i-Game

Building a community for the co-creation of games with high impact on innovation, sustainability, social cohesion, and growth

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Abstract

The i-Game project is a pioneering initiative focused on the co-creation of digital games that foster social cohesion, innovation, and sustainable growth across multiple sectors, including gaming, cultural heritage, and fashion. The project seeks to build an accessible open-source collaborative ecosystem that brings together diverse stakeholders, from cultural institutions like museums to small and medium-sized game studios, enabling them to share knowledge and co-create new digital experiences. A key aspect of i-Game is its commitment to inclusion, aiming to promote inclusion in games, while also providing an accessible and user-friendly experience for everyone to co-create, and also play games, including individuals from underrepresented and vulnerable groups (i.e. people with disabilities). The platform is designed to guarantee equal access and experience for all users, and for them to experience

empowerment through it. By embedding responsible innovation in the development of game-based technologies, i-Game promotes cross-sector collaborations, boosts economic sustainability, enhances social inclusivity, and advances technological development. i-Game aims to ensure that diverse users can access, use, and co-create serious games for the museum and cultural and creative industries (CCIs), engaging with co-created serious games on the platform. This report provides an initial impact assessment of the project, with a particular focus on the methodologies employed to gather and evaluate data and the forecasted results. A combination of qualitative and quantitative methods was used, including surveys, participant observations, interviews, and focus groups. These tools were designed to assess the effectiveness of the project's activities in major identified outcome areas, such as knowledge exchange, network development, community and social relationships, economic development, learning & capacity building, social inclusiveness, and technological development. This report outlines these methodologies and provides insights into how they have shaped the evaluation process, with a view to expected project impact and supporting future iterations and improvements of the i-Game project.

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EXECUTIVE SUMMARY

The i-Game project is an innovative initiative designed to use game-based methodologies to foster inclusive game development and inclusiveness, cross-sectoral collaboration, enhance cultural engagement, and promote sustainable growth within the European creative, cultural, and technological industries. The project aims to bridge the gap between sectors such as gaming, culture, fashion, and social impact, using the co-creation of inclusive digital experiences to drive forward ethical and responsible technological integration. A key aspect of i-Game is its commitment to inclusion and accessibility, aiming to provide a user-friendly co-creating and play experience for everyone, including individuals from underrepresented and vulnerable groups. This report presents an initial impact assessment of the i-Game project, focusing on the updated impact framework of the project, a detailed data gathering strategy, including the specific tools used for data collection, and outlines the clear expected future impact in key areas of the project's implementation. To evaluate the project's potential impacts, a multi-method assessment framework was employed. This involved a combination of qualitative and quantitative research tools, including surveys, participant observations, interviews, focus groups, network analysis matrix, internal database and data extracted from the i-Game platform. These tools were designed to gather insights from a broad range of stakeholders with diverse needs and abilities, from diverse sectors and interests, such Museums/CCIs institutions/professionals, Museums/CCIs visitors/customers, Textile and Fashion industry/professionals, Textile and Fashion customers, Game players, Game co-creators, Game industry, Citizens, Policy Makers, SMEs, Higher Education and Research Institutions, Social Economy Organisations. By combining empirical observations with co-creation outputs, the assessment aims to provide a comprehensive understanding of the potential contributions of the i-Game project across key areas. The methodology is structured to capture the anticipated impact across seven interrelated outcome areas: knowledge exchange, network development, community and social relationships, economic development, learning and capacity building, social inclusiveness, and technological development. Data collected through these methods will be used to assess how well the project can catalyse innovation, provide educational and inclusion experience to users, foster cross-sector collaboration, and enhance the inclusivity of digital tools and experiences.

Abbreviations and Acronyms

AR	Augmented Reality
CCIs	Cultural and Creative Industries
FG	Focus Group
INT	Interviews (qualitative)
KPI	Key performance Indicator
LCA	Life Cycle Assessment
MVP	Most Valuable Outcome
NAM	Network Analysis Matrix
PO	Participant Observation
SROI	Social Return on Investment
T0	Time zero, Before Enrolment-Subscription Survey.
T1	Time one, Right After- Immediate Impact Survey
T2	Time two, Right After- Immediate Impact Survey
TG	Target Group
VR	Virtual Reality

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INTRODUCTION

The i-Game project represents a complex, ambitious and experimental initiative within the Horizon Europe framework, aiming to integrate the fields of digital gaming, culture, and social inclusion. At the core of i-Game's mission is the co-creation of inclusive digital games, a collaborative approach that fosters social cohesion and promotes sustainable growth across diverse sectors, including gaming, cultural heritage, and technology. By prioritizing accessibility, the project ensures that individuals from vulnerable and underrepresented groups, including those with disabilities, are empowered to participate not only in consuming but also in creating gaming content. This inclusive approach to game development aims to bridge gaps and provide equal opportunities for cultural and creative expression for all. This report offers an initial evaluation of i-Game's impact, highlighting the project's methodologies, data collection strategies, and forecasted impact in outcome key areas. The structure of the report reflects the comprehensive approach taken to assess both the theoretical foundations and the practical applications of the i-Game project's impact.

Chapter 1 begins with a theoretical perspective on social impact, providing the necessary context to understand how the i-Game project aims to generate social value. The Theory of Impact and Value is discussed, outlining how impact is understood and quantified in the context of the project. The methodology for the impact assessment is also explained, focusing on the tools and processes used to measure the outcomes of the project. Additionally, the literature on outcomes in the domains of culture and gaming is reviewed, setting the stage for understanding how i-Game contributes to these areas. The chapter concludes with a discussion on Social Return on Investment (SROI) theory, providing insight into how social value is measured and forecasting how the project's outcomes will be translated into SROI metrics.

Chapter 2 details the impact and data frameworks that guide the assessment process for the i-Game project. The first section of this chapter focuses on the update of the impact framework, revising and refining the model that underpins the project's evaluation strategy. The data framework follows, outlining the tools and methods used to gather and analyse data related to the project's impact. One of the key components of this chapter is the updated SROI model, where changes in financial proxies are explained, and the second forecast of SROI is presented. It is important to note that while the data and SROI are forecasted at this stage, they will continue to evolve as the project progresses and more data becomes available.

Chapter 3 delves into the context and activity analysis, providing a comprehensive overview of the project's activities to date. A synthetic description of the monitored activities is presented, followed by an exploration of the stakeholder map. This chapter highlights the various sectors and individuals involved in the project, demonstrating how i-Game brings together diverse actors from the gaming, cultural, and social sectors to collaborate in the co-creation of inclusive gaming experiences. Understanding the stakeholders and their roles is critical in assessing the project's reach and influence, ensuring that the impact is not only wide but also inclusive of marginalized groups.

Chapter 4 focuses on the data gathering strategy and the specific tools employed to track the project's progress. It begins with an overview of the co-design process, where partners actively contribute to the creation of the data gathering strategy and tools, ensuring that they are tailored to match project expectations and respectful of actual operability constraints.. The chapter goes on to describe the various data collection tools used to capture both quantitative and qualitative data, including i-Game platform, online surveys for participants and

organizations, network analysis matrices, dissemination and communication, internal deliverables and databases and qualitative tools. These tools provide a multi-dimensional view of the project's impact, capturing data from diverse sources and ensuring a comprehensive evaluation. Furthermore, qualitative research methods are used to provide deeper insights into the experiences of participants and stakeholders, giving voice to those involved in the project and helping to understand the nuances of the impact generated by i-Game's activities.

Chapter 5 outlines the next steps for the project, detailing how the data gathering strategy will be further implemented and integrated into project management processes. The chapter emphasizes the importance of data analysis and impact-project management integration, ensuring that the insights gathered through data collection are used to refine and improve project activities.

The report concludes with a discussion on the expected impact of the i-Game project. Chapter 6 highlights the projected expected impact in the key outcome areas: knowledge exchange, network development, community and social relationships, economic development, learning and capacity building, social inclusiveness, and technological development. The findings presented in this report will guide future improvements in the i-Game project and provide valuable insights for the development of inclusive gaming and cultural initiatives across Europe.

1 SOCIAL IMPACT: A THEORETICAL PERSPECTIVE

1.1 Theory of Impact and Value

In policy and evaluation literature, impact generally refers to the broader, long-term changes produced by an intervention, beyond its immediate outputs and outcomes (OECD, 2022). Impact addresses the ultimate significance and transformative effects of a project, including intended or unintended social, economic, or environmental changes (OECD, 2022). It is distinguished from outputs – the direct products of project activities (typically tangible and within the project's control) – and outcomes – the short- to medium-term results or changes arising from those outputs (OECD, 2022). For example, in an inclusive cultural gaming project like i-Game, an output might be the number of co-created games or workshops held with the participation of diverse stakeholders, including people with diverse needs and abilities, an outcome could be participants' increased digital skills or cultural awareness, and an impact might be enhanced social cohesion or innovation capacity in the community. The classic impact value chain formalizes this sequence as inputs → activities → outputs → outcomes → impact, highlighting how immediate results lead to longer-term change (Clark et al., 2004). This logical progression underpins many evaluation models, including logic models and theories of change (Ebrahim & Rangan, 2014). The theory of change concept specifically requires articulating how project activities are presumed to lead to outcomes and impacts, making explicit the assumptions about cause-effect linkages (Weiss, 1995). Such theoretical grounding is crucial to understanding and eventually measuring the value that a project creates.

Value in the context of social impact refers to the benefit or importance of those changes for stakeholders and society. Recent theory emphasizes that value is often multi-dimensional and stakeholder dependent. According to stakeholder theory (Freeman, 1984), an initiative's value cannot be reduced to a single metric (like profit); instead, it is defined in relation to diverse stakeholders' interests. Different stakeholders (e.g. community members, cultural institutions, policymakers, gamers) may perceive the "success" and value of a project like i-Game in different ways – from enhanced community identity to new market opportunities. Modern approaches therefore speak of creating shared value or blended value, merging social, cultural, and economic value creation. Emerson (2003) argues that all organizations inherently produce a blend of economic, social, and environmental value, and that true impact entails integrating these dimensions rather than viewing them separately. This blended value proposition suggests that the impact of an inclusive cultural gaming project should be assessed not only in social terms (e.g. inclusion, learning, well-being) but also how it interfaces with economic and environmental value (Emerson, 2003). For instance, a project outcome like increased cultural tourism from a heritage game has economic value for a community while also generating social value through heritage preservation and education – together constituting its blended value.

Underpinning the theory of impact is also the idea of additionality or change relative to what would have occurred without the intervention. In other words, impact equates to the portion of observed outcomes that can be attributed to the project's activities beyond the status quo or other influences (Brest, 2010). This concept of attribution highlights why impact is challenging to pin down: one must consider counterfactual scenarios and external factors. Nonetheless, the pursuit of impact is central in EU projects – including i-Game – which seek not just to produce outputs (like an accessible open-source game development platform or pilot games) but to effect meaningful social change (innovation, cohesion, sustainability). In

summary, the theory of impact and value sets the foundation by defining what we mean by social impact (long-term change in society), how it differs from outputs and immediate outcomes, and how that impact reflects the creation of value for stakeholders and society at large. Grounded in frameworks like the impact value chain and stakeholder theory, this perspective directs us to think holistically about how a project's activities ultimately generate beneficial change and social value.

1.2 Methodology of Impact Assessment

As already highlighted in section 3.8 of D2.1 Research Report v.1 and D2.3 Interactive Real-Time Dashboard, the Impact Assessment of i-Game is grounded in a combination of methodological and theoretical foundations, using a mix of quantitative and qualitative tools, such as Theory of Change, Social Return on Investment (SROI), Social Impact Assessment (SIA), and Life Cycle Assessment (LCA). In this chapter, we will focus in greater depth on the qualitative dimensions of the sector-specific methodologies. Understanding impact theoretically is one side of the coin; the other is how to assess and demonstrate impact methodologically. Over the years, a range of evaluation approaches has been developed to capture social impact, each with different assumptions and implications. A fundamental distinction is between positivist, attribution-focused methods and interpretive, theory-driven methods in impact evaluation. Traditional summative evaluation methods often aim to quantify whether an intervention caused observed changes, usually by isolating effects. For instance, experimental and quasi-experimental designs (such as randomized controlled trials or matched comparisons) seek to establish a counterfactual – what would have happened without the intervention – thereby attributing outcomes to the project with a degree of certainty (Gertler et al., 2016). These designs are powerful for assessing discrete outcomes (e.g. a game's effect on test scores) and align with a results-based management mindset. However, they can be costly, ethically or practically unfeasible in social innovation contexts, and may miss nuanced or emergent impacts. As an alternative, theory-based evaluation methods have gained prominence for complex social interventions. Rather than only asking "did it work?", they ask "how and why did it work or not, for whom, and under what conditions?" (Weiss, 1997). One influential example is realist evaluation (Pawson & Tilley, 1997). Realist evaluation posits that programs work through underlying mechanisms that interact with context; thus, an intervention's impact is understood as context dependent. A realist evaluator of i-Game might investigate, for example, how co-creation workshops (mechanism) lead to greater sense of ownership and social cohesion among participants, and why this might occur in one cultural setting but not another due to contextual differences (e.g. local gaming culture, institutional support). The realist approach yields rich insights by formulating and testing hypotheses in the form of context-mechanism-outcome configurations (Pawson & Tilley, 1997). Its implication is that impact is not a single universal effect size, but a pattern of what works for whom in which circumstances – knowledge that is highly valuable for scaling and transferring solutions across Europe's diverse cultural contexts.

Another increasingly relevant approach is developmental evaluation (Patton, 2011). In innovative projects operating in uncertainty – such as a Horizon Europe project developing a novel open-source game platform – developmental evaluation embeds an evaluator in the team to continuously collect data, provide feedback, and support iterative adaptation. Instead of judging success at the end, this approach helps shape the innovation in real-time by examining emergent outcomes and unintended effects. Patton (2011) advocates that developmental evaluation is suited for initiatives tackling complex social change because it

treats the evaluation process as part of development, recognizing that the "theory of impact" may evolve as the project learns and pivots. For i-Game, a developmental evaluator might track early signs of community engagement or learning during pilot activities and use those insights to refine subsequent interventions, ensuring the project maximizes impact through continuous improvement. The methodological implication is that impact is seen as a moving target in a dynamic system, requiring flexible tracking rather than a fixed, before-and-after measurement. Beyond these, there are numerous methodological frameworks to measure social impact. Many social sector organizations use a mixed-methods approach, combining quantitative indicators (e.g. number of new collaborations formed, participant surveys on skills gained) with qualitative evidence (interviews, case studies, personal stories of change) to build a comprehensive impact narrative (Yin, 2017). There are also participatory methods such as outcome harvesting and most significant change technique that actively involve stakeholders in identifying and valuing the outcomes they perceive as most significant (Davies & Dart, 2005). These methods resonate with stakeholder theory by recognizing that different stakeholders may experience different outcomes and that their perspectives are crucial to understanding a project's full impact. Crucially, each methodological choice carries implications for what "impact" gets captured. A narrow quantitative evaluation might demonstrate accountability in terms of measurable targets (e.g. X% increase in visitors to a digital museum exhibit), but it could overlook harder-to-measure yet important changes (like improved cross-cultural understanding or creative confidence among participants). Conversely, a purely qualitative approach might richly document individual experiences and unexpected changes but face scepticism in terms of rigor or comparability. Therefore, best practices in impact methodology often recommend a combination of approaches: using a results framework or logic model to ensure clarity of expected outputs and outcomes and employing theory-driven and participatory evaluation to uncover deeper insights and verify the causal pathways (Rogers, 2014). For example, the impact value chain model (Clark et al., 2004) can be used as a scaffold to ensure we link activities to outputs to outcomes in a logical sequence, while methods like realist or developmental evaluation dive into how those links play out in practice and adjust for complexity.

In summary, the methodology of impact in a social innovation project context must balance rigor and realism. It spans from summative approaches focused on attribution and accountability, to formative and developmental approaches focused on learning and improvement. European Commission research projects increasingly adopt a mix of these methodologies to satisfy both the accountability needs (demonstrating that public funds led to real social benefits) and the learning needs (understanding how to maximize and sustain those benefits). A rigorous impact methodology for a project like i-Game would clearly distinguish its outputs, outcomes, and long-term impacts in a results framework, and then apply appropriate tools (surveys, network analysis, case studies, etc.) and evaluation models (perhaps a realist or developmental lens) to capture the multi-faceted changes generated across the cultural and gaming ecosystem. The result is an evidence-based, nuanced account of social impact that stands up to scrutiny and guides future policy or practice.

1.3 Literature on Outcomes in the Domains of Culture and Gaming

Both culture and gaming are domains with rich bodies of literature on their social outcomes. Projects situated at the intersection of culture and gaming, such as i-Game, draw on two strands of research: one concerning the impacts of arts and cultural participation, and another concerning the impacts of games and interactive media. A review of these literatures provides insight into what kinds of outcomes might be expected and valued.

In the cultural sector, numerous studies have explored how engagement with arts, heritage, and creativity can produce a range of social outcomes. Researchers have long distinguished between intrinsic benefits of culture (the immediate aesthetic, intellectual, or spiritual enrichment experienced by individuals) and instrumental outcomes (tangible benefits in other areas of social and economic life) (McCarthy et al., 2004). On the instrumental side, evidence suggests cultural programs can strengthen social cohesion and community identity. For instance, arts participation has been linked to increased social capital, as people build networks and trust through collective cultural experiences (Putnam, 2000; Matarasso, 1997). Community-based arts projects have been documented to foster feelings of belonging and pride of place, contributing to social cohesion in neighbourhoods (Belfiore & Bennett, 2010). Another outcome area is personal development and well-being. Engagement in cultural activities (be it museum programs, performing arts, or heritage crafts) often leads to improved confidence, creative skills, and emotional expression among participants (Crossick & Kaszynska, 2016). There is growing evidence of positive impacts of arts on mental health and life satisfaction, underpinning initiatives like arts-on-prescription in some countries (Daykin et al., 2018). Educational and cognitive outcomes are also noted: cultural heritage projects, for example, can enhance participants' knowledge of history and intercultural understanding (Bollo et al., 2017). Even if not in formal classroom settings, museums and cultural games can facilitate informal learning and curiosity (Smith et al., 2016). It should be acknowledged that measuring these outcomes is challenging, and some scholars have critiqued the cultural policy field's tendency to over-claim benefits without robust evidence (Belfiore, 2006). Nonetheless, the consensus in recent literature reviews is that while not automatic, cultural participation can yield valuable social outcomes under the right conditions, including greater tolerance, intercultural dialogue, community empowerment, and even economic regeneration through cultural tourism (Jeannotte, 2017). These outcomes align with the i-Game project's aims to leverage culture and creativity (through games) for social cohesion and innovation.

