Realising an Applied Gaming Eco-system

Research and Innovation Action

Grant agreement no.: 644187

D7.3 – Summary Report RAGE Stakeholder Consultation Process

RAGE – WP7 – D7.3

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LIST OF ABBREVIATIONS

EAGDEuropean Applied Games Directory
ECGBLEuropean Conference Games Based Learning
GALAGames and Learning Alliance
IGBLIrish Games Based Learning
IPIntellectual Property
IPRIntellectual Property Rights
RAGERealising Applied Gaming Ecosystem
EXECUTIVE SUMMARY

This report presents a summary of the RAGE Stakeholder consultation methodology, process, instruments and activities, which inform the development of accompanying work packages and ultimately the RAGE ecosystem sustainability and exploitation plan. The report should be read in conjunction with the accompanying RAGE Evaluation Methodology Report 8.1, (Steiner et al 2016) and is consistent with the research management and data guidelines contained within that report.

One of the challenges in undertaking the consultation process has been the need to combine two requirements:

- To carry out pragmatic and open consultation with industry from the perspectives of business development, marketing and knowledge transfer. This approach is needed in order to engage industry in meaningful discussion.
- To undertake scientifically robust research. This is needed in order to generate defensible and substantiated proposals and results

This dual focus was the primary motivation in selecting a mixed methodology approach to the consultation process.

This report contributes to the work of the RAGE project in two ways:

1) Identification of two key research questions to be addressed during the consultation process. These are focussed on challenging assumptions and methodologies in the development of potential business models, and in determining models of custodianship and governance for the post-project period.
   The concept of service design is introduced to inform the development of effective service-based business models. It is focussed on the notion of “desirability”, and is underpinned by three critical facets of effective service design, i.e. “utility”, “usability” and “pleasurability”. We explore the way in which service design will inform the development and deployment of RAGE outputs and services and validate our exploitation and sustainability plans.

2) Definition of a five-step process for consultation with the major stakeholders engaged in the development of the Applied Games industry in Europe, covering Industry, Education and Government. This process makes use of open interviews in order to solicit key issues to be explored in further detail through a formal structured questionnaire. Conclusions drawn from our detailed analysis of the data sets will provide the basis for a series of consultation workshops that will occur over the duration of the RAGE project. Further, the RAGE outputs and proposed ecosystem service model(s) will be presented during a series of roadshows to be undertaken during the final phases of the project.

A number of additional outputs will be produced as a result of the consultation. These include a European Applied Games Directory (EAGD) including details of the primary and secondary sources of data used to produce the directory.

Finally, the report includes a summary of the preliminary findings of step one of the consultation process. This is a collation of the responses and highlighting issues and considerations raised by industry representatives interviewed during the first twelve months of the project to the period April 2016.

The final outcomes of the consultation process, together with the combined informal and formal structured consultation activities, will inform parallel work packages in the RAGE project; specifically workpackage 8 (responsible for development of the evaluation framework) and workpackage 9 (concerned with exploitation and sustainability).
1 INTRODUCTION

This deliverable provides details of the establishment of a stakeholder consultation process with which to survey the Applied Games landscape.

One of the objectives of the RAGE project is to explore the market conditions required to prompt the release and sharing of assets by a variety of actors in the applied games industry, and to stimulate growth of an EU market in applied games. In undertaking this task, we note two features of the market.

Firstly, the leisure games industries have well defined established business models, described using the business model canvas (Osterwalder & Pigneur 2009) and clear routes to markets via historical retail value chains and emergent digital channels in the accompanying RAGE deliverables 7.1 and 7.2. It is such structures that we seek to establish in the applied games sector. We therefore ask if there are conditions that could influence the established leisure games industry to engage in a RAGE ecosystem, and whether RAGE could have a role in bridging between the two disparate segments of the games industry.

