increasing mergers and acquisitions of European video game studios highlight a **significant shift in the ownership structure of European developers** in recent years. A notable trend is the increasing expansion of Chinese companies (with Tencent being particularly prominent) and Saudi entities into the video game industry, spanning both e-sports and entertainment-focused games. While free-market mechanisms generally prevent the implementation of measures or solutions that fully restrict M&A activity, it would be crucial to monitor this phenomenon more closely.

In the context of both the ownership and AI issues, it's important to revisit the scale and reach of the gaming industry, which now connects to almost a third of the global population. This **makes games an excellent channel for promoting and disseminating (sometimes unconsciously for the audience) cultural, social, civic, ethical, and pro-environmental content**. As P. Rodzińska-Szary, an industry expert who has been studying trends in the gaming sector for years, points out, *“Who controls the games, controls the young citizens. China and the USA understand this well. The Saudis have understood it. Europe is watching.”* The question that can be raised is, how long can Europe afford to just watch?

### Existing knowledge

The recognition of the current stock of knowledge was driven by five posed research questions while the results of this recognition can be summarised (besides the detailed conclusions drawn so far) as follows.

- **RQ1:** *How is value co-creation between VGIE and CCI addressed in recent research in terms of establishment (drivers, motives, barriers, aims), execution (mechanisms, tools, practices), and ending (breaking events, problems, challenges)?*
- **RQ2:** *How is co-innovation between EVGIE and CCI addressed in recent research in terms of the establishment (drivers, motives, barriers, aims), execution (mechanisms, tools, practices), and ending (breaking events, problems, challenges)?*
- **RQ3:** *How is value transfer between EVGIE and CCI addressed in recent research in terms of the establishment (drivers, motives, barriers, aims), execution (mechanisms, tools, practices), and ending (breaking events, problems, challenges)?*





The summary of the recognition of the essential aspects across the establishment, execution, and ending cross-industry cooperation in the context of value co-creation, co-innovation, and value transfer is presented in Table 6.

**Additional insights:**

- VGI, as well as VGIE, are dominated by game developers. Developers are global organizations no matter where their headquarters is located. It means that the sense of focusing on geographically limited ecosystems (national, regional, European, etc.) is doubtful, and such geographical narrowness seems to be reasoned only to a hard institutional layer of the macro environment (mainly law & regulations).
- Financial support for value co-creation and co-innovation seems to be essential – both direct (e.g., granting programs) and indirect (e.g., tax reliefs).
- Our thematic analysis of both academic literature and industry reports shows that value co-creation is the most explored among the three contexts of inter-industry collaboration between VGI and CCI, namely value co-creation, co-innovation, and value transfer.





**Table 6. Key issues across the establishment, execution, and ending of cross-industry cooperation identified during the systematic review of academic literature and industry reports**

Focus of cross-industry cooperation	Establishment	Execution	Ending
Value co-creation	<p>Motives at the ecosystem level</p> <ul style="list-style-type: none"> <li>• Motivations related to financial support</li> <li>• Access to a skilled workforce</li> <li>• Increasing technological and artistic complexity of video games and other cultural goods</li> <li>• Achievement of government policy objectives</li> </ul> <p>Motives at organizational level</p> <ul style="list-style-type: none"> <li>• company's commitment to cultural heritage</li> <li>• protection and revitalisation of cultural heritage</li> <li>• commercial objectives</li> </ul> <p>Barriers</p> <ul style="list-style-type: none"> <li>• Difficult access to financing,</li> <li>• Potential language barriers,</li> <li>• Legal issues (related to intellectual property),</li> <li>• Delayed intention to engage partners in value-creation processes,</li> <li>• Lack of familiarity among decision-makers and management,</li> <li>• Conflicting objectives, and</li> <li>• Insufficient network connections.</li> </ul>	<p>Three coordination mechanisms</p> <ul style="list-style-type: none"> <li>• Static-adaptive management mechanism</li> <li>• Knowledge management mechanism</li> <li>• Proximity mechanism</li> </ul>	<p>Disruptive factors</p> <ul style="list-style-type: none"> <li>• Financial constraints</li> <li>• Legal limitations</li> <li>• Misconceptions</li> <li>• Challenges related to mindset</li> <li>• Difficulties in predicting success (or failure) factors</li> <li>• Market challenges</li> </ul>