Turning to the gaming domain, a parallel body of research examines how games (including video games, serious games, and gamified experiences) affect players and communities. Early discourse on video games often focused on negative outcomes (such as aggression or addiction), but contemporary research provides a more nuanced and often positive picture of gaming's impacts. A landmark systematic review by Connolly et al. (2012) found that playing digital games is linked to a variety of cognitive, behavioural, and affective outcomes. In educational contexts, serious games (games designed for learning or training) have demonstrated outcomes like improved knowledge acquisition and retention, especially in subjects like mathematics, science, and language learning (Connolly et al., 2012). Beyond cognitive gains, games can influence attitudes and behaviours. Well-designed serious games for social issues have been used to raise awareness and empathy on topics such as public health, human rights, or environmental sustainability (Ruggiero, 2015). For example, immersive story-driven games have shown the ability to change players' attitudes by allowing them to "live" perspectives of others, thereby increasing empathy and reducing bias (Peng et al., 2020). This suggests that games can be powerful tools for social education and perspective-taking – a relevant finding for projects aiming to promote social inclusion through gaming.

One of the most researched positive outcomes of gaming is the development of social connections and communities. Contrary to the stereotype of the isolated gamer, many games – particularly multiplayer and online games – involve rich social interaction and collaboration. Studies on online gaming communities (e.g. in Massively Multiplayer Online games) have found that players often develop bridging social capital (forming friendships and networks

across diverse groups) and sometimes bonding social capital (strengthening ties within a group) through their gaming interactions (Steinkuehler & Williams, 2006; Domahidi et al., 2014). Gaming clans, guilds, or local game events can function as social hubs where teamwork, communication, and leadership skills are fostered (Ducheneaut et al., 2007). These social dynamics suggest that gaming can enhance teamwork skills, cultural exchange (in international game communities), and a sense of belonging – all of which are pertinent outcomes for social cohesion. Moreover, the creative and participatory culture around gaming (modding, fan art, game jams, etc.) can empower individuals to become creators, not just consumers, potentially increasing their technical skills and creative confidence (Smith et al., 2013). In the context of culture and heritage, gamification and game-based learning have been explored as ways to engage new audiences. For instance, museums employing game elements in exhibits have reported increased visitor engagement and learning outcomes (Russo et al., 2014). A review of serious games in cultural heritage by Mortara et al. (2014) concluded that such games can effectively stimulate interest in heritage content and enhance knowledge gain, although maintaining authenticity and balancing education with entertainment are ongoing challenges. This indicates a promising synergy between culture and gaming: games can make cultural content more accessible and interactive, leading to outcomes like greater cultural awareness among youth, or more diverse audiences for heritage sites.

Inclusive gaming is a powerful tool for empowerment, offering individuals with disabilities—particularly those with cognitive and sensorimotor impairments—valuable opportunities for social engagement, skill development, and cultural participation. Video games have been shown to significantly enhance cognitive and sensorimotor functions, providing therapeutic benefits for individuals with cognitive and senso-motoric disabilities. Cognitive training games have been used to support individuals with neurological conditions, such as stroke survivors, in improving memory, attention, and problem-solving skills (Katz et al., 2016). These games facilitate neuroplasticity, where the brain forms new neural connections to compensate for injuries, thereby aiding in cognitive rehabilitation. Furthermore, video games can serve as an effective tool for individuals with emotional regulation challenges, often associated with developmental disabilities, autism, and mental health conditions. Games provide a controlled environment for practicing emotional responses to various in-game scenarios, promoting self-regulation, and reducing anxiety. This allows individuals to develop coping strategies and increase their emotional resilience, which is particularly important for those facing social exclusion due to their disabilities (Villani et al., 2018). Another important aspect of inclusive gaming is its ability to reduce social exclusion. People with cognitive or sensorimotor disabilities often experience isolation due to physical barriers or limited access to social opportunities. Through online multiplayer and social gaming environments, individuals with disabilities can form meaningful connections with others, regardless of their physical location. These virtual communities provide a space where individuals can socialize, share experiences, and collaborate on projects, helping to combat the isolation that many individuals with disabilities face in their daily lives. By participating in these communities, players can develop social skills, create friendships, and engage in teamwork, which enhances their sense of belonging and reduces feelings of social marginalization (Nguyen, 2022) Moreover, inclusive gaming plays a key role in fostering access to culture. It enables individuals from marginalized groups to participate in creative processes and collaborative endeavours that were previously inaccessible. For instance, people with disabilities are increasingly involved in the design and development of accessible games, which gives them a platform to contribute to cultural content in ways that are personally meaningful. This participation enriches the cultural landscape by ensuring that cultural products reflect a diverse range of experiences,

perspectives, and abilities. By providing adaptive tools and making gaming experiences more inclusive, the industry is promoting cultural production that is accessible to all, irrespective of physical or cognitive limitations (Nguyen, 2022). In essence, inclusive gaming is about providing individuals with disabilities the opportunity to engage, create, and thrive in both the gaming world and broader cultural communities. Through participation, they can overcome the barriers of exclusion, ensuring that cultural content and creative processes are open and accessible to everyone, regardless of ability.

It is also important to note what the literature says about outcome assessment in these domains. Both cultural impact and gaming impact studies highlight the need for multi-method evaluation. Because outcomes like social cohesion or attitude change are complex and context-dependent, studies often combine quantitative measures (surveys, psychometric scales for empathy, social connectedness indices, etc.) with qualitative evidence (personal testimonies, observations of community interactions) (Belfiore & Bennett, 2010; Baranowski et al., 2016). This triangulation is necessary to substantiate claims of impact. For example, if i-Game introduces a co-created game in a museum setting, one might measure usage statistics and quiz scores (to see if knowledge was learned) but also conduct focus groups with museum visitors and staff to capture less tangible effects like excitement, inspiration, or changes in how people relate to the museum. Literature in both domains also cautions about over-attribution: many factors outside the game or cultural activity can influence outcomes (Belfiore, 2006). Thus, rigorous studies attempt to control or at least account for external influences (e.g. by using comparison groups in game-based learning trials, or by situating arts impact within broader community change efforts).

In summary, the literature across culture and gaming domains identifies a spectrum of potential outcomes: from individual-level effects (skills, knowledge, attitudes, well-being) to group and community effects (social ties, cultural identity, inclusive participation, innovation). A project operating in these domains can draw on this evidence base to anticipate and plan for desired outcomes. In the case of i-Game, outcomes might include increased engagement of citizens with cultural heritage (a cultural outcome), enhanced digital literacy and creativity (an educational outcome of gaming), new cross-sector collaborations (an innovation outcome), and stronger community bonds through shared gaming experiences (a social cohesion outcome). The key insight from the literature is that achieving such outcomes requires thoughtful design – games must be engaging, and contextually relevant, cultural content must be well-integrated, and the process (e.g. co-creation) can itself be a driver of positive social results. Moreover, ongoing evaluation is needed to verify these outcomes and understand how they arise, which connects back to the project's impact methodology discussed earlier.

1.4 SROI Theory

One influential framework that bridges the theory of impact and its valuation in monetary terms is Social Return on Investment (SROI). SROI emerged in the late 1990s as a method to quantify the social value created by programs or organizations, inspired by traditional financial return on investment calculations (Nicholls et al., 2012). At its core, SROI attempts to answer the question: for each unit of resource invested, what is the broader social value generated? In theory, this provides a single ratio (for example, an SROI ratio of 3:1 would mean €3 of social value for every €1 invested). However, the process of arriving at that figure is as important as the number itself, and involves a rigorous methodology grounded in stakeholder engagement and impact measurement. The SROI methodology can be seen as a practical application of the

impact value chain coupled with cost-benefit analysis principles. It typically involves several stages (Nicholls et al., 2012):

1. Establishing scope and identifying stakeholders – Defining the boundaries of what will be analysed (e.g. a specific project or program) and identifying key stakeholder groups who experience change. SROI emphasizes involving stakeholders from the start to determine what outcomes are material to include in the analysis (Nicholls et al., 2012).

2. Mapping outcomes – This entails developing an impact map or logic model that links inputs and activities to outputs, and then to outcomes and impacts. For each stakeholder, the intended outcomes (changes) are articulated. For example, in i-Game, stakeholders include participating cultural organizations, game developers, community players, including those with different needs and abilities, etc., each with different outcomes (such as increased digital inclusion, new skills, improved social capital).

3. Evidencing outcomes and assigning values – Here, data is collected to verify to what extent outcomes occurred. Importantly, financial proxies are identified for each outcome. A financial proxy is a monetary value that represents the worth of an outcome to stakeholders. For instance, if an outcome is "improved mental well-being," a proxy might be the cost of therapy sessions that would achieve a similar benefit (as used in some health economics studies). This step often draws on social science research or stakeholder surveys to estimate how much stakeholders value certain changes (Arvidson et al., 2013). Techniques from economics like willingness-to-pay or referencing public service costs are employed to monetize outcomes that do not have market prices.

4. Establishing impact – This involves adjusting the outcome values for factors such as deadweight, attribution, drop-off, and displacement. In SROI, deadweight refers to the portion of outcome that would have happened anyway without the intervention (counterfactual); attribution accounts for how much of the outcome was caused by others or other factors; displacement checks if the outcome in one area caused a reduction elsewhere; and drop-off considers how outcomes diminish over time. By making these adjustments, SROI aims to isolate the net impact attributable to the project (Nicholls et al., 2012).

5. Calculating the SROI – After the above, all monetized benefits (adjusted for impact) are summed and compared to the total investment. The result can be expressed as a ratio or in narrative form. For example: "Over one year, the project generated €600,000 worth of social benefits for an investment of €200,000, yielding an SROI ratio of 3:1."

6. Reporting, using and embedding – SROI is not just a number; the framework encourages transparent reporting of assumptions and results, and using the findings for organizational learning and stakeholder communication. For instance, if certain outcomes yielded particularly high value, the project might decide to focus more on those activities.

SROI theory is rooted in concepts of blended value and stakeholder theory. It aligns with the blended value notion (Emerson, 2003) by attempting to put social and environmental value on an equal footing with financial value – effectively "blending" them into a single metric. It also requires stakeholder input to decide what matters (what to value and how), reflecting a normative stance that those affected by an intervention should help define its value (Nicholls et al., 2012). For example, in valuing outcomes of a cultural gaming project, stakeholders

(museum curators, players, educators, etc.) might each highlight different outcomes they care about – SROI would capture multiple types of value (educational, social, economic) and aggregate them.

The appeal of SROI, especially to funders and policymakers, lies in its ability to communicate impact in economic terms. A monetary ratio or value can be persuasive, simplifying complex social outcomes into a form that resonates with investors or budget-holders. It has been applied in domains ranging from community development to health interventions and cultural programs, often revealing that social projects generate substantial value for money by preventing costs elsewhere (e.g., reduced healthcare costs due to better well-being, increased economic activity from cultural tourism, etc.).

However, SROI theory and practice are not without controversy and limitations. Scholars have pointed out several challenges. One major critique is the subjectivity and uncertainty in monetization (Arvidson et al., 2013). Many outcomes (like empowerment, social cohesion, cultural enrichment) are intrinsically difficult to quantify in monetary terms without making debatable assumptions. The choice of financial proxies can greatly influence the result and may vary between analysts, which affects the comparability and objectivity of SROI analyses. Arvidson et al. (2013) note a tension between the participatory ethos of SROI (allowing each analysis to be tailored to stakeholder context) and the desire to use SROI for comparisons or competition (which would require standardization). In other words, while one project's SROI ratio might be 3:1 and another's 5:1, those numbers might be as much a product of different methods and assumptions as of actual performance differences.

Another issue is attribution of causality. SROI relies on estimations of what would have happened otherwise (deadweight) and how much of the outcome is due to the project (attribution). These are inherently tricky to measure accurately without rigorous impact evaluation designs. If those estimations are off, the SROI calculation can be misleading (Gargani, 2017). Critics argue that an overreliance on a single ratio oversimplifies the story – a high SROI ratio might give a false sense of precision about impact, whereas a low ratio might undervalue important qualitative changes that resist monetization (Millar & Hall, 2013). SROI proponents have responded by emphasizing that the process and qualitative narrative are as important as the number, but this nuance can be lost if audiences focus only on the headline figure.

Resource intensity is another consideration: conducting a full SROI analysis can be data- and labour-intensive, requiring extensive stakeholder engagement, outcome tracking, and research into valuation proxies (Maier et al., 2015). For a project with limited evaluation capacity, a simplified or partial SROI approach might be taken, but that can compromise robustness. There is also the philosophical debate: some argue that putting a price on social goods (like cultural heritage or social inclusion) is counterproductive or ethically fraught, potentially undermining the intrinsic values by reducing them to monetary terms (Belfiore, 2015). Others contend that in a world of finite resources, such monetization is necessary to ensure social projects get due consideration alongside projects with easily quantified economic returns (Nicholls, 2017).

In spite of these debates, SROI remains a prominent part of the impact assessment landscape and has been endorsed in various guidelines (for example, by the EU for social enterprise impact measurement, and by nonprofits and charities seeking to demonstrate their value). For a project like i-Game, which operates in the cultural and creative sector, SROI could theoretically be used at the end of the project to articulate its overall social value: for instance, aggregating the benefits of accessible game creation, increased social cohesion, digital

upskilling of participants, preservation of cultural heritage through game content, and any economic spillovers (like jobs created or tourism boosted by cultural gaming events). Doing so would require careful groundwork – defining indicators for those diverse outcomes and gathering data throughout the project. Even if a full SROI is not conducted, the theory behind SROI offers useful principles: focus on material outcomes, involve stakeholders in defining value, consider the counterfactual, and strive to translate outcomes into terms decision-makers understand (Nicholls et al., 2012).

In conclusion, SROI theory exemplifies a comprehensive attempt to bridge qualitative impact and quantitative value. It sits at the intersection of evaluation and accounting, pushing the field to consider not just whether an impact has been made, but how much that impact is worth in societal terms. While one must be cautious in its application – mindful of the assumptions and the risk of oversimplification – SROI provides a valuable framework for discussions about impact in projects that aim to create social good. For Horizon Europe projects with broad social aims, understanding SROI theory encourages a disciplined approach to impact: one that is outcomes-oriented, stakeholder-centred, and conscious of demonstrating value for money. This aligns with the broader trend in research and innovation funding towards not only doing good but also showing evidence of that good in ways that can inform policy and future investment in culture and gaming for social impact.

2 IMPACT AND DATA FRAMEWORKING

2.1 Update of the Impact Framework

As the project progressed, the Impact Framework was periodically updated to ensure that it remained aligned with the clearer definition of evolving project goals and objectives. As the design activities, which were prerequisites for the actual implementation of the project, progressed, project partners began to more accurately identify the expected outcomes of the project. This iterative process involved the review and refinement of the indicators and outcomes initially defined. The aim was to determine which indicators and outcomes were the most relevant for the project's impact assessment and to ensure that they reflected the project's activities and objectives. Through this process, certain indicators and outcomes were evaluated for their continued relevance and in cases where they were found to be less aligned with the project's strategic goals or lacked sufficient data to be effectively measured, some indicators were eliminated from the framework. This approach ensured that the Impact Framework remained both comprehensive and focused, enabling a more accurate and streamlined assessment of the project's social, economic, and environmental impact. It also allowed for the inclusion of new, more relevant indicators as the project evolved, thereby enhancing the quality and robustness of the impact assessment process. Specifically, the update of the Impact Framework has focused on the following key adjustments.

1. One of the primary aims was to identify the most valuable outcome, ensuring that the outcomes selected provide the most significant insights into the project's impact. The Most Valuable Outcomes were selected by the consortium through co-design sessions involving the group dedicated to creating the project's narrative, which spans across work packages 3 and 4. During these sessions, the consortium partners worked together to identify the most significant outcomes, based on the project's objectives and the needs of the involved stakeholders. The co-design process allowed for the alignment of a shared vision for the project, ensuring that the selected outcomes would effectively measure the project's impact in a clear and meaningful way, both in terms of direct results and broader impacts.

The identified most valuable outcome are the following:

Table 1. Most valuable Outcomes

Outcome Area	#	Outcome
Knowledge Exchange	1.1	**Expanded knowledge on arts and culture**
Network Development	2.1	**Enhanced network development**
Community and Social Relationships	3.2	**Increased participation in cultural activities**
Economic Development	4.2	**Boosted organisations sustainability**

Outcome Area	#	Outcome
Learning & Capacity Building	5.2	**Improved educational performance/experience**
Social Inclusiveness	6.1	**Elevated awareness on sustainability and inclusion**
Social Inclusiveness	6.2	**Increased accessibility to cultural initiatives**
Technological Development	7.1	**Human-centred technology development**

The Knowledge Exchange outcome area is aimed at expanding knowledge on arts and culture, ensuring that stakeholders gain a deeper understanding of these subjects through the project's activities. In the realm of Network Development, the goal is to enhance the development of networks, facilitating greater collaboration and the sharing of resources among stakeholders. Regarding Community and Social Relationships, the project seeks to increase participation in cultural activities, encouraging more diverse individuals to engage with cultural initiatives and events. The Economic Development outcome focuses on boosting the sustainability of organizations, helping them to become more resilient and capable of enduring beyond the project's duration. The Learning & Capacity Building area aims to improve educational performance and experiences, ensuring that participants acquire valuable skills and knowledge. In terms of Social Inclusiveness, the project aims to elevate awareness of sustainability and inclusion issues, while also increasing accessibility to cultural and game design initiatives, making these opportunities available to a wider and more diverse audience, empowering vulnerable people as developers and central users. Finally, the Technological Development area focuses on advancing human-centred technology development, ensuring that technological solutions are designed with a strong consideration for user needs and societal impact. developing an accessible open-source game development platform.

2. Secondly, as part of this process, certain outcomes or outcomes' specific KPI were eliminated according to three principles:

- they were found to be less relevant.
- it was found to be difficult or impossible to yield actionable data for them during the project lifetime or too ambitious to be generated.
- they were repetitive or very similar to other KPIs, and the data gathering would have produced double counting.

Below there is the list of the eliminated KPIs.

Table 2. Eliminated KPIs

#O	Outcome description	#KPI	KPI	Reason for elimination
3,1	Strengthened sense of belonging to a broader community	20	Number of community-driven initiatives supported by the project	It was very similar to KPI #12 *"Number of initiatives and projects launched"*.
4,1	Increased job opportunities	24	Percentage of stakeholder organizations developing job descriptions for new roles inspired by the project's outcomes	This KPI was found to be too ambitious for the scope of the project.
4,2	Boosted organisations sustainability	27	Number of organizations reporting improved sustainability practices	This KPI was found to be too ambitious for the scope of the project.
4,3	Innovation in cultural services and products	29	Number of newly created or innovated products	This KPI was merged into KPI #25 *"Number of new services or products launched or innovated"*.
7,1	Human-centred technology development	48	Number of users participating in workshops on heritage promotion and education through gamification	This KPI was found to be too ambitious for the scope of the project.
7,2	Fostered legal awareness and ethical-design culture in video game industry	52	Number of video game professionals reporting participation in external legal training programs	This KPI was found to be less relevant and out of the real aim of the project.
		53	Number of video game companies and SMEs adopting legal compliance frameworks	This KPI was found to be less relevant and out of the real aim of the project.