Secondly, the emergent applied gaming markets across the European Union are diverse and culturally complex, and this complexity is a potential barrier to market development. Applied games are produced through a complex interplay between academic researchers (who design many applications, and theorise their use), commercial organisations (who also design and market applications, and include many academic spin off companies), and governments (who have a central role in procurement in key sectors such as healthcare, the military and education). In recognition of this the project consortium has adapted the well-established triple helix model (Leydesdorf & Etzkowitz, 1998) in mapping out the systematic challenges and considerations presented by an applied gaming ecosystem. The model was developed in the context of knowledge-based economies, and it considers three ‘sub-dynamic’ interactions between Education, Industry and Government. Analysis will be carried out using established tools and the outputs of this consultation will inform task 7.5 and other associated work packages. The consultation activities are closely linked to and inform work in other areas of the project, specifically work package 8 (in the development adoption of the evaluation framework) and workpackage 9 (in the creation of the exploitation & sustainability plans).

The consultation process consists of five distinct aspects:

1. The first aspect of the consultation process has been a series of prearranged informal unstructured discussions and interviews with geographically distributed representatives of the three dimensions as suggested in the triple helix, Government, Education and Industry. This has been an on-going process that commenced in month one of the RAGE project, January 2015. The present report covers the period up to Month 15, April 2016.
2. The second aspect will be a structured questionnaire to be delivered to selected stakeholders commencing month 16 of the RAGE project, May 2016. The findings will be used to inform the development of a sustainability plan and proposed business model for the RAGE outputs and ecosystem.
3. The third aspect will be a series of workshops with selected stakeholder groups. These workshops will take place over the duration of the RAGE project, and will be used to validate or challenge the social and technical approaches applied to establish the RAGE ecosystem.
4. The fourth aspect will be the engagement of stakeholder groups as part of the development of a sustainability plan for the RAGE ecosystem portal, using a “service design” informed approach.
5. The fifth aspect will be the active engagement of the RAGE partners in Applied Industry roadshows and events over the period of the RAGE project.

Findings from these five distinct activities will be collated and used to inform future development of the RAGE assets and proposed ecosystem portal. Whilst the primary objective of this report is to summarise the methodology and approach to the consultation process we have included preliminary findings gathered during the phase of the consultation process.
1.1 The Relationship with the formal RAGE Evaluation processes.

The consultation processes highlighted within this document will form part of the formal evaluation activities being undertaken in support of the RAGE project. Full details of these activities are provided in the accompanying RAGE deliverable 8.1 "RAGE Evaluation Framework and Guidelines". In this deliverable we establish the way in which these activities will inform workpackage 7 in specific areas, and how the outcomes of formal evaluation work will be incorporated in the RAGE consultation activities.

The formal evaluation activities are structured as per the RAGE evaluation model (Figure 1), ensuring a robust systematic and comprehensive evaluation of Applied Games technologies. In line with the evaluation guidelines defined in WP8, the consultation activities described in this section will be based on empirical work with potential users of the system and or services. These activities, and in particular the "service design" activities, will significantly contribute to the representation of user perspectives in RAGE ecosystem development.

Figure 2: RAGE evaluation model

This stakeholder consultation is situated within workpackage 7 of the RAGE project, and therefore it concentrates on potential business models, value chains and work towards the development of a viable, sustainable ecosystem portal in support of the RAGE project objectives. To support this work, the focus of the stakeholder consultation is on the variables in column 2 of table 1 below. These questions will be framed within a service design development philosophy as outlined in section 1.2 of this report. Consequently, a further dimension, desirability, is introduced for consideration in developing questions relating to the user experience expectation.
1.2 Service Design Philosophy

It is essential that meaningful engagement with stakeholders occur in developing a sustainable RAGE offering post project, and service design has been adopted as the approach that will achieve this. In this we build on prior success with service design across a variety of contemporary digital commercial service industries (Stickdorn et al. 2011). The stakeholder consultation activities that are established in the course of this work will extend beyond the established researcher/subject relationship to become a constructive, meaningful engagement in the service design of the system. In this section we provide details of the rationale for the selection of Service Design philosophy to inform development and as a core principle of our engagement with stakeholder groups in developing the outputs, services and products that will be sustained from the RAGE project. For the purposes of this project we describe “Service Design” as an approach to the development of services with stakeholders that combines a rich variety of processes and tools from a number of academic and non-academic practice and disciplines.

Service design thinking is grounded on five core principles. These are:

1. Services are user centred and experienced from the users’ perspective(s).
2. Services are co-created with stakeholders involved in the design process.
3. Services should be sequenced and visualised a series of interrelated actions.
4. Services should be evidenced and the intangible should be visualised in terms of the physical
5. Services should be holistic with the entire service environment considered.