Co-innovation	<p>Motives</p> <ul style="list-style-type: none"> <li>• Cultural heritage</li> <li>• Access to a skilled workforce</li> <li>• Innovative capabilities</li> </ul> <p>Barriers</p> <ul style="list-style-type: none"> <li>• Potential barriers associated with the use of artificial intelligence (AI) tools in the innovation process</li> <li>• Potential communication barriers</li> <li>• Skills gaps</li> <li>• Intellectual property</li> <li>• Standardisation</li> </ul>	<p>No mechanism identified so far.</p> <p>Fields of co-innovation</p> <ul style="list-style-type: none"> <li>• Innovations related to music</li> <li>• Innovations related to museums</li> <li>• Innovations in business models</li> </ul>	<p>Disruptive factors</p> <ul style="list-style-type: none"> <li>• Increasing uncertainty and emerging risks related to AI technologies</li> </ul>
Value transfer	<p>Motives</p> <ul style="list-style-type: none"> <li>• Effective learning and knowledge transfer</li> <li>• Promotion of cultural and national knowledge</li> <li>• Building a competitive advantage</li> <li>• Market expansion</li> </ul> <p>No barriers identified.</p>	<p>No mechanism identified so far.</p> <p>Methods and practices</p> <ul style="list-style-type: none"> <li>• Gamification</li> <li>• Simulations</li> <li>• Digitalization of cultural value proposition</li> <li>• Bidirectional licensing (highly effective if the licensing is wide and culturally diverse, thus resulting in building up entire universe around the specific IP).</li> </ul>	Not explored area so far.

Source: own work





**RQ4:** *What are the positive and negative outcomes (results, effects) of co-creation relationships between EVGIE and other CCI entities and impacts on the economy and society?*

Regarding the fourth research question, our analyses show that among the positives recognized so far, there are building competitive advantages and innovative capabilities, mutual profitability and sustainability, and stimulating creativity and technological development. When it comes to the positive macro impacts, we can list economic growth, promotion, development, and creation of culture (including digital culture to the greatest extent), increasing social cohesion and inclusivity. Simultaneously, the negatives have been found as not explored so far.

One of the key areas of impact in the entire GAMEHEARTS project there is inclusiveness. In this specific context, our analyses show that leading lenses up to now are as follows: transgender and non-binary, gender equality, and accessibility for people with mental or physical disabilities. Also, we found that inclusiveness may be considered either regarding the games or video game industry. Importantly the perspective on economic marginalization is not represented in the reviewed literature and reports.

**RQ5:** *What are the success and failure factors of cooperation, co-creation and co-innovation, and value transfer between the VGIE and other CCI entities?*

When it comes to the success and failure factors, even though the success factors can be found in academic publications and business practice, the failure ones definitely seem to be unexplored. Besides the relevant factors identifiable at the stage of addressing RQs 1-3, some key issues worth emphasising and considering when thinking about successful cross-industry cooperation may be listed based on the findings from major and minor case study analyses.

First, the comparative analysis of major cases points to the relevance of consideration of setting up a detailed collaborative framework, ensuring supporting authentic content with creative freedom, focusing on inclusivity, targeting and leveraging public awareness, ensuring both sustainability and social/economic impact, and finally also ensuring educational integration. Second, the comparative analysis of minor cases highlights the relevance of public funding and public policy support, focusing on cross-industry partnerships (not intra-industry ones), targeting and leveraging public awareness, and finally also ensuring the utilization of transmedia, multi-sector narratives, and integration.





### **Models of understanding cross-industry cooperation**

Even though we have not found any models of cross-industry cooperation in the analysed secondary data, we claim that for all of the considered contexts, such a model should be a processual one covering three stages: establishment, execution, and ending of cooperation. Nevertheless, pre-cooperation activities should also be considered (although this pre-stage has not been analysed in our desk research) in which the need or pressure for cooperation has to be recognised, and partner searching and selection practices must be implemented.