		55	Number of video game professionals reporting participation in external ethics training programs	This KPI was found to be too ambitious for the scope of the project.

Even though some KPIs were eliminated during the revision process, no Outcome Area or Outcome has been deleted. The decision to eliminate certain KPIs was made to streamline the measurement process and ensure that only the most relevant and impactful indicators are used to assess the project's progress. However, all key outcome areas and outcomes have been retained to ensure the project continues to align with its original objectives and deliver the intended impacts. This ensures that the scope of the project's goals remains intact while focusing on the most meaningful data for evaluation.

Table 3. Updated Impact framework insights - Outcome areas, outcomes and KPIs

Outcome Area	#	Outcome	#KPI	KPI
Knowledge Exchange	1,1	Expanded knowledge on arts and culture	1	Percentage of end-users reporting increased knowledge on arts and culture after project activities
	1,1	Expanded knowledge on arts and culture	2	Percentage of cultural institutions reporting improved knowledge exchange
	1,1	Expanded knowledge on arts and culture	3	Number of empowered professionals understanding culture- & fashion-related issues in game development
	1,1	Expanded knowledge on arts and culture	4	Number of stakeholders claiming improved sensitivity and awareness of cultural content
	1,2	Expanded knowledge on technology development	5	Percentage of cultural institutions/museum administrators reporting new knowledge on creating cultural experiences and narratives

	1,2 **Expanded knowledge on technology development**	6	Number of empowered professionals understanding tech-related issues in game development
	1,2 **Expanded knowledge on technology development**	7	Number of cultural & textile/fashion organisations reporting enhanced knowledge on gaming and tech sectors
	1,2 **Expanded knowledge on technology development**	8	Number of empowered professionals understanding more about tech-related issues related to technology development
Network Development	2,1 **Enhanced network development**	9	Number of organizations engaged and degree of engagement
	2,1 **Enhanced network development**	10	Number of stakeholders and end-users actively involved in network development initiatives
	2,1 **Enhanced network development**	11	Number of new partnerships formed
	2,1 **Enhanced network development**	12	Number of initiatives and projects launched
	2,2 **Enhanced cross-sectoral collaboration**	13	Number of cross-sectoral collaborations resulting in new cultural products or services

	2,2	**Enhanced cross-sectoral collaboration**	14	Number of cross-sectoral participants actively engaging in co-design activities on the platform
	2,2	**Enhanced cross-sectoral collaboration**	15	Number of stakeholders reporting enhanced collaboration and understanding with other stakeholders from diverse sectors
	2,2	**Enhanced cross-sectoral collaboration**	16	Number of co-design initiatives and projects initiated within the platform by cross-sectoral community members
Community and Social Relationships	3,1	Strengthened sense of belonging to a broader community	17	Percentage of end-users reporting improved sense of belonging to the local community
	3,1	**Strengthened sense of belonging to a broader community**	18	Percentage of community members reporting a stronger sense of identity and belonging to the gaming community
	3,1	**Strengthened sense of belonging to a broader community**	19	Number of end-users actively participating in community events
	3,2	**Increased participation in cultural activities**	20	Percentage increase in participation in cultural activities
	3,2	**Increased participation in cultural activities**	21	Number of new end-users visiting partner cultural institutions for the first time during or after the project

	3,2	**Increased participation in cultural activities**	**22**	Number of end-users expressing a desire to participate in future cultural activities

Economic development	**4,1**	**Increased job opportunities**	**23**	Number of stakeholders planning to recruit or expand their workforce due to project-inspired initiatives
	4,2	**Boosted organisations sustainability**	**24**	New funding/investments attracted by cultural institutions and fashion designers/textile companies for sustainable products
	4,3	**Innovation in cultural services and products**	**25**	Number of new services or products launched or innovated
	4,3	**Innovation in cultural services and products**	**26**	Number of good practices disseminated
Learning & capacity building	**5,1**	**Development of soft and life skills**	**27**	Number of people reporting increased soft and life skills through project activities
	5,2	**Improved educational performance/experience**	**38**	Number of people reporting improved educational performance through digital experiences
	5,3	**Enhancement of hard skills**	**29**	Number of fashion/textile professionals reporting enhanced technical skills in gamification and transmedia storytelling due to the project's activities

	5,3	**Enhancement of hard skills**	30	Number of cultural industry professionals reporting enhanced technical skills in service innovation and experience management through gamified experiences
	5,3	**Enhancement of hard skills**	31	Number of game co-designers reporting enhanced technical skills in game design and technology development through the co-design platform
	5,3	**Enhancement of hard skills**	32	Number of contents/technical knowledge consumed during the game design process
	5,3	**Enhancement of hard skills**	33	Number of end-users claiming improved work efficiency thanks to the development of hard skills
Social inclusiveness	6,1	**Elevated awareness on sustainability and inclusion**	34	Number of end-users reporting increased sensitivity to sustainability and social inclusion issues
	6,1	**Elevated awareness on sustainability and inclusion**	35	Number of stakeholders claiming to have reached a deeper understanding of social inclusivity and its value through gamification
	6,2	**Increased accessibility to cultural initiatives**	36	Number of end-users with vulnerable and/or disadvantaged conditions claiming greater inclusion and accessibility in cultural experiences delivered through video games and other project-promoted activities
Technological development	7,1	**Human-centred technology development**	37	Number of digitised cultural objects and assets

7,1	**Human-centred technology development**	**38**	Percentage of platform users reporting satisfaction with the accessibility features
7,1	**Human-centred technology development**	**39**	Number of collaborative projects initiated through the platform
7,1	**Human-centred technology development**	**40**	Percentage of users who understand and effectively use explainable AI components
7,1	**Human-centred technology development**	**41**	Number of users who participate in activity to deepen the knowledge of the themes of gaming, inclusive and ethical design
7,1	**Human-centred technology development**	**42**	User engagement levels in co-design activities on the platform
7,1	**Human-centred technology development**	**43**	Percentage of gamified experiences co-designed on the platform that include elements of diversity and inclusion
7,1	**Human-centred technology development**	**44**	Percentage of platform users who feel their contributions to co-design activities are valued
7,1	**Human-centred technology development**	**45**	Number of new features implemented on the platform based on user feedback

7,1	Human-centred technology development	46	Percentage of users who report increased knowledge of ethics, diversity, and inclusion after using the platform
7,2	Fostered legal awareness and ethical-design culture in video game industry	47	Number of ethical design guidelines and best practices disseminated to video game professionals
7,2	Fostered legal awareness and ethical-design culture in video game industry	48	Number of video game companies increasing or adopting ethical design practices

2.2 Data Framework

A central aspect of the update was the creation of the data framework. A data framework is a structured approach designed to organize, categorize, and link various data sources and tools used throughout a project. In the context of this project, the goal of the revision of the data framework was to create a more organized and efficient system for connecting each indicator to a specific data gathering tool. This connection allows for precise tracking and measurement of the defined outcomes and ensures that the collected data is directly relevant to the indicators being assessed. This means that every indicator now directly corresponds to one or more data collection tools, such as surveys, platform extractions, or more. By clearly linking indicators to specific tools, the framework ensures that the data collected is not only relevant but also easy to track and measure, providing clear, actionable insights. Below is a breakdown of the elements that make up the structure:

- Most valuable outcome: this refers to the key outcomes identified as most significant to the project's goals. it reflects the primary impacts or achievements the project aims to generate.

- Outcome area: the area of focus within which the outcome falls. This helps categorize outcomes based on specific themes such as social impact, economic impact, sustainability, or technological development.

- Outcome: a detailed explanation of what the outcome entails, describing the specific effect or result that is expected to occur. This description is aligned with the goals of the project and helps to clarify what will be measured.

- Stakeholder: individuals or organizations that will directly experience the outcomes of the project (including end-users with vulnerable and/or disadvantaged conditions). These stakeholders are the primary groups from whom data will be collected in order to assess the impact and effectiveness of the project's activities.

- KPI (key performance indicator): a measurable indicator that tracks the performance of the project in relation to the outcome. The kpi quantifies how well the outcome is achieved and provides a benchmark for success.

- Main data gathering tools: the primary tools or methods used to collect data for assessing the outcome. This could include surveys, interviews, field research, analytics platforms, or other data collection techniques.

- Secondary data gathering tools: additional tools or methods used to supplement the main data gathering tools. These tools may provide the same insights but in a subsequent time span, help triangulate data or fill in gaps where the primary tools may not be sufficient.

The final Data Framework has the following core structure and contents.

Table 4. Data Framework

#	Outcome	NEW N	KPI	Main data gathering tools	Secondary data gathering tools
1,1	**Expanded knowledge on arts and culture**	1	Percentage of end-users reporting increased knowledge on arts and culture after project activities	**Survey People T0-T1[1]**	**Survey People T2**
		2	Percentage of cultural institutions reporting improved knowledge exchange	**Survey Organisations**	
		3	Number of empowered professionals understanding culture- & fashion-related issues in game development	**Survey People T0-T1**	**Survey People T2**
		4	Number of stakeholders claiming improved sensitivity and awareness of cultural content	**Survey People T0-T1**	**Survey People T2**

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[1] T0: Before Enrolment-Subscription Survey.

T1: Right After- Immediate Impact Survey.

T2: After a While- Long-Term Impact Survey.

For a detailed description see section 4.2.2 Online surveys to participants

1,2	Expanded knowledge on technology development	5	Percentage of cultural institutions/museum administrators reporting new knowledge on creating cultural experiences and narratives	Survey Organisations	
		6	Number of empowered professionals understanding tech-related issues in game development	Survey People T0-T1	Survey People T2
		7	Number of cultural & textile/fashion organisations reporting enhanced knowledge on gaming and tech sectors	Survey Organisations	
		8	Number of empowered professionals understanding more about tech-related issues related to technology development	Survey People T0-T1	Survey People T2
2,1	Enhanced network development	9	Number of organizations engaged and degree of engagement	Network Matrix	Survey Organisations
		10	Number of stakeholders and end-users actively involved in network development initiatives	Survey People T2	
		11	Number of new partnerships formed	Network Matrix	Survey Organisations

		12	Number of initiatives and projects launched	Network Matrix	Survey Organisations
2,2	Enhanced cross-sectoral collaboration	13	Number of cross-sectoral collaborations resulting in new cultural products or services	Network Matrix	Survey Organisations
		14	Number of cross-sectoral participants actively engaging in co-design activities on the platform	Platform	Survey People T0-T1
		15	Number of stakeholders reporting enhanced collaboration and understanding with other stakeholders from diverse sectors	Survey People T0-T1	Survey People T2
		16	Number of co-design initiatives and projects initiated within the platform by cross-sectoral community members	Platform	
3,1	Strengthened sense of belonging to a broader community	17	Percentage of end-users reporting improved sense of belonging to the local community	Survey People T2	
		18	Percentage of community members reporting a stronger sense of identity and belonging to the gaming community	Survey People T2	

		19	Number of end-users actively participating in community events	Survey People T2	
3,2	Increased participation in cultural activities	20	Percentage increase in participation in cultural activities	Survey People T2	
		21	Number of new end-users visiting partner cultural institutions for the first time during or after the project	Survey People T0-T1	
		22	Number of end-users expressing a desire to participate in future cultural activities	Survey People T0-T1	Survey People T2
4,1	Increased job opportunities	23	Number of stakeholders planning to recruit or expand their workforce due to project-inspired initiatives	Survey Organisations	
4,2	Boosted organisations sustainability	24	New funding/investments attracted by cultural institutions and fashion designers/textile companies for sustainable products	Network Matrix	Survey Organisations
4,3	Innovation in cultural services and products	25	Number of new services or products launched or innovated	Survey Organisations	Network Matrix

		26	Number of good practices disseminated	Survey Organisations	Network Matrix
5,1	Development of soft and life skills	27	Number of people reporting increased soft and life skills through project activities	Survey People T0-T1	Survey People T2
5,2	Improved educational performance/experience	28	Number of people reporting improved educational performance through digital experiences	Survey People T0-T1	Survey People T2
5,3	Enhancement of hard skills	29	Number of fashion/textile professionals reporting enhanced technical skills in gamification and transmedia storytelling due to the project's activities	Survey People T0-T1	Survey People T2
		30	Number of cultural industry professionals reporting enhanced technical skills in service innovation and experience management through gamified experiences	Survey People T0-T1	Survey People T2
		31	Number of game co-designers reporting enhanced technical skills in game design and technology development through the co-design platform	Survey People T0-T1	Survey People T2

		32	Number of contents/technical knowledge consumed during the game design process	**Platform**	**Survey People T0-T1**
		33	Number of end-users claiming improved work efficiency thanks to the development of hard skills	**Survey People T2**	
6,1	**Elevated awareness on sustainability and inclusion**	34	Number of end-users reporting increased sensitivity to sustainability and social inclusion issues	**Survey People T0-T1**	**Survey People T2**
		35	Number of stakeholders claiming to have reached a deeper understanding of social inclusivity and its value through gamification	**Survey People T0-T1**	
6,2	**Increased accessibility to cultural initiatives**	36	Number of end-users with vulnerable and/or disadvantaged conditions claiming greater inclusion and accessibility in cultural experiences delivered through video games and other project-promoted activities	**Survey People T0-T1**	**Survey People T2**
7,1	**Human-centred technology development**	37	Number of digitised cultural objects and assets	**Platform**	

			38	Percentage of platform users reporting satisfaction with the accessibility features	**Survey People T0-T1**	
			39	Number of collaborative projects initiated through the platform	**Platform**	
			40	Percentage of users who understand and effectively use explainable AI components	**Survey People T0-T1**	
			41	Number of users who participate in activity to deepen the knowledge of the themes of gaming, inclusive and ethical design	**Survey People T2**	
			42	User engagement levels in co-design activities on the platform	**Survey People T0-T1**	
			43	Percentage of gamified experiences co-designed on the platform that include elements of diversity and inclusion	**Platform**	
			44	Percentage of platform users who feel their contributions to co-design activities are valued	**Survey People T0-T1**	**Survey People T2**
			45	Number of new features implemented on the platform based on user feedback	**Platform**	**Project database**

		46	Percentage of users who report increased knowledge of ethics, diversity, and inclusion after using the platform	**Survey People T0-T1**	**Survey People T2**
7,2	**Fostered legal awareness and ethical-design culture in video game industry**	47	Number of ethical design guidelines and best practices disseminated to video game professionals	**C&D Database**	
		48	Number of video game companies increasing or adopting ethical design practices	**Survey Organisations**	

The data framework plays a crucial role in ensuring that the more speculative aspects of the Impact Framework are connected to actual data-gathering tools, making the assessment both real and feasible. While the Impact Framework initially outlines key outcomes and anticipated impacts based on the project's goals, it is often abstract and conceptual. The data framework bridges this gap by linking these outcomes to concrete methods of data collection, such as surveys, interviews, and field research, which are specifically designed to gather relevant, measurable data. This connection not only grounds the assessment in real, empirical evidence but also ensures that it is aligned with the project's ongoing activities. By using main data gathering tools, supplemented with secondary and third/parallel data gathering tools, the data framework ensures a comprehensive and robust approach to impact assessment. These tools provide multiple sources of data that help validate and triangulate findings, ensuring that the evaluation is not only based on prior analyses but also reflects current realities and trends. A breakdown version of the data framework will be shown in paragraph 4.2 Data gathering tools, where each tool will be connected to the specific KPIs' harvesting.

2.3 Updated SROI

2.3.1 Update financial proxy

A financial proxy is an alternative tool used to estimate the value of items and projects that do not have a direct market price, and it is a necessary metric used in social return on investment (SROI). Basically, each outcome (or one of its indicators) is linked to a financial item (proxy) that represents a (possible) monetary value of the outcome itself. As a matter of fact, not all outcomes can be assigned to a proxy as some of them are impossible to monetize, therefore the impact that they generate can be described only in qualitative, process-related and narrative way. Each proxy is then filtered by 4 mitigators that are part of the SROI methodology (deadweight, attribution, displacement and drop-off, cfr section above); in i-Game! impact framework, the cashable outcomes are x, and they cover x outcome areas.

In the Empower! project, financial proxies were selected according to available data and type of activities. Specifically, methodologies as following were selected:

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- <u>Market price equivalents and replacement cost methods:</u> financial proxies were derived from existing market rates for similar goods and services. For example, the cost of a professional certification, digital education courses, or skills training was determined based on real market prices from service providers. This method ensures that the proxy values reflect the actual financial burden or investment required for such services in the absence of a project and helps assess the financial value of services provided without direct payment from beneficiaries.
- <u>Benchmarking and internal estimation:</u> financial proxies were also identified through comparisons with similar projects and expert assessments. Internal data from past initiatives, as well as industry benchmarks, were leveraged to estimate reasonable proxy values for various interventions. This method was particularly useful for assessing costs related to prototyping, granting achievement and new project, service project launched.
- <u>Publicly available statistical data:</u> government reports, national statistics, and publicly available datasets were used to derive proxies where direct market prices were unavailable. For example, official data on average salaries, taxation levels, or social security contributions helped establish realistic financial proxies for employment-related benefits.