(Adapted from Stickdorn et al. 2011)

When considered from a service design perspective, the RAGE ecosystem can be seen as a series of interactions between the users and the service (eco)system. These interactions are mediated exclusively through a series of ‘touchpoints’ to form a journey map. Thinking of services from this perspective can be valuable in any service environment, but becomes increasingly important within digital environments involving social networks. Interaction design is widely adopted amongst industries and is employed by established digital Industry “actors” including the likes of Microsoft and Apple. It is argued (Stickdorn et al 2011) that at the core of interaction design in user contexts is the notion of desirability, which is what “fires the customer into action”. In our case it is desirability, we argue, that will sustain the ecosystem, evoking use, loyalty and trust with users.

There are three distinct dimensions to Desirability:

- **Utility**: the service actually does or offers to the user at a functional level.
- **Usability**: how easy it is to interact with the service.
- **Pleasurability**: as the term suggests, how pleasurable the interaction with the service is on an emotional level.

This service design approach is consistent with the formal evaluation process as detailed in figure 1 of this report, and is and easily integrated into it.
2 CONSULTATION PROCESS AND ACTIVITIES.

As discussed in section 1.2 it is critical to the success of the RAGE Project that effective and meaningful engagement with stakeholders occurs in order to ensure multiple perspectives are captured, contextualised and documented with rich qualitative data. In this respect we have chosen to adopt a mixed methodology approach to our research and consultation questions.

We define our mixed methodological approach as a five stage process:

1. Define the RAGE key consultation objectives.
2. Data collection and potential development of a working hypothesis.
3. Examine the data for consistencies, and for explicit and implicit patterns.
4. Analyse our findings.
5. Present our results for critique and to inform the RAGE ecosystem design.

2.1 RAGE key consultation objectives.

The key consultation objectives are to inform the RAGE project teams across all workpackages in achieving the goals of the project by validating or challenging the assumptions that were made in planning the development of RAGE service. The requirements of the consultation are twofold:

- To provide input and data as the basis for the development of a sustainable ecosystem and post-project exploitation plan, which necessarily involves engagement with the primary target audience for the outputs: the Applied Games development industry
- To provide input and data for further analysis and dissemination, and as the basis for academic outputs.

In addressing these requirements the consultation will solicit responses to key questions focussed on aspects of industry market intelligence, the operational business environments and operational requirements.

2.1.1 The Applied Games Industry Market Landscape

The RAGE project requires a deep understanding of the Applied Games operating environment in order to answer key questions that are critical to project success:

- What is the most effective characterisation of the market?
- What quantifiable distinctions between national, local and regional business models of operation can be identified?
- Is there evidence of policy being driven through the application of formal instruments, clustering of businesses or regional hubs within the value chain, discussed in the accompanying RAGE paper D7.2 Value Chain analysis?
- Is there evidence of regionally located organic growth, driven by informal relationships?
- Is there emerging evidence of convergence or divergence of the industries (building on the links between the established Leisure and Applied Games Industry discussed in D7.1 summary of Business models)?
- Are there identifiable sources of competitive advantage for these businesses, and how do these advantages manifest themselves in successful growing businesses? How can the RAGE ecosystem strengthen these competitive advantages?

Our understanding of the Applied Games market in Europe has been enhanced through the collation of a detailed European Applied Games “Directory (EAGD) this is addressed in section 2.1.2 of this report.
2.1.2 The European Applied Games Industry Directory (EAGID)

Study in the Applied Games domain is hampered by the absence of a comprehensive directory of Applied Games Businesses currently operating in Europe. Regional directories and a number of trade membership association listings exist, consequently it was determined that the RAGE project would produce a more comprehensive document. Work in compiling and creating the European Applied Games Industry Directory (EAGID) is led by RAGE partner INMARK, and builds on the previous work undertaken by the EU FP7 funded Games and Learning Alliance (GALA) network of excellence for serious Games project. The EAGD has been compiled using both primary and secondary data sources and details of the process are as follows:

**Step 1:** The Directory was compiled using existing lists of organisations active in the Applied Games Industry domain. The (secondary) sources of this data are listed below in section 2.1.4 of this report.