### **Missing but needed knowledge and research**

The analysis of the existing body of knowledge has provided us with the answers to the research questions posed at the beginning of our research investigation. However, it has also identified knowledge gaps and recommended directions for future research (which is seen as highly desired among the outcomes of systematic literature reviews - Rosado-Serrano et al., 2018; Paul & Feliciano-Cestero, 2021). These gaps, according to scholars focusing on gaming industry ecosystems, their functioning, and development, particularly in the context of intra- and inter-industry collaboration within CCI, are worth addressing. The analysis of academic literature has identified the following, still existing, knowledge gaps:

#### **Geographic Context**

- Scholars from the UK seem to dominate among academics interested in research on VGI in the considered thematic context, while the rest of the “European perspectives” are rather limited.

#### *Specific research recommendations*

- Studies focusing on markets other than North American, European, and Japanese (Baeza-González, 2021). Indeed, most industry reports focus on the US and Europe.
- Research centred on emerging economies (Simon, 2018).

#### **Social Context**

#### *Specific research recommendations*

- Empirical investigation of the prevalence and characteristics of gaming addiction, recognised as a diagnosed condition and classified as a disorder by the WHO.



## Cultural Context

### *Specific research recommendations*

- Studies – mainly testing and large-scale as well as longitudinal ones – exploring games as a significant component of culture (Deng & Chen, 2023) and virtual heritage, such as digital, cultural, or ludic heritage (Champion, 2020).
- Research on the role of games in creative sectors, including media, in the context of creating and distributing digital content (Simon, 2018).
- Studies – once again, mainly testing and large-scale as well as longitudinal ones – examining games as cultural artifacts, including their impact on players and, more broadly, society (Boudreau, 2022; Reyes-de-Cózar et al., 2022).

## The Functioning of the Gaming Industry and Video Game Ecosystems

- Considering the industry types of actors engaged in cross-industry cooperation, we can notice that, so far, the main focus has been given to music & games, museums & games (outside CCI also: education & games, health & games, sport & games).
- Given the thematic perspective, inclusivity emerges as attracting the growing interest of scholars but still remaining poorly recognised.
- Given the process view on cross-industry cooperation, it is worth emphasising that the stage of ending is the least known and scientifically explored. Indeed, our knowledge at this stage does not exist.

### *Specific research recommendations*

- International studies on the effects of industry collaboration, including developers' innovativeness (Klimas & Czakon, 2018) and implemented innovations (EGDF, 2022) considered as the key drivers of VGDs' development.
- Research on the mechanisms of knowledge sharing, types of shared and developed knowledge, and their relationship to the creation and distribution of games in the context of regional embeddedness (Chaminade et. al., 2020).
- Studies focusing on ecosystems surrounding the video game industry, such as innovation, business, knowledge, or entrepreneurship ecosystems (Klimas & Czakon, 2022).
- Research on the use of AI-generated content in games, for instance, in relation to composed music (Worrall & Collins, 2023).



## Methodological Context

- Number of quantitative research is limited (a quite young field of exploration), now it is the time to test the theoretical claims made so far. Moreover, it is quite surprising that the dominant quantitative methods of data analysis have not been found in the analysed papers (e.g., structural equation modelling, qualitative comparative analysis, necessary condition analysis).
- Industry reports lack a common methodological approach; making comparisons is practically impossible. A good example of inconsistency in operationalization is the term “size of the video game industry”, which, depending on the approach taken, can refer to market capitalization, the value of games sold, or total revenue. The lack of consistency in operationalization, coupled with the absence of clear definitions or descriptions of the phenomena and numerical values, leads to challenges in making comparisons and analysing developmental trends.
- In many cases, industry reports lack methodological description, which makes their reliability questionable. A “flexible” approach to methodological description is, unfortunately, also observable in some scientific publications.

### *Specific research recommendations*

- Mixed-method studies, including mixed-mode research (Haefliger et al., 2010).
- International comparative studies (Klimas & Czakon, 2022).
- Quantitative research testing the significance of various factors influencing the development of the video game industry (Belyaeva et al., 2022) including those allowing researchers to identify the critical/necessary factors (e.g. by the use of necessary condition analysis).

We believe that given the current stock of knowledge, these gaps are worth addressing to enhance our understanding of the functioning and cultural, social, and economic roles of the video game industry and video game ecosystems.





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