Table 5. Financial proxies

Outcome area	Outcome	#KPI	KPI	Proxy	Proxy Source	Proxy Value
Knowledge Exchange	**Expanded knowledge on arts and culture**	3	Number of empowered professionals understanding culture- & fashion-related issues in game development	Course on Digital Humanities	Introduction to Digital Humanities https://pll.harvard.edu/course/introduction-digital-humanities	**€202,00**
Knowledge Exchange	**Expanded knowledge on technology development**	6	Number of empowered professionals understanding tech-related issues in game development	Course on Digital Humanities	Introduction to Digital Humanities https://pll.harvard.edu/course/introduction-digital-humanities	**€202,00**
Knowledge Exchange	**Expanded knowledge on technology development**	7	Number of cultural & textile/fashion organisations reporting enhanced knowledge on gaming and tech sectors	Course on Digital Humanities	Introduction to Digital Humanities https://pll.harvard.edu/course/introduction-digital-humanities	**€202,00**

Network Development	Enhanced network development	11	Number of new partnerships formed	Average value of new partnership deals	Impulse paper on the cultural and creative sectors innovating European industry; Creative Business Network 2022 https://keanet.eu/publications/impulse-paper-on-the-cultural-and-creative-sectors-innovating-european-industry/?utm_.com	€5.000,00
Network Development	Enhanced network development	12	Number of initiatives and projects launched from new partnerships	Average costs of urban regeneration interventions and territorial animation projects	Italian Ministry of Interior https://dait.interno.gov.it/finanza-locale/faq/faq-contributo-per-investimenti-di-rigenerazione-urbana	€10.000,00
Network Development	Enhanced cross-sectoral collaboration	13	Number of cross-sectoral collaborations resulting in new cultural products or services (MVP and Prototype)	Collaborative development of a working prototype, such as an app, educational video game, digital installation, or immersive demo, with co-creation between cultural and technical entities.	Market benchmarking from digital suppliers (e.g., CulturalXR, G-Player), national and regional public programs (Lazio Innova 2022, Regione Toscana Cultura Digitale), and Confartigianato Digitale rates.	€4.200,00
Community and Social Relationships	Strengthened sense of belonging to a broader	19	Number of end-users actively participating in community events	Value of event participation fees	Participation to networking events - Open Impact Database	€117,00

	community					
Community and Social Relationships	Increased participation in cultural activities	20	Percentage increase in participation in cultural activities	Increased revenue from ticket sales	Medium price of a ticket for European a European Museum	€17,00
Economic development	Increased job opportunities	23	Number of stakeholders planning to recruit or expand their workforce due to project-inspired initiatives	Medium Gross Annual Salary (transectoral analysis among textile/culture/game development sector)	Indicative value derived from labour market analyses and salary surveys for entry-level professionals in the European gaming sector, including: Randstad Italia (2023): Game Developer salary range €22,000–30,000 gross/year https://www.randstad.it/candidato/lavori-piu-richiesti/game-developer Code Institute (2024): Average UK entry-level game developer salary ≈ £23,000/year (~€26,500) https://codeinstitute.net/global/blog/game-developer-salaries	€22.000,00
Economic development	Boosted organisations sustainability	24	New funding/investments attracted by cultural institutions and fashion	Expected mean value od amount of funds intercepted by partners for projects/activity	Internal Network Analysis Matrix	€60.000,00

			designers/textile companies for sustainable products	related to i-Game		
Economic development	Innovation in cultural services and products	25	Number of new services or project launched and innovated	Tutoring cost for an incubation process - Invitalia, Smart&Start programme, sustain to innovative start-ups	Smart&Start https://www.mimit.gov.it/it/incentivi/sostegno-alle-startup-innovative-smart-start-italia#:~:text=Il%20valore%20dei%20predetti%20servizi,localizzate%20nel%20restante%20territorio%20nazionale	€7.500,00
Learning & capacity building	Development of soft and life skills	27	Number of people reporting increased soft and life skills through project activities	Soft skills course - Forma Camere, Camera di Commercio di Roma	https://formacamera.it/corso/ss0116/	€150,00
Learning & capacity building	Enhancement of hard skills	29	Number of fashion/textile professionals reporting enhanced technical skills in gamification and transmedia storytelling due to the project's activities	Cost of game design course	Corso per Game Designer Certificato Unity Engine con Inserimento Lavorativo vicino a Reggio Emilia | Corsidia	€2.500,00
Learning & capacity building	Enhancement of hard skills	30	Number of cultural industry professionals reporting enhanced technical skills in service innovation and experience management through gamified experiences	Cost of innovation management course	Corso Innovation Management | Sole 24 ORE Formazione	€1.200,00

Learning & capacity building	Enhancement of hard skills	31	Number of game co-designers reporting enhanced technical skills in game design and technology development through the co-design platform	Cost of game design course	Corso per Game Designer Certificato Unity Engine con Inserimento Lavorativo vicino a Reggio Emilia | Corsidia	€2.500,00
Technological development	Human-centred technology development	37	Number of digitised cultural objects and assets	Cost savings from digital preservation	Based on typical costs for digital scanning and archival per item, referencing the cost structures of similar digital archive initiatives in EU cultural institutions such as the European Digital Library.	€500,00
Technological development	Human-centred technology development	39	Number of collaborative projects initiated through the platform	Cost of digitalization voucher	https://www.mise.gov.it/index.php/it/incentivi/voucher-per-la-digitalizzazione-delle-pmi	€10.000,00
Technological development	Human-centred technology development	41	Number of users participating in workshops to deepen the knowledge of the themes of gaming, inclusive and ethical design	Course on Digital Humanities	Introduction to Digital Humanities https://pll.harvard.edu/course/introduction-digital-humanities	€202,00
Technological development	Human-centred technology development	45	Number of new features implemented on the platform based on user feedback	Development cost savings per feature (Game developer cost per hour per number of hours worked)	https://www.euvic.com/us/post/offshore-countries-hourly-rates/	€2.000,00
Technological development	Fostered legal awareness and	47	Number of ethical design guidelines and best practices disseminated to	Cost of producing and distributing ethical design materials per unit	Industry toolkit pricing (The Ambulance Compliance	€50,00

	ethical-design culture in video game industry		video game professionals		Program Tool Kit - PWW Media Inc.)	
Technological development	Fostered legal awareness and ethical-design culture in video game industry	48	Number of video game companies increasing or adopting ethical design practices	Cost of incorporating accessibility features such as customizable control schemes, subtitles, or audio cues that make the game playable by people with disabilities.	Cross analysis on Game Accessibility Guidelines, peer-reviewed articles, and industry reports from various platforms Game Developer and AbleGamers, assessing accessibility features in video games.	€1.000,00

The table provides a comprehensive overview of the key outcomes, Key Performance Indicators (KPIs), and their associated proxies, along with the sources and monetary values, for the i-Game project's impact assessment. The primary aim is to track the project's impact across various key outcome areas, such as knowledge exchange, network development, community and social relationships, economic development, learning and capacity building, and technological development. In the area of knowledge exchange, the project's success in expanding knowledge across arts, culture, and technology is reflected by several KPIs. For example, the number of professionals empowered with an understanding of culture- and fashion-related issues in game development is measured by the cost of the "Introduction to Digital Humanities" course, with a proxy value of €202. Similarly, the number of professionals understanding technology development issues, along with cultural and textile/fashion organizations reporting enhanced knowledge on the gaming and tech sectors, is tracked using the same proxy, €202 for the Digital Humanities course.

Regarding network development, the project tracks the formation of new partnerships and initiatives. The number of new partnerships formed is evaluated using the average value of new partnership deals, which is based on the Impulse paper on the cultural and creative sectors innovating European industry and valued at €5,000. Furthermore, the number of initiatives and projects launched from these partnerships is assessed using the average costs of urban regeneration interventions and territorial animation projects, with a proxy value of €10,000, derived from the Italian Ministry of Interior. New cross-sector collaborations resulting in cultural products or services, such as prototypes or MVPs, are also tracked using the collaborative development of a working prototype as a proxy, with an estimated value of €4,200.

For community and social relationships, the project assesses community engagement through metrics such as the number of end-users actively participating in community events and the increase in participation in cultural activities. The value of event participation fees, valued at €117 based on participation in networking events (from the Open Impact Database), serves as the proxy for event participation. Additionally, the increase in participation in cultural

activities is measured by medium ticket prices for European museums, with a proxy value of €17.

In the domain of economic development, the project tracks the impact on job creation and funding for sustainable initiatives. For instance, the number of stakeholders planning to recruit or expand their workforce due to project-inspired initiatives is assessed using the medium gross annual salary in the gaming sector, valued at €22,000, based on labour market analyses from Randstad Italia (2023) and the Code Institute (2024). The project also tracks the new funding or investments attracted by cultural institutions and fashion designers for sustainable projects, with a proxy value of €60,000, based on the Internal Network Analysis Matrix. Moreover, the number of new services or projects launched and innovated is evaluated using the tutoring cost for incubation processes in the Smart&Start program, with a proxy of €7,500.

For learning and capacity building, the project focuses on the development of both soft and hard skills. The number of people reporting increased soft and life skills through project activities is measured using the cost of a soft skills course from Forma Camere in Rome, valued at €150. The project also tracks the enhancement of hard skills for professionals in various sectors. For example, the number of fashion and textile professionals reporting enhanced technical skills in gamification and transmedia storytelling is assessed using the cost of a game design course in Unity Engine, with a proxy of €2,500. Additionally, the number of cultural industry professionals reporting enhanced technical skills in service innovation and experience management due to gamified experiences is measured using the cost of an innovation management course, valued at €1,200. Furthermore, the number of game co-designers reporting enhanced technical skills in game design and technology development through the co-design platform is measured by the same game design course cost, also valued at €2,500.

In technological development, the project tracks progress in human-centred technology, focusing on digitization, collaborative projects, and the implementation of new features. The number of digitized cultural objects and assets is measured by cost savings from digital preservation, with a proxy value of €500, based on the typical costs of digital scanning and archival processes in EU cultural institutions. The number of collaborative projects initiated through the platform is tracked using the cost of digitalization vouchers, with a proxy of €10,000 as provided by the Italian Ministry for Economic Development (Mise). Additionally, the number of users participating in workshops focused on gaming, inclusive, and ethical design is evaluated using the cost of a Digital Humanities course, valued at €202. Finally, the number of new features implemented on the platform based on user feedback is assessed using the development cost savings per feature, with an estimated value of €2,000.

Lastly, the project aims to foster legal awareness and an ethical-design culture within the gaming industry. This is measured by the number of ethical design guidelines disseminated to video game professionals, with a proxy value of €50 for producing and distributing ethical design materials. The number of video game companies adopting ethical design practices is evaluated by the cost of incorporating accessibility features in games, such as customizable control schemes or subtitles, with a proxy value of €1,000 based on an analysis of Game Accessibility Guidelines, peer-reviewed articles, and industry reports.

2.3.2 Second SROI forecast and future updates

It is fundamental to underline that calculating a provisional SROI (Social Return on Investment) for the i-Game project has proven to be scientifically challenging. This is primarily due to three elements: complexity of the project, the broadness of its spectrum, and its experimental nature.

The project spans multiple sectors, including gaming, culture, and technology, each with its own unique characteristics and challenges. This creates a complex ecosystem of stakeholders, making it difficult to measure and predict the impact across different groups. The multiple outcome areas and targets require diverse methods for data collection and impact measurement, complicating the process of estimating a unified SROI. The project's interdisciplinary nature means that impacts may not be immediately quantifiable or directly comparable, especially when trying to measure intangible benefits like cultural enrichment or knowledge exchange.

The i-Game's broad scope and intersectoral nature, which involves a wide range of stakeholders (various population targets, cultural institutions, game studios, SMEs, policymakers, and others), creates a challenge in tracking and quantifying outcomes for each sector. Different sectors may define success and value in diverse ways, and the varying expectations from each group make it difficult to apply a standard metric across all areas. The outcomes might include a combination of short-term effects (e.g., increased knowledge) and long-term changes (e.g., social cohesion, cultural transformation), which complicates the calculation of a comprehensive SROI.

Finally, since the i-Game project is experimental, many of its activities and outcomes may not have been tested or modelled before, making it harder to apply existing frameworks for impact measurements. The uncertainty around the scalability and replicability of the project's outcomes further complicates the estimation of their long-term value. For example, while the project might successfully implement new technologies or educational programs in pilot phases, it's very difficult to establish with precision how these will scale or translate into broader societal impact.

Nonetheless, apart from defining financial proxy, the analysis has moved forward to calculation and quantification of the mitigation coefficients (namely deadweight, attribution, displacement, and drop-off) have been set conservatively between 5% and 15%. This approach follows established methodological guidance (Nicholls et al., 2012; Social Value International, 2021) and considers the unique characteristics of both the intervention and its broader ecosystem. The reasoning behind these decisions is based on three key considerations.

First, the high additionality of the intervention is a significant factor. The project operates within a highly specialized domain of social and cultural innovation, where there are few, if any, comparable pre-existing initiatives. As a result, the deadweight—the extent to which the observed outcomes would have occurred without the intervention—is relatively low, typically between 5% and 10%. In this context, the likelihood of these outcomes happening without the intervention is minimal, which supports the use of lower deadweight and displacement rates. Second, the project's focus on structured stakeholder involvement and direct uptake contributes to a stronger causal link between the intervention and its outcomes. The activities were co-designed and delivered through intensive engagement with stakeholders, which included co-creation workshops, iterative validation of outputs (such as prototypes and partnerships), and early adoption by beneficiaries, including institutions, SMEs, and users. This structured approach helps to justify a lower attribution discount, which typically falls between 10% and 15%, as the intervention's contribution to the outcomes is more direct and attributable. Third, the proxy timeframes of 5 years used in the SROI model align well with typical medium term long project cycles, such as those seen in Horizon Europe or Creative Europe. By focusing on relatively short timeframes, the uncertainty associated with long-term projections, leading to moderate drop-off rates, which generally do not exceed 10% annually.

Finally, according to the above data and considerations, the forecasted SROI (Social Return on Investment) has been updated. To delve deeper into the analysis, it is important to recall the SROI calculation formula, which consists of a ratio where the numerator represents the total forecasted Net Present Value (forecasted at €5.954.629,76), and the denominator corresponds to the investment made by to fund the activities (€3,999,122.50). The final result obtained for this forecasted SROI is 1,49 meaning that for every euro forecasted to be invested in the project, there is a social return of €1,49.

NPV / Investment = SROI → €5.954.629,76 € / €3,999,122.50 = 1,49

The forecasted **SROI** for the **i-Game** project is now lower than previously calculated. This adjustment can be attributed to the following key factors. The co-design phase of the project is nearing completion, and as we approach the implementation of activities, the expected outcomes are becoming clearer. Some previously identified outcomes were found to be overly ambitious or not fully aligned with the project's objectives, leading to their removal from the impact framework. However, the project continues to show a level of complexity that does not seem to diminish substantially. In adherence to best practices in social impact evaluation, it is crucial to avoid overestimating social benefits. Therefore, the current SROI reflects a more cautious approach, ensuring the SROI principle of avoiding overestimating social benefits and using conservative estimates (Social Value UK, 2016). As the project progresses, gathering and defining a more precise value will become more feasible. Consequently, while the forecasted SROI (especially its absolute value of 1,49) is as accurate as possible with the available data, it remains subject to change by the end of the project once all relevant information is collected and verified.

3 CONTEXT AND ACTIVITY ANALYSIS

3.1 Synthetic description of monitored activities

The project's Impact Assessment and data gathering will be intricately connected to several key activities, particularly those under WP3, WP4, WP5, and transversal activities like communication and dissemination. These activities will involve multiple stakeholders, generate multidimensional impact whose assessment will rely on various data collection tools and feedback mechanisms to evaluate progress and outcomes. The purpose of this chapter is to identify which activities within the work packages (WPs) are the most impactful, as well as to highlight the significance of transversal activities such as Communication and Dissemination, and Network and Ecosystem Development. Given the high complexity of the i-Game project, it was essential to define these key activities to maintain focus and ensure that monitoring and assessment efforts remain manageable and with a core set of analysis. However, should other specific or transversal activities emerge as important for assessment throughout the project, they will be given due consideration and included in the evaluation process. This approach ensures that the assessment maintains focus while remaining flexible and responsive to new insights as the project evolves. The following is a detailed list of the work packages (WPs), tasks, and transversal activities that will receive particular focus during the monitoring and assessment process.

- WP3 - Co-creating Games by Engaging People from Different Backgrounds: in Task 3.3 - Co-creation Workshops and Concept Prototypes Definition, workshops will be organized with a diverse range of participants, including stakeholders from different socio-economic backgrounds, perspectives, and needs. These workshops will serve as both a space for co-creation and as a source of valuable qualitative data. The Impact Assessment will track the effectiveness of these workshops by assessing the engagement levels of participants, the diversity of their contributions, and the co-created prototypes' alignment with community needs. The workshops' outcomes will be measured through surveys and focus group discussions, which will help evaluate the impact of the co-creation process on knowledge exchange, community involvement, and inclusivity.

- WP4 - Co-creation Platform and Integration with Existing Solutions: the co-creation platform will be a central tool for data collection and impact assessment throughout the project. As various stakeholders engage with the platform, data related to user engagement and knowledge transfer will be collected and analysed. The impact of the platform in facilitating collaboration between diverse sectors (e.g., fashion, textiles, gaming, cultural industries) will be assessed by tracking platform usage metrics, participation in co-design activities, and feedback from users on the platform's role in enhancing their knowledge and skills.

- WP5 - Pilot Cases: pilot cases, such as those in Central Macedonia (Task 5.2), Prato (Task 5.3), and the Estonian National Museum (Task 5.4), are essential for assessing the impact of i-Game's tools in real-world settings. These pilots focus on local ecosystems and involve stakeholders from diverse sectors, including fashion, textiles, and culture. They are designed to track the effectiveness of gamification in engaging stakeholders in sustainability and circular economy topics, such as the life cycle of textiles, sustainable consumption, and the role of design. The Impact Assessment will measure how well these pilots engage local communities, raise awareness about sustainability, and foster collaborations across sectors. This will be accomplished

through surveys, user feedback, and platform data, focusing on key areas such as social inclusivity, knowledge exchange, and network development. A core aspect of the project is its emphasis on inclusiveness, ensuring that people form vulnerable groups, diverse needs and abilities and people from various sectors (such as museums, graphic designers, game players, and creators) can participate on equal terms. By doing so, i-Game aims to make a more profound impact, allowing a broad range of individuals to contribute and benefit from the project's initiatives strengthening social inclusion and cross sectoral collaboration.

- Task 6.2 - Communication and Dissemination Activities plays an essential role in ensuring that the impact of the project is communicated to a wider audience and its outcomes are disseminated effectively. The Impact Assessment will analyse certain dimensions of the Dissemination and Communication Database (see 4.2.5 Dissemination & Communication Database) throughout the project, with the aim of understanding how the impact of these activities goes beyond the simple dimension of communication and dissemination

- Network and Ecosystem Development: a key line of activity in the i-Game project is focused on network and ecosystem development. This activity aims to build and strengthen collaborations across various sectors, creating a robust ecosystem that fosters continuous interaction and knowledge exchange between different stakeholders. The project will engage a wide range of participants, including professionals from the game industry, cultural institutions, fashion/textile sectors, and social economy organizations, among others. The network development process will be facilitated through several activities, including:

1. Co-creation workshops and game design sessions, where stakeholders from diverse backgrounds come together to collaborate on common challenges, particularly those related to sustainability, circular economy, and cultural heritage. These workshops will serve as platforms for building relationships and establishing ongoing collaborations within the ecosystem.

2. Engagement with local ecosystems, especially in pilot regions such as Central Macedonia, Prato, and Estonia, will allow the i-Game platform to activate and engage regional networks, involving local businesses, designers, cultural professionals, and public authorities. These regional initiatives will create opportunities for knowledge exchange and collaboration, contributing to long-term network growth.

3. Participation in thematic workshops and conferences, both locally and at the EU level, will enable stakeholders to exchange ideas, best practices, and experiences, further enhancing collaboration across industries and sectors. These events will also promote the integration of gamification and game design as tools for fostering innovation and community engagement.