**Step 2:** An internal audit of the data gathered in step 1 was undertaken to identify any additional companies omitted from the data and to eliminate any data that should not be included within the directory. All partners provided input into this initial round of activity, which was completed in April 2016. To improve the quality and currency of the data the first provisional version of the document was segregated into individual member countries and provisionally verified by RAGE partners locally. An initial version of the Directory is available in Appendix One of this report.

**Step 3:** The Directory will be updated as further data emerges during the course of the RAGE project, and through these iterations it will become reliable enough for further dissemination activities and stakeholder’s consultation.

**Step 4:** The national associations and hubs identified within the directory will be candidates for further consultation activity over the course of the project. The Directory will be a dynamic document enhanced following such on-going consultation. To the degree that informed consent and licencing permits, the Directory will be made openly available to the contributing stakeholders, including industry, as an output of the RAGE project.

2.1.3 Primary Research Sources

The following list constitutes the sample of industrial primary research sources that engaged in discussion with RAGE project team in the first phase of the consultation process during the first twelve months of the project. This engagement is the basis of the interim findings presented in this report.

1. NuroGames  
   Country of origin: Germany
2. Gameware  
   Country of origin: United Kingdom
3. Optix  
   Country of origin: United Kingdom
4. Gamefabriq Gambh  
   Country of origin: Germany
5. BIP Media  
   Country of origin: France
6. Neko Entertainment  
   Country of origin: France
7. RANJ Serious Games  
   Country of origin: Netherlands
8. Wingz Studio  
   Country of origin: Portugal
9. Testaluna  
   Country of origin: Italy
10. EA Mobile RO  
    Country of origin: Romania
11. Oneclick Desano software  
    Country of origin: Italy
12. Geomotion Games SL  
    Country of origin: Spain
13. Serious Games Intl  
    Country of origin: Denmark
14. RPPL Digital  
    Country of origin: United Kingdom
15. Mint  
    Country of origin: United Kingdom
16. Arctic Shores  
    Country of origin: United Kingdom
17. BSim UK  
    Country of origin: United Kingdom
18. Playgen UK  
    Country of origin: United Kingdom
19. Imperia Online  
    Country of origin: Bulgaria
20. Tri Soft (.net)  
    Country of origin: Bulgaria
21. Bohemia Interactive  
    Country of origin: Czechoslovakia
2.1.4 **Secondary Research Sources.**

A detailed list of secondary research sources referenced as part of the consultation process is provided in Appendix 1 of this report. The sources were used in compiling the (provisional) European Applied Games Industry Directory (EAGID) discussed in section 2.1.2 of this report.

2.1.5 **The Drivers and Demand**

Informal evidence suggests that over the next decade there will be increasing demand for applied games in Europe. As argued in other recent RAGE deliverables (Hollins, P. et al 2016) (Riestra, R. et al 2016) we expect that growth will continue, specifically in the military, health, professional and business domains. This perceived increase in demand should be the primary driver for the expansion and further development of the industry, and in order to articulate this the RAGE consultation will identify and investigate the potential impact of sub segments of the domain of applied games.

2.1.6 **The competitive Applied Games Landscape**

The Applied Games Industry in Europe is less developed and experiencing lower growth levels than North America and the Asia Pacific region, with European markets largely supported by state funded interventions (see (Hollins et al 2016) for a further discussion of this trend). The RAGE consultation process will aim to determine if market distinctions between, in particular North America and Europe, could impact on the viability and sustainability of the RAGE ecosystem and future business model.