In summary, the Impact Assessment will not only measure the reach of dissemination activities but will also evaluate how these activities contribute to creating significant academic and social impact, as well as fostering tangible changes in policies and practices within the sector.

3.2 Stakeholder Map

The map, initially developed during the creation of the Research Framework in T2.1 and finalized in D2.1 Research Report v.1, plays a central role in the project by visually representing

the diverse stakeholders involved in various aspects of the initiative. It serves not only as a reference for the consortium but also as a strategic guide to ensure that all relevant parties are appropriately engaged throughout the project's lifecycle.

Building upon this framework, the consortium has identified specific stakeholder clusters and stakeholder types, each with distinct interests, challenges, and contributions. These are further illustrated in Figure 1. This systematic approach enables the team to better understand how each stakeholder can influence or benefit from the project, as well as to tailor interventions and engagement strategies to maximize the effectiveness and relevance of the project's outcomes.
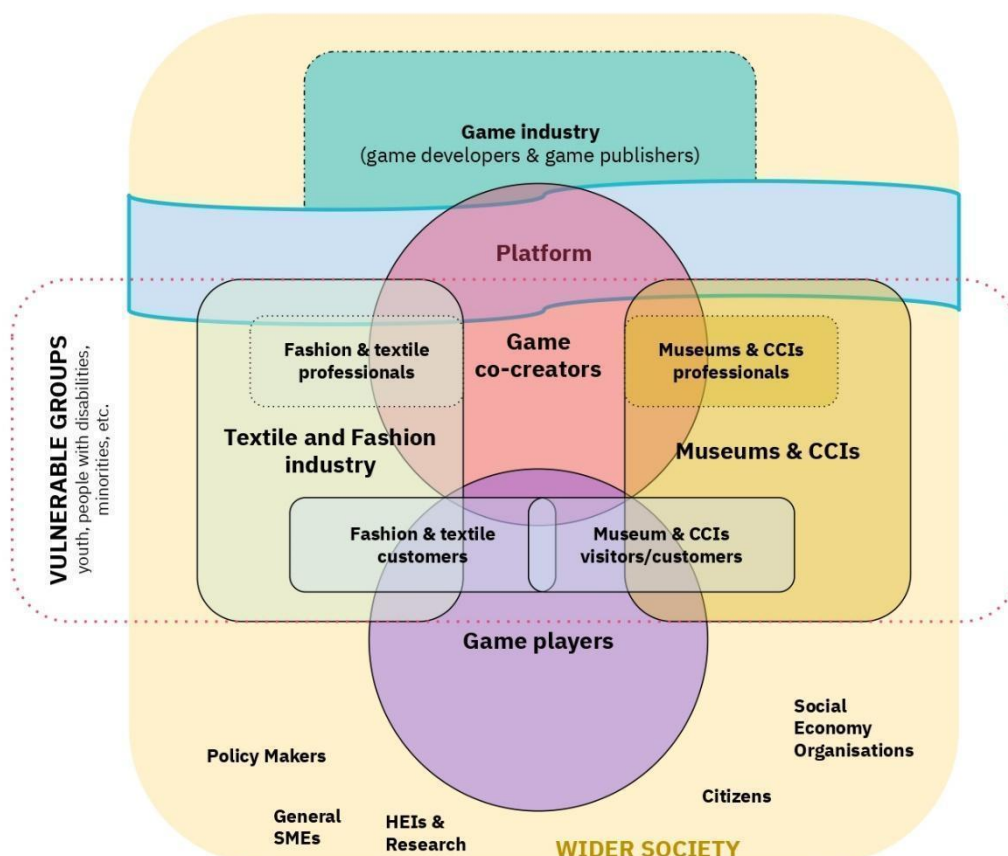

Figure 1. Stakeholder map

Table 6. Stakeholders

Clusters	Name	Short	TG#
Museums & CCIs	Museums/CCIs institutions/professionals	🖼 MCCIs	TG1
	Museums/CCIs visitors/customers	🎟 MCCIs Users	TG2
Textile & Fashion	Textile and Fashion industry/professionals	🧵 T&F	TG3

	Textile and Fashion customers	🧵 T&F Users	TG4
End-users	Game players	🎮 Game Players	TG5
	Game co-creators	📐 Game Co-Creators	TG6
Game industry	Game industry	👾 Game Ind.	TG7
Wider society	Citizens	👥 Citizens	TG8
	Policy Makers	EU PMs	TG9
	SMEs	🏭 SMEs	TG10
	Higher Education and Research Institutions	🎓 HEIs	TG11
	Social Economy Organisations	🪢 SEOs	TG12

The Impact Assessment will focus on collecting data from a wide variety of stakeholders, each representing different sectors and target groups within the project's ecosystem. These stakeholders, categorized into specific target groups (TGs), are essential for understanding the broad impact of the project across multiple domains. Different data gathering tools will be employed to target these various stakeholder groups, ensuring that each group's unique perspectives, needs, and contributions are accurately captured (see chapter 4 Data Gathering Tools and Strategy). The first category, Museums and Cultural and Creative Industries (CCIs), includes museums and CCI institutions/professionals (TG1), as well as their visitors and customers (TG2). This group is crucial for assessing how the project impacts cultural institutions and their audiences, particularly in terms of engagement and participation. Next, the Textile and Fashion sector is represented by industry professionals (TG3) and customers (TG4). These groups provide valuable insights into the sector's readiness to adopt innovative tools, such as gamification, and how the project influences both professionals and consumers in the textile and fashion industry. The End-users group, which includes game players (TG5) and game co-creators (TG6), is vital for understanding how individuals interacting with the platform are impacted. This group provides direct feedback on user experiences, preferences, and engagement with the project's digital tools. Additionally, the Game Industry (TG7) is a key stakeholder, as it helps assess the sector's interaction with the project, its adoption of new technologies, and how it integrates these innovations into its business models. The Wider Society group, particularly citizens (TG8), is another important stakeholder, as it reflects the broader societal impact of the project. Understanding citizens' perspectives and their engagement with the project can highlight the societal value generated by the activities. Policy makers (TG9) are also a central group, as their involvement will offer insights into how the project influences public policies and contributes to the formulation of new policies related to the sectors involved. Small and Medium-sized Enterprises (SMEs) (TG10), Higher Education and Research Institutions (TG11), and Social Economy Organisations (TG12) are also key groups whose involvement and feedback will provide important data on how the project influences innovation, education, and social impact within these sectors.

A transversal focus will be maintained across all targets related to individuals, with particular emphasis on the engagement and active participation of people from a wide range of vulnerable groups, including individuals with physical disabilities (such as blindness or low vision, hearing, speech, and motor disabilities), older adults, individuals with learning disabilities, as well as those facing socio-economic vulnerability and/or migrant backgrounds.

By gathering data from various stakeholder groups, the Impact Assessment will provide a comprehensive evaluation of the project's outcomes. It will help determine how well the project addresses the needs of different sectors and aligns with their goals, while ensuring meaningful impact. The project focuses on creating an accessible, open-source game development platform that enables individuals, particularly those from vulnerable groups and cross sectoral cooperation, engages people for various fields like museums and industry, to create and use games. These games are designed not only to be inclusive but also to actively foster inclusion, particularly within the cultural sector; moreover, his approach guarantees that the project's impact is both broad and deep, benefiting a wide range of participants and encouraging greater engagement across all involved sectors.

4 DATA GATHERING STRATEGY AND TOOLS

4.1 Co-design process

The co-design path for the definition of the data gathering strategy and tools in task T2.4 *Impact Monitoring and Assessment* followed a structured co-design approach to ensure that the development of the necessary methodologies were in line with project's content, partners' view and actual capability of data gathering. As in task *T2.3 Impact framework co-development* the process engaged all organisations along a path that was divided into clear phases and was aligned with the project's overall objectives.

The validation of the data gathering strategy is a crucial process that not only ensures the alignment of data collection methods with the project's impact assessment goals but also creates a realistic and feasible plan for data gathering that is consistent with the project's operational capacity. This validation aims to ensure that the strategy is achievable and effectively integrated into the overall framework of the project, guaranteeing smooth and efficient implementation. Data collection is a fundamental component of any evaluation process, and having a systematic, well-structured approach is key to ensuring that the gathered data is reliable and relevant. The process consists of three main steps: first, creating a data collection plan; second, identifying the appropriate data sources; and third, gathering the data itself. A data gathering strategy acts as a comprehensive guide, outlining the specific steps to be followed and their appropriate sequence. This strategy ensures alignment among all project participants, ensuring that everyone understands the data plan and that the necessary information is effectively communicated to those responsible for data collection. It is critical to clearly define the specifics of when, how, and by whom the data should be collected. To facilitate this, the strategy includes a master plan, represented through a GANTT chart, which visually maps out the methods of verification to be used, the individuals responsible for issuing the data, and the time frame for data collection.

Parallel to the validation of the data gathering strategy, the consortium has also worked on **defining the actual tools required for data collection**. These tools are essential for capturing data from the various stakeholders involved in the i-Game project and ensuring that the data is gathered efficiently and accurately. The tools developed and refined include the following:

1. i-Game Platform: this is the primary platform used for collecting and analysing data from users interacting with the project.

2. Online Survey for People: a survey designed to gather information from individuals across all identified target groups.

3. Online Survey for Organizations: a survey aimed at collecting data from the organizations involved in the project, such as museums, game industries, SMEs, etc.

4. Network Analysis Matrix: a tool used to map and analyse the relationships and interactions between various stakeholders, allowing for the identification of key connections within the project ecosystem.

5. Dissemination & Communication Database: a dataset that captures the data related to the communication and dissemination activities.

6. Project's Deliverables and Datasets (as listed in D1.2): these are the existing datasets from the project, which will be integrated into the data gathering process to ensure consistency and comprehensiveness.

7. <u>Qualitative Data Collection Tools</u>: these tools include participant observation and related journals, semi-structured interviews, focus group discussions that provide qualitative insights into the experiences and perspectives of participants.

To support the development and validation of the data gathering strategy, Open Impact led **five distinct types of co-design sessions**, each tailored to address specific aspects of the project's impact assessment. These sessions played a crucial role in aligning the various project partners and ensuring that the strategy was both practical and in line with the project's operational needs. They were specifically designed to enhance the efficiency of information exchange across the project consortium. In the early stages, the design of the data collection strategy was particularly complex, as it required multi-level, diverse information from various partners and groups. Given the different areas of expertise and responsibilities of the partners, it was essential to facilitate seamless communication and collaboration to gather the necessary input. The co-design sessions allowed for a structured approach to address these complexities, ensuring that the data collection strategy was developed with input from all relevant stakeholders. By involving different groups in focused sessions—such as the Technical Group, Pilot Group, and General Group—partners were able to share insights and offer specific perspectives, thus ensuring that the final strategy was well-rounded and feasible. This collaborative process helped streamline the flow of information, making it easier to manage the diverse data collection requirements and align them with the project's broader impact assessment goals.

1. <u>Technical Group Session</u>: this group, composed of CERTH, Unis, Cookie Box, and Nurogames, focused on defining the technical aspects of the data gathering process. Their primary responsibility was to determine the methods and tools for extracting data from the i-Game platform.

2. <u>Pilot Group Session</u>: involving Museo Space, KEPA, Eesti Rahva Museum, and Museo del Tessuto di Prato, this group concentrated on the specific data collection needs related to the pilot activities and museum-based engagements.

3. <u>Inclusion and Ethics Group Session</u>: comprising KU Leuven and Raising the Floor, this group acted as reviewers and provided general consultancy throughout the process. They offered valuable insights and recommendations, ensuring that the co-design process remained on track and aligned with the broader goals of the project, especially those related to Social Inclusiveness and guarantee of ethical standards.

4. <u>Bilateral Session</u>: these one-on-one sessions were designed to address specific concerns or requirements of individual partners. The bilateral format allowed for focused discussions on particular challenges or questions related to data gathering, ensuring that every partner's unique needs were considered and addressed.

5. <u>Common Session with the Entire Consortium</u>: to foster a collective understanding and consensus, a session with the entire consortium was organized. This collaborative session brought together all project partners to review and discuss the co-designed strategy, ensuring that all perspectives were incorporated into the final plan and that the design of the da gathering strategy remained realistic.

The outcomes of this process are outlined in the following sections. All the tools mentioned above will be described in detail in section *4.2 (Data Gathering Tools)*, while the process of data gathering and analysis are outlined in sections *5.1 (Data Gathering and Analysis)* and *5.2 (Impact-Project Management Integration)* .From April (M15) until the project's conclusion, the data gathering tools will be actively implemented and they will serve multiple purposes:

monitoring the project's progress, assessing its impact, and providing quality insights that will guide necessary adjustments to project activities. This continuous monitoring will ensure the effectiveness of the impact assessment and offer real-time feedback, enabling the optimization of project outcomes as the project evolves.

4.2 Data gathering tools

This chapter outlines the various data gathering tools utilized throughout the project to collect, analyse, and evaluate key information related to the I-Game ecosystem. Each tool is designed to target specific audiences, gather data at different stages of the project, and align with the overall data framework, including outcomes and key performance indicators (KPIs). The tools described in this section are integral to capturing both quantitative and qualitative data, which are essential for assessing project progress, impact, and success.

As mentioned earlier the following data gathering tools will be described.

1. Platform

2. Online Surveys to Participants

3. Online Surveys to Organizations

4. Network Analysis Matrix (NAM)

5. Dissemination & Communication Database

6. Internal Project Datasets and Deliverables

7. Qualitative Data Collection Tools

Each tool will be discussed in terms of its audience, timeline for implementation, data format, its connection to the data framework (specifying which indicator is targeted) and also in its qualitative dimensions, to describe the content and the role played in the overall data gathering strategy.

4.2.1 Platform

TARGET:

- Museums/CCIs institutions/professionals 🖼️ (TG1)

- Textile and Fashion industry/professionals 👕 (TG3)

- Game players 🎮 (TG5)

- Game co-creators 📐 (TG6)

- Citizens 👥 (TG8)

TIMELINE: the first extraction will occur in May 2025 (M16), followed by a second extraction in October 2025 (M21). A third extraction is scheduled for April 2026 (M27), with a final extraction in October 2026 (M33). These extractions will allow for the ongoing tracking of the platform's usage and effectiveness.

FORMAT: various data format extracted from i-Game platform

Table 7. KPIs extracted from the Platform

#O	Outcome	#KPI	KPI	Main data gathering tools	Secondary data gathering tools
2,2	Enhanced cross-sectoral collaboration	14	Number of cross-sectoral participants actively engaging in co-design activities on the platform	Platform	Survey People T0-T1
		16	Number of co-design initiatives and projects initiated within the platform by cross-sectoral community members	Platform	N/A
5,3	Enhancement of hard skills	32	Number of contents/technical knowledge consumed during the game design process	Platform	Survey People T0-T1
7,1	Human-centred technology development	37	Number of digitised cultural objects and assets	Platform	N/A
		39	Number of collaborative projects initiated through the platform	Platform	N/A
		43	Percentage of gamified experiences co-designed on the platform that include elements of diversity and inclusion	Platform	N/A
		45	Number of new features implemented on the platform based on user feedback	Platform	Project database

The i-Game platform plays an important role as a tool for gathering data related to various key performance indicators (KPIs). Data for the impact assessment will be extracted from

technical partners involved in the project who are responsible for the management of the platform will collect and extract data relevant to the project's various key performance indicators (KPIs). Open Impact, as the lead on impact assessment, will then take this data and link it to the established Impact and Data Framework. The following list provides an overview of how each KPI will be gathered and analysed through the platform, with a focus on the specific platform space and data sources that will be addressed for each KPI. It is important to note that this overview provides a provisional look at the data extraction process, as the platform is still under development. While the platform is evolving, we have been able to isolate the main spaces and data sources within the platform that will be utilized to extract the necessary data for the KPIs.

1. <u>Number of cross-sectoral participants actively engaging in co-design activities on the platform</u>: the platform will serve as the main data collection tool for tracking the engagement of participants across various sectors. The participants' backgrounds, including their expertise and associations, will be tracked through their profiles on the platform. Additionally, data from external partner databases will be integrated to provide a more comprehensive view of participant involvement. This data will be extracted from the platform's profile database, which records details such as user expertise, associations, active time, completed actions, and project participation. The platform's registration form and profile sections will serve as key data sources for this KPI.

2. <u>Number of co-design initiatives and projects initiated within the platform by cross-sectoral community members:</u> the i-Game platform will also track the number of co-design initiatives and projects initiated by cross-sectoral community members. The platform's project database will be used to collect data on the number of projects created, the participants involved in each project, and the number of completed actions within each project. The data will also capture the level of interaction within each project, including chat discussions and comments. This information is essential for measuring the success of cross-sectoral collaborations and their contribution to the development of new initiatives.

3. <u>Number of contents/technical knowledge consumed during the game design process:</u> the platform will gather data on the consumption of technical knowledge and content related to game design, particularly focusing on the number of downloads for plug-ins used during the design process. By monitoring the download activity of plug-ins, the platform can assess how participants are engaging with technical resources and the level of interest in specific content. This will provide insights into the adoption and use of key tools that contribute to the development of the game design process.

4. <u>Number of digitised cultural objects and assets:</u> the platform's media library will track the number of digitized cultural objects and assets uploaded by users. Some of these objects may already exist as fixed items, while others may be added over time as the project progresses. The platform will monitor and store data on the number of visual items uploaded, the number of new items generated, and the reuse of existing items. This information will allow project managers to evaluate the progress in digitizing cultural assets and ensure that the project is meeting its objectives related to the preservation and digitization of cultural heritage.

5. <u>Number of collaborative projects initiated through the platform:</u> the platform will track the number of collaborative projects initiated through its co-creation process. The project's database will capture data on the number of projects created, the

participants involved, and the number of completed actions within each project. This KPI will be monitored through the platform's co-creation process section, where users can initiate and contribute to collaborative projects. The data gathered from this section will provide valuable insights into the effectiveness of the platform in fostering collaboration and driving innovation through joint initiatives.

6. <u>Percentage of gamified experiences co-designed on the platform that include elements of diversity and inclusion:</u> data on the inclusion of diversity and inclusion elements in gamified experiences will be gathered through the platform. The platform will track the use of inclusion features during the co-design phase, counting how many times these features are used by co-creators. This KPI will help evaluate how well the platform is integrating diversity and inclusion into its design process, ensuring that gamified experiences created on the platform reflect a commitment to inclusivity. Data on the number of inclusion features and their usage will be extracted from the platform during the co-creation phase.

7. <u>Number of new features implemented on the platform based on user feedback:</u> this information will provide insights into how user feedback has influenced the platform's development and how these new features contribute to the overall effectiveness of the project.

4.2.2 Online surveys to participants

TARGETS:

- Museums/CCIs institutions/professionals 🖼️ (TG1)
- Museums/CCIs visitors/customers 🎫 (TG2)
- Textile and Fashion industry/professionals 👕 (TG3)
- Textile and Fashion customers 💃 (TG4)
- Game players 🎮 (TG5)
- Game co-creators 📐 (TG6)
- Citizens 👥 (TG8)

TIMELINE: The i-Game project will include three rounds of surveys to assess each of the three rounds of External Actions of Co-Creation Game Development. Each round of surveys is structured into two distinct phases:

Before Enrolment: Subscription Survey (T0)

Right After: Immediate Impact Survey (T1)

After a While: Long-Term Impact Survey (T2)

The three survey rounds are structured as follows:

- Round A will take place between M16 and M17 for T0 (Enrolment), followed by T1 directly after the experience, and the T2 survey will be conducted between M22 and M23 (5 months later).
- Round B will occur between M20 and M21 for T0 (Enrolment), followed by T1 directly after the experience, with the T2 survey taking place between M26 and M27 (5 months later).

- Round C will be conducted between M28 and M29 for T0 (Enrolment), followed by T1 directly after the experience, and the T2 survey will take place between M32 and M33 (5 months later).

FORMAT: Direct online survey to individuals with informed consent.

Table 8. KPIs extracted through Surveys to People

#	Outcome	#	KPI	Main data gathering tools	Secondary data gathering tools
1,1	**Expanded knowledge on arts and culture**	1	Percentage of end-users reporting increased knowledge on arts and culture after project activities	**Survey People T0-T1**	**Survey People T2**
		3	Number of empowered professionals understanding culture- & fashion-related issues in game development	**Survey People T0-T1**	**Survey People T2**
		4	Number of stakeholders claiming improved sensitivity and awareness of cultural content	**Survey People T0-T1**	**Survey People T2**
1,2	**Expanded knowledge on technology development**	6	Number of empowered professionals understanding tech-related issues in game development	**Survey People T0-T1**	**Survey People T2**
		8	Number of empowered professionals understanding more about tech-related issues related to technology development	**Survey People T0-T1**	**Survey People T2**
2,1	**Enhanced network development**	10	Number of stakeholders and end-users actively involved in network development initiatives	**Survey People T2**	**N/A**

				Platform	Survey People T0-T1
2,2	Enhanced cross-sectoral collaboration	14	Number of cross-sectoral participants actively engaging in co-design activities on the platform	Platform	Survey People T0-T1
		15	Number of stakeholders reporting enhanced collaboration and understanding with other stakeholders from diverse sectors	Survey People T0-T1	Survey People T2
3,1	Strengthened sense of belonging to a broader community	17	Percentage of end-users reporting improved sense of belonging to the local community	Survey People T2	N/A
		18	Percentage of community members reporting a stronger sense of identity and belonging to the gaming community	Survey People T2	N/A
		19	Number of end-users actively participating in community events	Survey People T2	N/A
3,2	Increased participation in cultural activities	20	Percentage increase in participation in cultural activities	Survey People T2	N/A
		21	Number of new end-users visiting partner cultural institutions for the first time during or after the project	Survey People T0-T1	N/A
		22	Number of end-users expressing a desire to participate in future cultural activities	Survey People T0-T1	Survey People T2

5,1	Development of soft and life skills	27	Number of people reporting increased soft and life skills through project activities	Survey People T0-T1	Survey People T2
5,2	Improved educational performance/experience	28	Number of people reporting improved educational performance through digital experiences	Survey People T0-T1	Survey People T2
5,3	Enhancement of hard skills	29	Number of fashion/textile professionals reporting enhanced technical skills in gamification and transmedia storytelling due to the project's activities	Survey People T0-T1	Survey People T2
		30	Number of cultural industry professionals reporting enhanced technical skills in service innovation and experience management through gamified experiences	Survey People T0-T1	Survey People T2
		31	Number of game co-designers reporting enhanced technical skills in game design and technology development through the co-design platform	Survey People T0-T1	Survey People T2
		32	Number of contents/technical knowledge consumed during the game design process	Platform	Survey People T0-T1
		33	Number of end-users claiming improved work efficiency thanks to the development of hard skills	Survey People T2	N/A

6,1	**Elevated awareness on sustainability and inclusion**	34	Number of end-users reporting increased sensitivity to sustainability and social inclusion issues	**Survey People T0-T1**	**Survey People T2**
		35	Number of stakeholders claiming to have reached a deeper understanding of social inclusivity and its value through gamification	**Survey People T0-T1**	**N/A**
6,2	**Increased accessibility to cultural initiatives**	36	Number of end-users with vulnerable and/or disadvantaged conditions claiming greater inclusion and accessibility in cultural experiences delivered through video games and other project-promoted activities	**Survey People T0-T1**	**Survey People T2**
7,1	**Human-centred technology development**	38	Percentage of platform users reporting satisfaction with the accessibility features	**Survey People T0-T1**	**N/A**
		40	Percentage of users who understand and effectively use explainable AI components	**Survey People T0-T1**	**N/A**
		41	Number of users who participate in activity to deepen the knowledge of the themes of gaming, inclusive and ethical design	**Survey People T2**	**N/A**
		42	User engagement levels in co-design activities on the platform	**Survey People T0-T1**	**N/A**

| | | 44 | Percentage of platform users who feel their contributions to co-design activities are valued | **Survey People T0-T1** | **Survey People T2** |
| | | 46 | Percentage of users who report increased knowledge of ethics, diversity, and inclusion after using the platform | **Survey People T0-T1** | **Survey People T2** |

The Survey to People is specifically designed for the target groups that consist of individuals, taking into consideration necessities of people coming from vulnerable groups. who include the above-mentioned targets. As part of the Informed Consent process in the participant surveys, individuals will be asked to provide the first two letters of their first name, the last two letters of their surname, and their year of birth. This information will be used to create a unique code for each respondent, enabling the project to track and monitor their impact over time while ensuring privacy and anonymity throughout the data collection process. The i-Game project conducts three key surveys designed to gather feedback from individuals who have interacted with the i-Game project, assessing their experiences and the impact the project has had on them in terms of knowledge, skills, and social engagement. The aim is to capture different phases of participant engagement and their evolving experiences, as well as to assess the impact of the project on both individual and organizational outcomes.

1. **Before Enrolment: Subscription Survey (T0)**

   This survey is completed at the start of the project before participants engage with the activities. It gathers basic demographic information, such as age, gender, country, city, and profession. It also collects data regarding participants' self-assessment of their skills in several areas (e.g., digital skills, game design, social inclusion), as well as their previous involvement with cultural institutions. Specific questions assess the importance of sustainability and social inclusion in the gaming sector, the role of gamification in promoting inclusivity, and the participant's prior exposure to game co-creation activities. This survey serves as a baseline for measuring learning and capacity-building outcomes, as well as the participant's initial level of engagement and inclusivity   needs.

2. **Right After: Immediate Impact Survey (T1)**

   This survey is administered immediately following the event or activity, aiming to capture participants' reactions and feedback on their experience. It assesses the knowledge gained on arts, culture, and technology, with questions exploring how much participants feel their skills in areas such as game development, cultural sensitivity, and tech-related issues have improved. Participants are also asked about their interactions with stakeholders from various sectors, their sense of belonging to the community, and their likelihood of participating in future cultural activities. It also tracks participants' awareness of sustainability and social inclusion issues, as well as their experience with the use of explainable AI components in game design. This survey

helps evaluate immediate learning outcomes and the short-term impact on knowledge, skills, and collaboration.

3. **After a While: Long-Term Impact Survey (T2)**

Administered several months after the activities, this survey seeks to capture the longer-term effects of the project. It focuses on how participants' knowledge and skills have evolved, with particular attention to arts, culture, and tech-related issues in game development. The survey measures changes in participants' sense of identity, their involvement in community events, and their likelihood of continuing to engage in cultural activities. It also assesses the impact on professional skills, such as gamification, transmedia storytelling, and service innovation. Additionally, it explores the influence of the project on social inclusivity, ethical design practices, and participants' use of explainable AI in their work. For organizations, the survey measures improvements in knowledge exchange, cultural experience creation, and collaboration with other sectors. This long-term survey helps gauge the sustained impact of the project on participants' personal and professional growth, as well as its influence on organizational practices and sector-wide changes.

4.2.3   Online surveys to organisations

TARGETS:

- Game Industry 👾 (TG7)
- Citizens 👥 (TG8)
- Policy Makers ᴇᴜ (TG9)
- SMEs 🏭 (TG10)
- Higher Education and Research Institutions 🎓 (TG11)
- Social Economy Organisations 🔗 (TG12)

TIMELINE these surveys will be conducted at three key stages in the project: the first during M22-23, the second during M26-27, and the third during M32-33. Each of these points coincides with an update to the Network Analysis Matrix, which is used to monitor the development and dynamics of the project's cross-sectoral networks.

FORMAT: Direct survey to individuals responding on behalf of their organization with informed consent.

Table 9. KPIs extracted through Surveys to Organization

#	Outcome	#	KPI	Main data gathering tools	Secondary data gathering tools
1,1	Expanded knowledge on arts and culture	2	Percentage of cultural institutions reporting improved knowledge exchange	Survey Organisations	N/A

1,2	Expanded knowledge on technology development	5	Percentage of cultural institutions/museum administrators reporting new knowledge on creating cultural experiences and narratives	Survey Organisations	N/A
		7	Number of cultural & textile/fashion organisations reporting enhanced knowledge on gaming and tech sectors	Survey Organisations	N/A
2,1	Enhanced network development	10	Number of stakeholders and end-users actively involved in network development initiatives	Survey People T2	Survey Organisations
		11	Number of new partnerships formed	Network Matrix	Survey Organisations
		12	Number of initiatives and projects launched	Network Matrix	Survey Organisations
2,2	Enhanced cross-sectoral collaboration	13	Number of cross-sectoral collaborations resulting in new cultural products or services	Network Matrix	Survey Organisations
		15	Number of stakeholders reporting enhanced collaboration and understanding with other stakeholders from diverse sectors	Survey People T2	Survey Organisations
4,1	Increased job opportunities	23	Number of stakeholders planning to recruit or expand their workforce due to project-inspired initiatives	Survey Organisations	N/A

4,2	Boosted organisations sustainability	24	New funding/investments attracted by cultural institutions and fashion designers/textile companies for sustainable products	Network Matrix	Survey Organisations
4,3	Innovation in cultural services and products	25	Number of new services or products launched or innovated	Survey Organisations	Network Matrix
		26	Number of good practices disseminated	Survey Organisations	Network Matrix
7,2	Fostered legal awareness and ethical-design culture in video game industry	48	Number of video game companies increasing or adopting ethical design practices	Survey Organisations	N/A

The Survey to Organizations is meant for organizations that have engaged with the i-Game ecosystem during the course of the project, and they will be selected among those inserted in the Network Analysis Matrix. This survey evaluates whether these organizations (such as museums, cultural and creative industry institutions, game companies, SMEs, and educational institutions) have experienced positive outcomes from their participation. The purpose of this survey is to assess whether these organizations have experienced a positive impact as a result of their involvement with the project.

4.2.4 Network Analysis Matrix

TARGET:

- Game Industry 👾 (TG7)
- Citizens 👥 (TG8)
- Policy Makers ᴇᴜ (TG9)
- SMEs 🏭 (TG10)
- Higher Education and Research Institutions 🎓 (TG11)
- Social Economy Organisations 🔗 (TG12)

TIMELINE: Constant update by partners, with extraction in May 2025 (M16), followed by subsequent extractions in October 2025 (M21), April 2026 (M27), and October 2026 (M33).
FORMAT: Excel sheets filled out by the partner organizations of the i-Game consortium.

Table 10. KPIs extracted through NAM

#	Outcome description	#	KPI	Main data gathering tools	Secondary data gathering tools
2,1	Enhanced network development	9	Number of organizations engaged and degree of engagement	Network Matrix	Survey Organisations
		11	Number of new partnerships formed	Network Matrix	Survey Organisations
		12	Number of initiatives and projects launched	Network Matrix	Survey Organisations
2,2	Enhanced cross-sectoral collaboration	13	Number of cross-sectoral collaborations resulting in new cultural products or services	Network Matrix	Survey Organisations
4,2	Boosted organisations sustainability	25	New funding/investments attracted by cultural institutions and fashion designers/textile companies for sustainable products	Network Matrix	Survey Organisations

The KPIs listed above will be integrated with the Survey to Organizations as part of the data gathering strategy for the i-Game project. While the Network Matrix will be the primary tool for tracking these KPIs, the Survey to Organizations will serve as a secondary tool to gather additional insights and validate the data collected through the Network Matrix.

The structure of the Network Analysis Matrix provides a comprehensive framework for tracking and evaluating the involvement and impact of organizations collaborating with the i-Game project over time. This database is specifically designed to systematically monitor the engagement of these organizations, allowing for an in-depth assessment of their collaboration with the project. The data collected will help measure the nature and intensity of these collaborations, the development of new projects or services, and the formalization of partnerships. The matrix tracks key indicators that measure the depth and breadth of engagement, partnership formation, and the impact of network-driven initiatives.

General Information: this section captures the basic details of the partner organizations, allowing for an overview of who is involved in the i-Game project. The data points include:

GENERAL INFORMATION					
n	Organization Name	Type of the Organization	Country	Services Provided	Date of Entry	Contact person (email)

- <u>Organization Name</u>: the name of the collaborating organization.

- <u>Type of the Organization</u> describes the nature or category of the organization, such as public, private, NGO, etc.

- <u>Country</u>: the country where the organization is based.

- <u>Services Provided:</u> specifies the services the organization offers in relation to the project.

- <u>Date of Entry</u>: when the organization first became involved in the project.

- <u>Involved in the Research Phase</u>: indicates whether the organization participated in the research phase of the i-Game project.

- <u>Was the organization involved thanks to the i-Game project?</u> This field tracks whether the organization's involvement was initiated or facilitated by the i-Game project.

Soft Outcomes: this section evaluates the qualitative outcomes of the organization's involvement with the i-Game project. Specifically, it looks at the intensity and type of collaboration in different rounds of the project. Columns of this section are the following.

SOFT OUTCOMES				
Was the organization involved the thanks to i-Game project?	How would you rate the intensity of the organization's involvement with i-Game project? **1st round - by APRIL 2025**	How would you rate the intensity of the organization's involvement with i-Game project? **2nd round - by JANUARY 2026**	How would you rate the intensity of the organization's involvement with i-Game project? **3rd round - by NOVEMBER 2026**	Specify the type of collaboration

- <u>How would you rate the intensity of the organization's involvement with the i-Game project?:</u> this question appears in three separate rounds, asking for an assessment of the organization's engagement at different points:
  - 1st round - by April 2025
  - 2nd round - by January 2026
  - 3rd round - by November 2026

Answer option scale with descriptions based on your provided Likert scale:

5: Close collaboration, synergy, and strong coordination

4: Frequent and well-organized collaboration, shared activities, and alignment on objectives

3: Regular collaboration on activities, good communication and coordination

2: Collaboration on specific activities, occasional interactions and coordination

1: Occasional collaboration, with few contacts

- *Specify the type of collaboration:* this field captures the nature of the collaboration with the organization, detailing how the relationship is structured (e.g., advisory, collaborative research, training).

Hard Outcomes: the hard outcomes focus on tangible results and milestones that reflect the project's impact, such as the development of new services and products, project proposals, formal agreements, and financial investments. Columns of this section are the following.

HARD OUTCOMES									
As a result of the project/network work, was a new project or service designed or applied with the organization in the last year?	If yes, please specify	In case of project applications, specify the total amount of budget proposal	As a result of the project/network work, was a new project/service/initiative delivered with the organization in the last year?	If yes, please specify	In case of formal project implementation, specify the total amount of budget of the project	Has a formal agreement been developed to solidify the collaboration with the organization?	If yes, please specify	Has an informal agreement been signed to solidify the collaboration with the organization?	If yes, please specify

- *As a result of the project/network work, was a new project or service designed or applied with the organization in the last year?* this assesses whether the collaboration has led to the creation of new projects or services within the past year, indicating the practical application of the partnership.

  o If yes, please specify further details about the new project or service that was developed.

  o In case of project applications, specify the total amount of the budget proposal: this field captures the financial scope of any new project proposals developed with the organization, showing the scale of the collaboration.

- *As a result of the project/network work, was a new project/service/initiative delivered with the organization in the last year?* these checks whether the collaboration led to the delivery of a new initiative.

  o If yes, please specify: details of the specific project, service, or initiative delivered.

  o In case of formal project implementation, specify the total amount of the budget of the project: this field records the financial scale of formally implemented projects that have come from the collaboration.

- *Has a formal agreement been developed to solidify the collaboration with the organization?* tracks whether the organization has entered into a formal agreement to strengthen the partnership.

  o If yes, please specify provides further details on the formal agreement, such as its nature or scope.

- *Has an informal agreement been signed to solidify the collaboration with the organization?* indicates whether an informal, non-legally binding agreement has been made to enhance the collaboration.

  o If yes, please specify details about the informal agreement, including its terms and nature.

This matrix is designed to capture both the qualitative and quantitative impact of the i-Game project's partnerships. The soft outcomes section focuses on engagement intensity and the types of collaboration, while the hard outcomes section tracks more measurable outcomes connected to KPIs such as project creation, financial impact, and formal or informal agreements. By evaluating each organization in these categories, the matrix aims to provide a thorough assessment of the success and evolution of the partnerships throughout the life of the project. To include an organization or project in the Network Analysis Matrix within the context of the i-Game project, it is essential to follow specific **eligibility criteria** that ensure the coherence and relevance of the data collected. In a European context, the selection criteria must be related to the direct or indirect connection of organizations or projects with the activities of the i-Game project. The key criteria for selection are as follows:

1. Direct connection to the i-Game project: only entities or projects that have been directly involved in the activities of the i-Game project should be included in the matrix. This includes organizations that have participated in research phases, workshops, collaborations, or that have been involved in specific project-related activities as part of the i-Game network. The inclusion of an entity depends on the level of involvement in activities linked to the project.

2. Knowledge through the i-Game project: organizations or projects that were identified, contacted, or involved in the network through the i-Game project, even if they were not actively engaged in its operational phases, should also be considered. In these cases, the key factor is the relationship formed through the project, such as through networking activities, knowledge exchange, or public presentations that occurred thanks to the visibility generated by the project.

3. Participation in related collaborations or activities: projects or organizations that have cooperated with i-Game partners in broader activities, such as creating new initiatives, participating in events, or developing innovative ideas or solutions, should also be included.

4. Relevance of contribution or participation: Another important criterion is the significance of the entity's contribution. Organizations or projects that have made a substantial impact on i-Game activities, or that, through cooperation, have meaningfully contributed to the achievement of the project's goals, should be selected. Participation should therefore be measured not only in terms of presence but also in terms of the qualitative and quantitative contributions to the project's progress.