For the RAGE project a question of particular importance is whether there is a competitive market for asset based products and services to Applied Games developers. The asset-based business model has been adopted by other commercial businesses operating in the Applied Games Domain, and it is important to consider the extent to which the fully operational RAGE ecosystem will be a competitor for other commercial products, middleware and services or informal groupings. The most established and successful example is the Unity Asset Store. In the first quarter of 2016 there were over 220,000 Unity based games with 4.2 billion installs on 1.7 billion devices with over 31% of these installations in one country, China. The largest market in Europe for Unity based games is the United Kingdom, with 2.1% of installations. (Cheng 2016)

![Figure 2: The Top 10 Countries with total (Unity) Game installs source : Unity Analytics](image)

Key questions which will contribute to our understanding of the developments on the demand side of the industry include:

- Who are the potential stakeholders and customers of the ecosystem and what characteristics do they exhibit?
- Are these stakeholders likely to encompass a variety of digital industries?
- Will we see, as indicated in our preliminary findings in Germany and the Netherlands, organisations that embrace both the leisure and applied games industries.
Industrial Demand

To ensure the ecosystem has longevity beyond the scope of the existing EU H2020 funding, RAGE must develop a strong value proposition in collaboration with its stakeholders. This proposition will address the “pain” or potential “gain” perspective for users. The pain points could for example be focused on assets for ease or cost reduction in the development process or to address challenges around the pedagogic affordance or integrity of their games. The eight RAGE exemplars of games deploying assets are crucial in providing concrete demonstrations of assets incorporated, and support materials in active Applied Games activities, which can be used as a basis for this inquiry.

The overarching questions which will guide our investigation of industrial demand are:

- What will help stimulate consumption of the assets and creation of new assets for the ecosystem?
- How will the RAGE ecosystem be absorbed into the games production cultural landscape
  - existing business models through establishing trust and relationships?
  - through the introduction of disruptive new models and working practices?

These questions will be elaborated and explored as an integral element of the service design process and activities. The answers which are obtained will inform more specific strategic challenges facing the project, including:

- Are there potential collaborative partners that would be interested in working with the RAGE project
  - from industry?
  - from academia?
  - from education?
- How should the RAGE ecosystem portal offering be positioned in the business landscape?
  - as an infrastructure?
  - as a service provider?
  - as a combination of infrastructure and service provider?
  - as an asset provider bundling technical assets, pedagogic advice and implementation support?
  - as a window of opportunity for European based applied game developers?
- What services can the RAGE Portal offer that would be welcomed by the market
  - implementation support?
  - translation and/or localisation of products?
  - who are the potential clients, and how should the ecosystem be marketed?

2.2 Data collection and hypothesis formation

In this section we discuss the data gathering activities that will address our two key research questions. A working hypothesis will then be developed, to be tested and validated in workshops.

2.2.1 Discussions with relevant stakeholders.

Our initial consultation has consisted of a series of open interviews with internal and external stakeholders, with a focus on two distinct stakeholder groups:

- The European based applied games development community
- Academic groups focused on applied games or the broader definition of serious games.

In preparation for the structured questionnaire discussed in section 2.2.2 below, we have characterised stakeholders are segmented in three distinct groupings based on the triple Helix (Leydesdorf, L. Etzkowitz 1998), Industry, Government and Education.

Primary Industrial Stakeholder groups:
- **Applied game developers**: Those businesses whose primary area of activity is the development of Applied Games. This group may both create and consume RAGE assets.
- **Applied & Leisure developers**: Those whose business is the development of both Applied and Leisure games. This group may both create and consume RAGE assets.
- **Leisure game developers**: Those whose primary business is the development of Leisure games. This group may both create and consume RAGE assets.
- **Educational Content developers**: Those whose primary business is the development of educational content (traditional and electronic). This group may create RAGE assets, but are more likely to consume them.
- **Training Providers**: Those whose business is the implementation of Applied Games in training scenarios.

Primary Agency and **Governmental** Stakeholder groups:

- **National and regional government** as provider of industrial development support funding.
- **The European Commission** as the provider of funding through the Horizon 2020 and as a hub of European innovation networks and initiatives.
- Government sponsored and regional industrial support and innovation activity hubs.

Primary academic and or **Educational** Stakeholder groups:

- **Academic institutions** consisting of both Universities and colleges within the RAGE project consortium as asset contributors and case studies pilot studies.
- **European Universities and tertiary colleges** interested in developing and contributing assets to the ecosystem portal. (Either with or without project funding and support to do so)
- **European Universities** interested in contributing, scientific research outputs support and pedagogic materials and use cases for the assets.

The stakeholder segmentation described above will be further in targeting RAGE outputs, and in particular in representing RAGE assets on the ecosystem portal. There are a number of additional stakeholders not categorized within the above definitions, who are at this stage deemed to be peripheral to the objectives of RAGE. These include technology platform holders, games platforms, console manufacturers, etc.