In summary, organizations or projects to be included in the Network Analysis Matrix should be selected based on their direct or indirect connection to i-Game activities. The matrix will primarily focus on organizations that have actively participated in its initiatives or have been involved through the project itself, ensuring that the data collected is relevant and useful for analysing the evolution of the network and the impacts generated within the European context.

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4.2.5   Dissemination & Communication Database

TARGET: N/A, qualitative and transversal analysis will be applied

TIMELINE: the first analysis will occur in May 2025 (M16), followed by subsequent analyses in October 2025 (M21), April 2026 (M27), and October 2026 (M33). This tool will monitor the effectiveness of communication strategies and the spread of project materials, ensuring that key messages are reaching the intended audiences.

FORMAT: Excel sheets filled out by the partner organizations of the i-Game consortium.

From this database, only some dimensions will be analysed. While not all these dimensions are directly linked to specific targets or KPIs of the Impact Framework, they will be carefully analysed to assess their potential integration and alignment with the Impact Assessment to better capture their contribution to the project's overall goals. The selected dimension that will be taken into consideration for the impact monitoring are the following.

- Articles in journals/magazines: the analysis will focus on the dissemination of project results through articles published in journals and magazines, assessing their effectiveness in reaching the target audience and influencing academic and professional discussions.

- Special publications (scientific): the impact of scientific publications will be explored, not only in terms of visibility but also in how they contribute to knowledge and progress in the fields related to the project's objectives.

- Participation in international events/conferences: participation in international events and conferences will be monitored to understand how the project contributes to building global networks, sharing best practices, and influencing policies and practices at the international level.

- Fostering synergies with EU projects: the assessment will look at how the project fosters synergies with other EU-funded projects, and how these collaborations can amplify the project's impact at the European level by enhancing cooperation and broadening its influence.

- One-to-one meetings with policy makers: the impact of one-to-one meetings with policy makers will also be evaluated to understand how the project influences public policies and whether it

4.2.6   Internal Project Datasets and Deliverables

During the project, to implement the data gathering strategy for the Impact Assessment, Open Impact will also analyse existing internal project datasets and project deliverables as units of analysis. The rationale for using these existing datasets and deliverables is to systematize the data already collected and ensure that the valuable knowledge generated throughout the project is not lost. These datasets and deliverables will be instrumental in integrating quantitative and qualitative dimensions when needed to provide a comprehensive view of the project's impact and ensure the effectiveness of the Impact Assessment. For each dataset and deliverable, Open Impact will consult them only when possible and in accordance with the parameters outlined in Deliverable D1.2, *"Project and Data Management, Quality Assurance Plan, and Self-Assessment Plan."* This ensures that the use of existing datasets and deliverables aligns with the established guidelines and maintains the integrity and quality of the data throughout the project. This ensures that the use of existing datasets aligns with the

established guidelines and maintains the integrity and quality of the data throughout the project.

- <u>Dataset WP4 2 User Analytics Impact Assessment (CERTH)</u>: dataset created from user analytics, capturing interactions, preferences, and challenges, used for impact assessment and game balancing.

- <u>Dataset WP4 Platform User Analytics for Impact Assessment (UniSystems)</u>: dataset created from user analytics, capturing platform interactions, preferences, and challenges.

- <u>Dataset WP5 1 Pilot ERM (MSS)</u>: data related to the co-creation of the game, from initial contacts to final product usability feedback.

- <u>Dataset WP5 1 Pilot ERM (ERM)</u>: data related to the co-creation of the game, from initial contacts to final product usability feedback.

- <u>Dataset WP5 2 Pilot TMP (TMP)</u>: data related to the Pilot, from co-creation to testing.

- <u>Dataset WP5 3 Pilot KEPA (KEPA)</u>: data related to the Pilot, from co-creation to testing.

- <u>Dataset WP5 4 Pilot MSS (MSS)</u>: data related to the Pilots and research, from co-creation to testing.

- <u>Dataset WP6 2 Website Cookies and Analytics (KEPA)</u>: dataset providing an analysis of website traffic and user engagement, containing various metrics to understand performance, audience behaviour, and marketing efficiency.

- <u>Dataset WP6 4 Dissemination Activities (KEPA</u>): dataset generated in response to events organized by i-Game, containing attendee information while respecting privacy. Aims to enhance stakeholder engagement and personalized event experiences.

To ensure that the Impact Assessment is systematized and connected with other project intellectual outputs, Open Impact will use the following **deliverables** as part of the internal bibliography:

- <u>D2.1 Research Report v.1 (M12)</u>. This deliverable summarizes the methodology and findings from the desk and field research conducted in T2.1 and T2.2. It outlines the research framework, target groups, and methodology, combining desk research and field approaches like interviews, focus groups, and surveys. A total of 158 stakeholders were engaged to provide insights into the gaming sector. The findings focus on target group interests, perceptions of video games and gamification, and sector readiness for adoption, identifying key requirements and best practices for game development. An updated version of the report will include additional results from T2.2 in M26.

- <u>D2.2 Research Report v.2 (M26)</u>. Methodology and results of desk and field research conducted to serve set-up of WP3 and WP4 and feed WP4 and WP5.

- <u>D2.6 Initial Policy Brief (M15)</u> The deliverable analyses the challenges and opportunities in developing policy frameworks for the European gaming sector, within the broader goals of the i-Game project. It explores the transformative role of games in innovation, sustainability, and social cohesion, using legal analysis and policy mapping. The document discusses the current state of the EU gaming sector, including regulatory issues, market trends, and financial mechanisms. It highlights gaps in policy,

particularly regarding online safety, inclusivity, and the ethical use of AI. The report concludes with recommendations for future policy development, emphasizing the role of games in knowledge exchange, community engagement, and technological innovation.

- D3.2 Final Users' Analysis (M12). This deliverable, D3.2 Final Users' Analysis, presents the results of task T3.2 User Personas and Co-creation Definition within WP3 - Co-creating Games by Engaging People from Different Backgrounds. The analysis involved field research with primary platform end users through interviews, focus groups, and surveys, considering factors like gender, capabilities, technological skills, and preferences. The research identified and prioritized 27 High-Level User Requirements (HLURs) and resulted in the creation of 15 User Personas with corresponding Empathy Maps. These personas capture user characteristics such as motivations, skills, fears, and interests, forming the basis for defining technical requirements and platform development. The co-creation process was structured into four phases: Kick-Off, Game Design, Storytelling, and Aesthetics. The insights from this research will continue to guide the project's development, aligning it with user needs and expectations. Further work in WP3 will refine these results into the Experience Design Document.

- D5.1 Initial Pilot Report (M15)

- D5.2 Pilot Roadmap (M25). Visual plan to carry out the pilots, accompanying toolkit and guidelines to users.

- D5.3 Small game prototype in fashion & textile of Central Macedonia (M33). The result from running the pilot in the region of Central Macedonia to tackle a challenge of the fashion & textile ecosystem.

- D5.4 Sustainable Fashion and Textiles Challenge (M33). The experimentation around topics like traditional and circular textile/clothing products life cycle assessment, importance of consumers behaviour and awareness, traceability of production processes and circularity.

- D5.5 Small Games Prototypes in Museums (M33). The result from running the pilots in the museums in small Game Prototypes to tackle societal challenges.

These deliverables function as an internal "bibliography" that guides the content and structure of the Impact Assessment. They provide aggregated and processed field research data, ensuring that the Impact Assessment is aligned with the broader project outcomes. This internal reference framework ensures consistency and coherence across the evaluation process while grounding the assessment in the actual data generated by the project.

4.2.7 Qualitative research

TARGET

- Museums/CCIs institutions/professionals 🖼️ (TG1)

- Museums/CCIs visitors/customers 🎫 (TG2)

- Textile and Fashion industry/professionals 👕 (TG3)

- Textile and Fashion customers 💃 (TG4)

- Game players 🎮 (TG5)

- Game co-creators ◣ (TG6)

- Citizens 👥 (TG8)

TIMELINE: In parallel with the survey rounds, a qualitative analysis will be conducted to provide deeper insights into the participants' experiences and perceptions throughout the Actions of Co-Creation Game Development.

o **Participant Observation (T0-T1) (PO):** During the same time span as the T0 and T1 phases of each round, participant observation will take place. This will involve closely observing the participants as they engage in the co-creation activities, allowing researchers to capture real-time behaviours, interactions, and engagement. These observations will help to understand the context and dynamics of the experience, providing a richer understanding of the survey responses.

o **Interviews and Focus Groups (T2) (I/F):** In the same months as the T2 surveys for each round (i.e., M22-23 for Round A, M26-27 for Round B, and M32-33 for Round C), a set of interviews and/or focus groups will be conducted with the participants. These qualitative methods will be used to gather detailed feedback on the long-term effects of the co-creation process. Interviews and focus groups will offer a space for participants to discuss their experiences in more depth, reflect on their learning and changes over time, and provide nuanced perspectives that surveys alone might not capture.

FORMAT: Interviews, focus group and Structured template as observation journal template and semi-structured interviews template.

Within the i-Game project, the evaluation of pilot activities necessitates a methodological framework capable of capturing the complexity and diversity of participant experiences. Recognising the limitations of using exclusively survey-based instruments, Open Impact has adopted a complementary set of qualitative data collection tools. These tools are designed to support a more comprehensive and context-sensitive impact assessment, capable of informing both the design and refinement of the pilots and the strategic objectives of the i-Game initiative as a whole.

Participant observation, which has been formally integrated into the methodological toolkit for facilitators of pilot sessions, serves multiple purposes. It captures real-time behaviours, emotional reactions, and group dynamics; identifies challenges encountered during activities; assesses the relevance and accessibility of workshop formats; and complements quantitative indicators with experiential data. The objective is not only to observe participation but to understand how engagement unfolds across different contexts and to what extent the design of the sessions fosters inclusion, interaction, and co-creation. To ensure the quality and consistency of observational data, facilitators are provided with structured guidelines and an **observation journal template**. These instruments facilitate the systematic documentation of key elements such as participant responsiveness, collaboration patterns, emotional cues, and instances of disengagement. Special attention is given to recording both verbal expressions and non-verbal signals, enabling the observer to develop a more holistic understanding of the participants' experience. Moreover, the structured approach to note-taking encourages facilitators to avoid subjective interpretation during data capture, focusing instead on what is directly observed and heard. Observational data are collected either in real time or immediately following each session, using predefined categories that ensure comparability across pilot sites. Each observation log includes essential metadata (such as date, location, and type of activity), descriptive entries concerning levels of engagement, and an open section

dedicated to additional notes. This final section allows for the inclusion of context-specific insights, such as quotes that reflect participant attitudes, environmental factors that may have influenced behaviour, or unexpected outcomes that merit further exploration.

In parallel, **semi-structured interviews** are proposed as a method for deepening the understanding of participant perspectives. These interviews are conducted with a selected sample of participants, chosen to reflect the diversity of user profiles involved in the pilots. The flexibility of the semi-structured format allows for guided yet open-ended discussions, offering space for participants to articulate their reflections, perceived benefits, and any barriers they may have encountered. Importantly, this format allows the project team to triangulate findings from observational data, reinforcing the robustness of the overall evaluation framework.

The **integration of existing qualitative material as stated in** *4.2.6 Internal Project Datasets and Deliverables*, where available, further contributes to methodological coherence. Prior qualitative data collected during earlier phases of the project or through related activities is reviewed and incorporated where appropriate, subject to approval by the consortium. This ensures that historical insights are not lost and that new findings are contextualised within the broader trajectory of the i-Game initiative.

5 NEXT STEPS

5.1 Data gathering strategy implementation

The data gathering strategy is designed to align with the recommendations established during the design of the Research Framework in T2.1 (see D2.1 Research Report v.1) to ensure a comprehensive impact assessment. It adopts integrated frameworks, combining multiple methodologies to assess the impact across four key areas: cultural, social, economic, and sustainability/environmental. Additionally, the strategy leverages advanced technology (including AI and to enhance data collection, analysis, and PowerBi for data visualisation) making the assessment process more dynamic and accurate. A core aspect of the strategy is stakeholder engagement, ensuring that stakeholders are actively involved throughout the assessment process. Their perspectives are incorporated, fostering trust and leading to more reliable and accepted results. Finally, the strategy promotes cross-sectoral learning, encouraging collaboration and knowledge exchange between sectors, which helps create more robust and comprehensive assessment frameworks. The table outlines a detailed schedule of activities and tools planned for the i-Game project, detailing when and how different types of data will be collected and analysed across the project's timeline. These tools are critical for assessing the project's impact and gathering insights from various stakeholders, including the public, organizations, and participants. The schedule spans from May 2025 (M16) through December 2026 (M35), with a focus on iterative data collection and analysis at key milestones.

Table 11. Data collection milestones

TOOLS	M16-17	M18-19	M20-21	M22-23	M24-25	M26-27	M28-29	M30-31	M32-33	M34-35
Qualitative tools (Interviews and FG) - Participants	PO		PO	INT		INT	PO		INT	
Online Survey People	A) t0+t1		B) t0+t1	A) t2		B) t2	C) t0+t1		C) t2	
Online Survey Organization				R1		R2			R3	
i-Game Platform	1st extraction M16		2nd extraction M21			3rd extraction M27			4th extraction M33	
Network Analysis Matrix	1st extraction		2nd extraction			3rd extraction			4th extraction M33	
Dissemination & Communication DB	1st analysis M16		2nd analysis M21			3rd analysis M27			4th analysis M33	

Project's Deliverable / Datasets *(as listed in D1.2)*	1st analysis M16		2nd analysis M21			3rd analysis M27			4th analysis M33	

The data collection is organized into four major rounds: the **first** takes place between **M16-17**, the **second** between **M20-22**, the third between **M26-28**, and the **fourth** between **M32-33**. Each tool will be utilized according to the following schedule:

1. **i-Game Platform (Custom Platform Analytics):** the first extraction will occur in May 2025 (M16), followed by a second extraction in October 2025 (M21). A third extraction is scheduled for April 2026 (M27), with a final extraction in October 2026 (M33). These extractions will allow for the ongoing tracking of the platform's usage and effectiveness.

2. **Online Survey People:** The i-Game project will include three rounds of surveys to assess each of the three round of External Actions of Co-Creation Game Development. Each round of surveys is structured into two distinct phases: *Before Enrolment: Subscription Survey (T0), Right After: Immediate Impact Survey (T1), After a While: Long-Term Impact Survey (T2)*

The three survey rounds are structured as follows:

- Round A will take place between M16 and M17 for T0 (Enrolment), followed by T1 directly after the experience, and the T2 survey will be conducted between M22 and M23 (5 months later).

- Round B will occur between M20 and M21 for T0 (Enrolment), followed by T1 directly after the experience, with the T2 survey taking place between M26 and M27 (5 months later).

- Round C will be conducted between M28 and M29 for T0 (Enrolment), followed by T1 directly after the experience, and the T2 survey will take place between M32 and M33 (5 months later).

0. **Online Survey Organization**: these surveys will be conducted at three key stages in the project: the first during M22-23, the second during M26-27, and the third during M32-33. Each of these points coincides with an update to the Network Analysis Matrix, which is used to monitor the development and dynamics of the project's cross-sectoral networks..

1. **Network Analysis Matri_x_**: the first extraction of network data will occur in May 2025 (M16), followed by subsequent extractions in October 2025 (M21), April 2026 (M27), and October 2026 (M33). These extractions will provide insights into how the project's partnerships and networks evolve over time.

2. **Dissemination & Communication Database:** the first analysis will occur in May 2025 (M16), followed by subsequent analyses in October 2025 (M21), April 2026 (M27), and October 2026 (M33). This tool will monitor the effectiveness of communication strategies and the spread of project materials, ensuring that key messages are reaching the intended audiences.

3. **Project's Deliverables / Datasets (as listed in D1.2)** : these analyses will be constant.

4. **Qualitative Data Collection Tools**: In parallel with the survey rounds, a qualitative analysis will be conducted to provide deeper insights into the participants' experiences and perceptions throughout the Actions of Co-Creation Game Development.

- Participant Observation (T0-T1) (PO): During the same time span as the T0 and T1 phases of each round, participant observation will take place. This will involve closely observing the participants as they engage in the co-creation activities, allowing researchers to capture real-time behaviours, interactions, and engagement. These observations will help to understand the context and dynamics of the experience, providing a richer understanding of the survey responses.

- Interviews and Focus Groups (T2) (INT/FG): In the same months as the T2 surveys for each round (i.e., M22-23 for Round A, M26-27 for Round B, and M32-33 for Round C), a set of interviews and/or focus groups will be conducted with the participants. These qualitative methods will be used to gather detailed feedback on the long-term effects of the co-creation process. Interviews and focus groups will offer a space for participants to discuss their experiences in more depth, reflect on their learning and changes over time, and provide nuanced perspectives that surveys alone might not capture.

In November-December 2025 and June-July 2026, Open Impact and the project partnership will assess whether to extend, modify, or confirm the data collection system, based on the activities carried out and the quality of the data collected up to that point. This evaluation will consider the project's progress and the effectiveness of the current data collection methods in capturing relevant information. Additionally, there is a provision to include new tools or methodologies as the project evolves. This flexible approach allows for adaptation to emerging needs or innovations, ensuring that the data collection and analysis process remains effective and responsive to the project's requirements. As part of this ongoing evaluation, the project will validate existing tools while also exploring the inclusion of new ones to improve the overall data collection and analysis process.

5.2 Data analysis and Impact-project management integration

Impact assessment and data analysis are essential components of the i-Game project's management framework, offering a structured approach to measure, track, and analyse the outcomes of various project activities. This process not only helps the project team evaluate its performance against its goals but also provides actionable insights that directly influence management decisions, enabling continual improvement throughout the project's lifecycle.

A critical advantage of integrating impact assessment into project management is the ability to gather and process real-time data. With the use of various data collection tools such as i-Game platform, surveys, interviews, and the Network Analysis Matrix, project managers are equipped with timely, precise information regarding the progress of the project. Based on the insights that emerge from data analysis, the project team can immediately adjust strategies to address the issues, ensuring that the project remains on track and aligned with its original objectives. Similarly, through the continuous monitoring of these indicators, project managers can identify strategies that are working well and should be scaled, such as a particular outreach method or engagement activity that has generated strong participation.

Data analysis allows for an in-depth evaluation of both the intended and unintended effects of project activities. For example, the i-Game project may be conducting workshops aimed at enhancing cross-sectoral collaboration between game developers and cultural institutions. Through ongoing data collection and analysis, the project team can assess how successful these workshops are in fostering meaningful collaborations. By tracking key performance indicators (KPIs) like the number of new partnerships formed or the number of collaborative

projects launched, the project team can determine the effectiveness of these activities and decide whether to replicate them in other regions or contexts. This continuous feedback loop ensures that the project is agile, allowing it to adapt its strategies and activities as needed to maximize impact.