### 2.2.2 Stakeholder Consultation Structured Questionnaire.

The next phase of the stakeholder consultation is the design and the development of a structured questionnaire. This questionnaire is not intended as a self-administered questionnaire to be completed by stakeholders, but rather a collection of questions that will be used for carrying out structured interviews. As of writing in April 2016 development of the questionnaire is underway, starting with the industrial stakeholder group. This questionnaire exists in draft form, and questions draw on the key provisional themes and issues raised within this document.

**Assumptions**: The following assumptions were made in developing these provisional questions:

- The technical assets will be; “authentic”, high quality and industrial strength.
- The assets are relevant to the stakeholder groups.
- The assets will be deployed by the stakeholder groups.
- The technical assets (where licensing permits) are accessible and will be open source.
- A viable business model is achievable and established for the ecosystem portal.
- The supporting pedagogic materials are of high quality.
- The technical assets are interoperable across all major platforms.
- The assets will save on development costs.
Provisional questions for industrial stakeholder groups, to be designed and structured within the RAGE evaluation framework:

1. Who are the potential users of the RAGE ecosystem portal?
2. Do the assets enhance game development?
3. How relevant are the assets for your application scenario?
4. Can the assets easily be included in game development?
5. Which benefits do the assets bring to applied games?
6. What constitutes an asset of industrial strength?
7. Is the availability of assets as open source software success critical or problematic?
8. Is the availability of assets as proprietary software success critical or problematic?
9. Is the ecosystem portal essential to take up and use of assets?
10. How critical is the provision of supporting technical content to use of the assets?
11. How critical is the provision of supporting pedagogic material to use of the assets?
12. How should the benefits of asset use be articulated to users?
13. How does RAGE engender “trust” in its business offering?
14. Would you be willing to participate in future RAGE service design workshops?
15. What should a RAGE ecosystem portal look like?
16. Who should “own” or be custodian of the RAGE ecosystem portal post project funding?
17. Would you consider direct involvement in the future ecosystem portal?
18. Should the RAGE assets be called assets or something else?
19. Should RAGE assets be made available on existing commercial stores?
20. Do your games integrate or interoperate with learning management systems?
21. Do you perceive a role for RAGE on coordinating future asset production?
22. Would you be willing to contribute future assets to the RAGE ecosystem portal?
23. Under what conditions would you be interested in contributing assets to the RAGE ecosystem portal?
24. Do you perceive the RAGE ecosystem portal as competition to existing commercial offerings?
25. Do you consider the TAGE ecosystem portal as complimentary to existing commercial offerings?
26. What is your understanding of the term ‘business model’?
27. Is there an alternative language or term the RAGE project should be using?
28. Would you be interested in participating in RAGE community (online and face to face) activities?
29. Should the RAGE portal position itself as providing pedagogic authority in applied games?
30. Should the RAGE portal provide information on support and consultancy services to industry?
31. Are there regional differences you can identify in the applied games across Europe?
32. How Should the RAGE ecosystem portal recognise regional differences in Europe?
33. Should the RAGE ecosystem portal be localised to recognise regional distinctions in Europe?
34. Do you see any convergence between the leisure and applied games industries?
35. Should the ecosystem portal provide and direct users to current research in the applied games domain?
36. How would you describe the nature of your business?
37. Is the distinction we suggest in the RAGE project between applied and leisure games developer useful?
38. Is the RAGE brand fit for purpose?
39. How is the impact of the current economic environment impacting on your applied game business?
40. Is government/public sector sponsorship and priming essential to the development of your applied games business?
41. Do you identify new markets emerging for applied games?
42. Do you see a competitive advantage in adopting RAGE assets?
43. Do you believe the RAGE asset approach will stimulate demand for applied games?

Dedicated questionnaires are to be developed for other stakeholder groupings for both Governmental and Educational domains.

2.2.3 Stakeholder Consultation Workshops.
The RAGE project will undertake a series of stakeholder workshops across Europe. The content of these workshops will be determined by the findings of the structured questionnaires, though it is our expectation the workshops will be used to validate and or challenge the findings of our research. The workshops will apply a service design philosophy as described in section 1.2 of this report and involve iteration of the key concepts presented and thereby identifying the critical touchpoints of the service through modelling personas as they travel through the journey map identified in section 1.2 of this report.

Two initial workshops are planned for 2017 at the European Computer Games Based Learning Conference (ECGBL) and the Irish Computer Games Based Learning Conference (IGBL) in 2017. Where possible workshops will be targeted at specific, segmented stakeholder groups as defined in 2.2.1 of this report.

2.3 Examination of the data

The next stage of the process will be the examination and evaluation of all data collected from our research, namely interviews, formal questionnaires and workshop activities. The data will be analysed with instruments designed to identify and expose significant text, sentiment and data, in order to highlight patterns and consistencies.

We will then present the findings of our consultation. Firstly internally to the RAGE project partners to inform the workpackages and thereby to satisfy the objectives of the consultation activity as highlighted in section 2.1. Secondly the results will be presented widely in a series of RAGE roadshows to the project collaborative stakeholder groups involved in the consultation and associated activities.

Finally the results will be presented as scientific outputs in journals and conferences that have been designated as the approved outlets of the RAGE project.

2.3.1 Summary of Interim Findings (April 2016)

At the time of writing our research activities are at an early phase, but it is possible to summarise some preliminary findings, drawing on the unstructured interviews and consultation activities undertaken with industry and industrial partners as listed in section 2.1.3. The interviews were conducted during the first fourteen months of the RAGE project.

Included are organisations with specific perspectives regarding commercial value of assets and the games produced with them. Many have vested interests in the proprietary nature of software development. A number of the organisations interviewed are restricted in the information they were able to provide regarding their operating environments, for instance the military. This is recognised as problematic in effectively undertaking research within this domain. The interviews were of varying duration and undertaken by key members of the RAGE WP7 team.

These findings will inform the next phase of the consultation process and the data is drawn from the notes and where available transcripts of interviews. The findings that we summarised below are preliminary, but several significant pointers have emerged that will help inform the next phases of the consultation processes.

When researching the game market, it has been challenging to identify those companies that are active in the applied games space. Our reliance on self-identification and the lack of clear distinctions between aspiration and activity are particular concerns. These in turn expose issues about the limits of reliability of this study at this early stage of market development. For example, amongst games companies in the Netherlands a number of interviewees self-declared themselves “active” in applied games whilst in the United Kingdom convergence on this scale between the leisure and applied games industries activity was neither self-declared nor observable. This also raises the legitimate question of regional variances in market landscapes, which will be addressed in the formal questionnaire as detailed in section 2.2.2 of this report.
Most interviewees were comfortable with the concept of an asset-based approach to development, and the smaller development studios were particularly supportive of the approach adopted by the RAGE project. The majority of the smaller studios were used to working with middleware, and Unity was cited by many as their preferred choice of middleware supplier. The Unity store was also highlighted as being extremely effective as a source of both supply and services focussed on middleware asset usage. There was a sense, from some interviewees, that Unity was perceived as much more than merely a supplier or store, with great value placed on what was described as the “Unity community”. Social interaction with peers was highlighted as being of real value to developers as was a space where developers could share concerns and ideas related to the application of Unity assets.

Some terms and/or notions used by RAGE were not recognised by the development studios interviewed, or were used with other connotations, and this could create difficulties in engaging with industrial partners. The RAGE term ‘asset’ had clear connotations for industry development and this shaped their expectations of the functionality of the RAGE assets. Other problematic terms were ‘ecosystem’ and ‘pedagogy’. In addition to the ambiguity caused by language questions focused on ‘business models’ presented challenges to the industrial partners, many of whom were unfamiliar with the rationale, concepts and language of business modelling. For example, terms presented such as ‘channels to market’ and ‘value propositions’ required extensive elaboration. This has served to highlight the consistent use of language in our future research activities is critical to engagement with diverse groups. This will, be addressed in the design and development of the formal questionnaire about to be undertaken.