The integration of impact assessment and data analysis within the i-Game platform provides valuable feedback to the technical partners responsible for its development and management. By analysing user engagement, feature utilization, and co-creation activities, technical partners gain insights into the platform's performance and user experience. This data-driven approach ensures that platform development remains responsive to both user feedback and the overall objectives of the i-Game project, optimizing functionality and enhancing collaboration.

Moreover, the impact assessment can help refine key operational areas such as communication, resource allocation, and stakeholder management. For example, if data analysis reveals that certain stakeholders, such as SMEs or academic institutions, are not fully engaged with the project, the project team can adjust their outreach and communication strategies to better connect with these groups. Similarly, the ongoing data collection helps optimize resource allocation. If certain project activities or tools are found to be underperforming, resources can be reallocated to more impactful areas, ensuring that the project's limited resources are used in the most effective way possible.

Practical examples of how this data-driven approach can be implemented include the use of the Network Analysis Matrix to assess the effectiveness of stakeholder engagement across different sectors. For instance, if the data reveals that certain sectors are more active in forming new partnerships or initiatives, the project team can target their efforts to further strengthen those relationships while finding ways to engage fewer active sectors. Another example is the use of online surveys to gauge the effectiveness of workshops or pilot programs, which provides the project team with immediate feedback to fine-tune these activities. Additionally, qualitative data from interviews or focus groups can provide deeper insights into stakeholder needs and challenges, allowing the project to respond more effectively.

The integration of impact assessment and data analysis also promotes greater accountability and transparency throughout the project. By tracking KPIs and documenting progress, the project team can present clear evidence of the project's impact to stakeholders, such as funding agencies, policy makers, and the wider community. This not only builds trust but also ensures that the project is held to high standards of performance, increasing its credibility and reputation.

Furthermore, the use of data analysis creates a foundation for long-term sustainability. By identifying successful strategies and areas for improvement, the project can implement changes that ensure its continued relevance and impact even after its conclusion. For instance, if the project identifies specific strategies that lead to more sustainable partnerships or greater impact in certain sectors, these strategies can be integrated into future initiatives or used as a model for similar projects.

In conclusion, impact assessment and data analysis are integral to the i-Game project's success. They not only provide a framework for monitoring and assessing the project's progress but also allow for continuous improvement and optimization. By using real-time data to make informed decisions, the project team can refine strategies, allocate resources effectively, and ensure that the project stays aligned with its goals. This data-driven approach

enables the i-Game project to maximize its impact, adapt to changing circumstances, and ultimately achieve its long-term objectives.

6 EXPECTED IMPACT

The i-Game project is designed to generate positive outcomes across multiple sectors by leveraging video games as tools for cultural, educational, and technological innovation. The expected impacts of the project are wide-reaching and aim to strengthen cross-sector collaboration, promote social inclusion, drive economic growth, and push the boundaries of technological development and will particularly benefit the museum, fashion, and textile sectors, with a focus on creating sustainable, innovative, and inclusive systems. The impacts are framed around seven interconnected outcome areas: knowledge exchange, network development, community and social relationships, economic development, learning and capacity building, social inclusiveness, and technological development. Each of these domains is expected to contribute to a broader transformation in the way cultural and technological sectors engage with the public, develop new solutions, and contribute to social and economic development. The following paragraph will describe synthetically and in an integrated manner the impact expected to be generated by the project by segmenting it in each of the major outcome areas previously identified.

6.1 Knowledge Exchange

The i-Game project aims to establish video games as vital platforms for cross-sectoral knowledge production, dissemination, and translation. While traditionally viewed as mere entertainment, digital games are increasingly recognized as dynamic environments capable of embedding, co-creating, and spreading knowledge across diverse sectors, including arts, culture, and technology. In the museum sector, digital games have been shown to enhance visitor engagement by enabling interactive storytelling, fostering inclusivity, ensuring access and inclusion to game co-development and providing access to cultural heritage in both physical and virtual spaces. They serve as powerful tools for overcoming cognitive and emotional barriers, helping users connect empathetically with historical narratives and artifacts. Key indicators here include the percentage of end-users reporting increased knowledge on arts and culture after project activities and the number of professionals understanding the interconnection among culture/fashion and game development. Similarly, in the fashion and textile industries, virtual game environments are being explored to prototype new designs, test sustainable materials, and engage consumers in interactive experiences. The i-Game project will facilitate knowledge exchange by enabling collaborations between game developers, curators, educators, and designers. Indicators for these efforts include the number of cultural institutions reporting improved knowledge exchange and the number of cultural & textile/fashion organizations reporting enhanced knowledge on gaming and tech sectors. Through these activities, the project will also evaluate whether participants report increased understanding of ethical, legal, and cultural considerations in game-based interventions. The number of stakeholders claiming improved sensitivity and awareness of cultural content and the percentage of cultural institutions/museum administrators reporting new knowledge on creating cultural experiences and narratives will track this impact.

6.2 Network Development

A core expected impact of i-Game is the formation of durable, cross-sectoral networks that foster long-term collaboration beyond the project's formal duration. These networks are intended to create ecosystems for mutual learning, innovation, and sustainable cultural production. By bringing together a diverse range of stakeholders (ranging from cultural institutions like museums to small and medium-sized game studios) the project aims to

facilitate knowledge integration, collective experimentation, and shared problem-solving. Through these collaborations, i-Game will support the development of new partnerships and initiatives that promote innovation across sectors. The project will explore how deeply organizations engage with each other, as well as the potential for new partnerships and projects to emerge from these cross-sector collaborations. Over time, the success of these efforts will be reflected in the creation of new cultural products or services and the level of active participation in co-design activities facilitated by the platform. Ultimately, i-Game will assess the effectiveness of these networks by focusing on the strength and depth of relationships formed among diverse stakeholders. By observing the growth in co-design initiatives and the increased understanding and collaboration between different sectors, the project will evaluate how well these networks have supported the development of a sustainable and inclusive cultural ecosystem.

6.3 Community and Social Relationships

The i-Game project aims to use games as powerful tools for fostering social relationships and promoting community engagement. By involving diverse stakeholders in the co-creation process, the project will cultivate inclusive digital spaces where users can interact, express their identities, and form strong, meaningful community bonds. The goal is to create environments where both local and virtual communities thrive, allowing participants to connect with one another in deeper, more engaging ways. Through its activities, i-Game encourages participants to strengthen their sense of belonging within their local communities as well as within the gaming community. The project will explore how these digital experiences translate into real-world engagement, such as through active participation in community events. For example, it will assess whether individuals feel more connected to their communities after participating in the project and whether this leads to a deeper sense of identity and belonging. In the museum sector, the project's approach will encourage active participation in the creation and engagement with cultural content, shifting visitors from passive consumers to active creators. This shift will help foster long-term cultural engagement, where the impact of participation is measured not only by initial involvement but also by a sustained desire to continue engaging with cultural activities. This lasting effect will be important in understanding how the project can help cultivate a cultural engagement mindset, influencing both current and future behaviours.

6.4 Economic Development

i-Game is expected to stimulate economic growth by creating new opportunities in the creative, cultural, and digital sectors. By fostering cross-sector collaborations that integrate game-based methodologies, the project will drive innovation and support the development of new products and services. These collaborative efforts are intended to contribute to the growth of both the digital and cultural economies, helping to bridge the gap between technology and creative industries. Through these activities, the project will provide valuable support for cultural institutions, fashion designers, and textile companies, enabling them to attract new funding and investments. The project aims also to facilitate the development of new business models and entrepreneurial opportunities, fostering a more resilient and innovative economy. As i-Game promotes the launch of new products and services, it will help identify the emerging trends and approaches that can spark broader industry innovation. In addition, the project will contribute to regional economic resilience by supporting the growth of cultural-creative clusters. Through its efforts to disseminate good practices and models, i-Game helps organizations replicate successful strategies across sectors, extending the

project's influence beyond the immediate participants.

6.5 Learning & Capacity Building

The i-Game project aims to significantly enhance the capacity of stakeholders, particularly those in smaller organizations, to address the complex legal, ethical, and technical challenges associated with game-based projects. The i-Game platform itself will serve as a tool for skill development, allowing participants to engage with practical resources and collaborative tools that enhance their technical and creative abilities. In addition, co-designing toolkits, good practice guidelines, and educational resources, the project will build the digital skills and cultural awareness of professionals in the gaming, museum, and fashion sectors. These efforts are designed to empower stakeholders with the knowledge and tools they need to engage with emerging technologies in a socially responsible and effective way. i-Game will foster both hard and soft skills development among participants. It will also equip them with practical skills to navigate issues such as digital ethics, and inclusive design. The project will assess its impact by tracking improvements in both soft skills (such as problem-solving and teamwork) and technical expertise in areas such as gamification, transmedia storytelling, and service innovation. For example, the development of enhanced technical skills in areas like game design and technology development will ensure that professionals are ready to contribute to the evolution of digital culture. Through these efforts, i-Game will help stakeholders understand and apply emerging technologies, contributing to inclusive and sustainable innovation in the cultural and creative sectors.

6.6 Social Inclusiveness

A core principle of i-Game is the promotion of social inclusiveness. The project is committed to ensuring that marginalized and vulnerable communities are not only represented but actively included in the co-creation process. By providing access to cultural experiences and gaming technologies that prioritize diversity, the project seeks to create opportunities for engagement and empowerment among underrepresented groups. Through its activities, i-Game will foster increased sensitivity to sustainability and social inclusion issues. The project will track the number of end-users reporting increased sensitivity to sustainability and social inclusion issues, reflecting the extent to which participants gain a deeper understanding of these important topics through their engagement with the project. It will also measure how well it helps stakeholders achieve a deeper understanding of social inclusivity and its value, particularly through the lens of gamification, with the number of stakeholders claiming to have reached a deeper understanding of social inclusivity and its value through gamification serving as a key indicator. i-Game will co-design a set of tools and guidelines aimed at enabling individuals from underrepresented groups (e.g., women, persons with disabilities, older adults, individuals with low digital literacy, and members of minority groups) to actively create their own inclusive games, rather than merely being regarded as end-users. This approach ensures that their voices are incorporated into the design and development process, allowing the diverse needs of these groups to be properly represented and addressed within the gaming industry. Rather than focusing solely on developing guidelines for content accessibility, the work will involve direct collaboration with users from these groups, with the primary goal of improving the accessibility of game authoring tools and design processes. All along the implementation, i-Game will assess its success in increasing access for marginalized and vulnerable groups. This will be reflected in the number of end-users with vulnerable and/or disadvantaged conditions claiming greater inclusion and accessibility in cultural experiences delivered through video games and other project-promoted activities. The goal

is to ensure that these groups not only have access to cultural experiences but are actively included in the design, development, and enjoyment of them, fostering a sense of belonging and active participation.

6.7 Technological Development

Technological development is central to i-Game, with a focus on embedding responsible innovation in the creation of new digital experiences. The project aims to drive technological advancements by addressing key challenges such as the creation of an accessible open-source game development platform, an ethical use of AI, user-generated content moderation, and the integration of digital rights frameworks into the gaming and cultural sectors. By doing so, i-Game ensures that technology serves both to enhance user experience and promote socially responsible practices across the gaming industry. The project will contribute to the digital preservation of cultural heritage by digitizing cultural objects and assets, ensuring their accessibility in a digital form. The platform's effectiveness will also be assessed by how well it supports user satisfaction, particularly in terms of accessibility features, as well as by fostering collaboration across sectors through projects initiated on the platform. As the platform evolves, i-Game will work to promote transparency and ethical decision-making, particularly around AI usage. This will include encouraging users to engage with explainable AI components and participate in activities focused on gaming, inclusive design, and ethics. The feedback gathered from users will also guide the development of new features, ensuring that the platform adapts to meet user needs and reflects ongoing technological advancements. In addition to these technological innovations, i-Game will contribute to the broader development of ethical design practices within the gaming industry. By disseminating key resources (such as ethical design guidelines, legal awareness materials, and best practices) the project will help video game professionals adopt more inclusive and responsible approaches to design. This will lead to a wider embrace of ethical design practices in the gaming industry, ensuring that social inclusivity is a central part of development processes and outputs.

7 CONCLUSIONS

The present report aimed to outline the conceptual and operational framework for defining, monitoring, and analysing the expected impact of the i-Game project.

Chapter 1 describes how the impact assessment methodology for the i-Game project combines both summative and formative approaches. The summative approach focuses on attribution and accountability, while the formative approach emphasizes learning and improvement. This balance between rigor and realism is essential in capturing the immediate outcomes and the long-term, evolving impact of the project. Drawing from the literature in the cultural and gaming domains, the i-Game project anticipates several desired outcomes, including increased engagement with cultural heritage, enhanced digital literacy and creativity, new cross-sector collaborations, and strengthened social cohesion through shared gaming experiences. The context of gaming and culture necessitates a tailored Impact Framework, which uses a combination of quantitative and qualitative tools to assess both the results and the processes that lead to them. The impact assessment process must therefore employ a variety of quantitative and qualitative tools to adequately capture these complexities. The combination of these tools allows for a comprehensive evaluation that not only measures the outcomes but also explores the processes through which these outcomes are achieved, ensuring that the project's impact is fully understood and validated. This approach to data gathering, which involves both objective metrics and subjective feedback, is foundational for capturing the diverse contributions the project makes to its stakeholders.

Chapter 2 presented the updated impact and data framework for the i-Game project. While some KPIs were eliminated during the revision process, no outcome areas or outcomes were discarded. This revision was made to streamline the measurement process, ensuring that only the most relevant and impactful indicators are used for assessing the project's progress. Despite the elimination of certain KPIs, all key outcome areas and outcomes have been retained to guarantee the project remains aligned with its original objectives. These seven key outcome areas (Knowledge Exchange, Network Development, Community and Social Relationships, Economic Development, Learning & Capacity Building, Social Inclusiveness, and Technological Development) continue to reflect the core goals of the project. This ensures that the scope of the project's aims remains intact while focusing on the most meaningful data for evaluation. Moreover, the updated SROI (Social Return on Investment) calculation, which forecasts a Net Present Value (NPV) of €5,954,629.76, reflects a social return of €1.49 for every euro invested in the project. This forecasted SROI considers the complexity of the project, its broad scope, and its experimental nature, all of which have made the calculation challenging and make it still temporary.

In Chapter 3, the activities central to the assessment of the i-Game project have been outlined and analysed. These activities include WP4, which focuses on the Co-creation Platform and its integration with existing solutions, WP5, which involves pilot cases in Prato, Central Macedonia, and Estonia, Task 6.2 on Communication and Dissemination Activities, and Network and Ecosystem Development. Additionally, the target groups for these activities have been confirmed. The stakeholders to whom the activities are directed include a broad range of participants, such as Museums/CCIs institutions and professionals, Museums/CCIs visitors and customers, Textile and Fashion industry professionals, Game players, Game co-creators,

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SMEs, Higher Education and Research Institutions, Policy Makers, and Social Economy Organizations. These stakeholders form the backbone of the i-Game project's inclusive and collaborative ecosystem, ensuring that the project's impact is both far-reaching and diverse.

Chapter 4 focused on the data gathering strategy, highlighting the essential tools used to collect, analyse, and evaluate the key information related to the i-Game ecosystem. These tools (platform, online surveys to participants, online surveys to organizations, network analysis matrix (NAM), dissemination & communication database, internal project datasets and deliverables, qualitative data collection tools) are vital for capturing both quantitative and qualitative data at various stages of the project. Each tool is designed to target specific audiences, gather relevant data, and align with the project's outcomes and KPIs. These tools are integral to assessing the project's progress, impact, and overall success.

In Chapter 5, the implementation of the data gathering strategy was outlined. The schedule of activities and tools for data collection spans from May 2025 (M16) to December 2026 (M35), with an emphasis on iterative data collection and analysis at key milestones. This strategy ensures that impact management is integrated into the broader project management process, allowing for continuous monitoring, evaluation, and adaptation as the project progresses. The data gathered will inform future iterations of the project, ensuring that it remains responsive to the needs of its stakeholders and aligned with its intended social impact.

Chapter 6 describes the expected impact, clustered into the seven key outcome areas as the project is designed to bring about transformative change across multiple sectors by leveraging video games as tools for cultural, educational, and technological innovation. The project aims to create significant impacts in the museum, fashion, and textile sectors while focusing on developing sustainable, inclusive, and innovative systems. The expected outcomes span across seven key areas: knowledge exchange, network development, community and social relationships, economic development, learning and capacity building, social inclusiveness, and technological development. Each of these areas is interlinked, contributing to broader transformations in how the cultural and technological sectors engage with the public and develop new solutions.

The knowledge exchange aspect of the project emphasizes the power of video games to foster cross-sectoral knowledge production, helping institutions like museums and the fashion and textile industries bridge knowledge gaps. It highlights the importance of gamification for enhancing cultural engagement, driving innovation, and fostering ethical design. Through cross-sector collaboration, the project also aims to build durable networks that facilitate long-term partnerships and knowledge exchange.

The project places a strong emphasis on social relationships and community building, using gaming as a tool for social cohesion. This approach encourages active participation in cultural content creation, transforming passive museum visitors into active creators. By promoting engagement with cultural heritage through digital experiences, i-Game is fostering lasting relationships both within local communities and the global gaming community.

In terms of economic development, i-Game supports the growth of the creative, cultural, and digital sectors by driving innovation and encouraging new partnerships. Through cross-sector collaboration, the project enables stakeholders to create new business models, attract investments, and contribute to the development of cultural-creative clusters.

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Learning and capacity building are key components, with a focus on equipping stakeholders with the technical, legal, and ethical skills needed to navigate the challenges of digital and game-based environments. Through practical resources and co-designed toolkits, i-Game is enhancing digital literacy, social responsibility, and technical expertise across sectors.

The project's commitment to social inclusiveness ensures that marginalized and vulnerable groups, such as individuals with disabilities or from minority backgrounds, are not only included as end-users but also actively participate in the creation of inclusive digital experiences. By providing tools and guidelines for the co-design of games, i-Game ensures that underrepresented groups have a direct influence on the development process, ensuring their voices are heard and their needs are addressed.

Finally, technological development within i-Game is focused on promoting responsible innovation, with an emphasis on accessibility, AI ethics, and the digital preservation of cultural heritage. The platform's development will incorporate user feedback, ensuring that technological advancements continue to meet the needs of users and reflect ongoing changes in the industry.

In conclusion, the i-Game project's impact assessment framework offers a comprehensive and dynamic approach that will experience a continuous refinement of the data gathering strategy and SROI calculations. This evolving dynamic has to be considered structural of the project for its experimental nature. Such an updating process is necessary to make possible for the consortium to clarify impact goals and monitor them. As the project moves forward, the anticipated decrease in complexity should provide more clarity and precision in measuring the project's impacts, particularly as activities are more fully implemented. Furthermore, the actual implementation of activities, particularly through co-creation processes and pilot cases, will yield more accurate data, enhancing the effectiveness of the assessment framework.

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