The targeted benefits of the RAGE approach such as reduction in production costs and the potential for better quality pedagogic affordances were identified and understood by those interviewed. These benefits were described as “potential cost reductions in development” and “improvement in the learning effectiveness of games”. The word pedagogy was not used by any one of over fifty interviewees. The “increase the functionality embedded within Applied Games” was highlighted as a perceived benefit as was “an accessible repository of learning assets”.

Responses identified intellectual property (IP) as the key defining value asset of games companies, which are working in an environment that requires them to develop proprietary IP that can be exploited in a range of products and for a variety of clients.

Questions were raised as to why the ecosystem (or at least the ecosystem portal) had been developed when “partnerships with existing commercial platforms could be an option”. There was overall a very positive industry response to the RAGE proposition that, where possible and licence permitting, assets would be available as open source software. This is indicative of a broader acceptance of the validity, trustworthiness and effectiveness of open source development processes and software across the digital industries globally, and the rapid growth of open source development communities.

Conversely issues of interoperability, addressed in workpackages one and two of the RAGE project were largely seen as “unimportant” to those industry representatives interviewed. What was identified as of concern to them was that the asset provided useful functionality. Importantly those interviewed demanded that assets should be easily integrated into their specific game product or application, as opposed to being ‘interoperable’ in a wider sense across multiple systems and platforms.

Concerns relating to interoperability were focused exclusively on inter-asset interoperability, and particularly on technical dependencies between assets, rather than interoperability or integration with external systems, such as a Learning Management Systems (LMS) or Virtual Learning Environments (VLE). These observations could inform working hypotheses for the development of a future business model for the RAGE ecosystem.

Industrial partners expressed an entrenched concern regarding the authenticity and performance of assets produced “outside of industry”, in particular from the educational sector and identified in interviews as perceived “pet research” projects of institutions. Similarly the issue of “industrial strength” assets was raised by two of the respondents based on the perception that assets developed by universities supported by (research) project funding would “not be robust enough to operate in the commercial world”. This perception has informed our approach, which highlights the trust that industry
must place in an externally funded “organisation” providing assets developed outside the industry norm. This highlights issues that are critical to the sustainability of the ecosystem, and has implications for issues of ownership and governance post project funding.
3 CONCLUSIONS

This report has elaborated on the five-step approach being taken to stakeholder consultation. This approach effectively addresses the challenge of crossing the chasm between the three contributing facets of innovation: government, industry and education. The need has been identified to balance the often conflicting requirements between, on the one hand, the pragmatic and agile methods of the applied games industry and, on the other hand, the need for robust scientific research, development and outputs in the RAGE project. This problem is mitigated by the fact that the RAGE consortium itself provides a strong representative sample of the stakeholders critical to the long term sustainability and success of the project.

The first phase of the consultation process has been completed, consisting of a series of unstructured interviews conducted with industry, and this report has provided a summary of the initial results. These findings have been incorporated, in collaboration with partners in RAGE workpackage 8, into the development of focused and scientifically robust research questions. These research questions will in turn inform the other associated workpackages of the Rage project, specifically in the areas of business modelling, evaluation, sustainability and exploitation plans.

We have concluded from the first phase of the process that establishing the ecosystem as a clear point of reference for the European applied games industry will be challenging, both conceptually and also in terms of existing business models and practices. The establishment of the RAGE ecosystem will be disruptive and prompt some rethinking in the industry in respect of key areas such as interoperability in the context of the practice of applied games developers and their approach to future, exploitable, Intellectual Property Rights (IPR).

The second phase will involve the completion of formal interviews, with representative samples from the three stakeholder groups as highlighted in section 2.2.1 Industry, Government and Education. These interviews will be undertaken over the next twelve to eighteen months of the RAGE project.

The third phase of the process will be a series of workshops where our initial findings can be tested, challenged and/or validated, and then developed further in the fourth phase. This will incorporate a collaborative approach, applying a service design philosophy and a co-design approach to future development of the ecosystem. Service design will be at the core of the business modelling activities, sustainability and exploitation plans to be developed within the project. In particular work will reference the five key principles of the approach: user centred, co-created, visualised, evidenced and critically holistic in approach.

Further consultation will occur during dissemination via a series of RAGE roadshows, aimed at the applied games industry and to be undertaken during the final twelve months of the project. The development of the roadshow style and content will be carried out in the light of the research findings of phase 2 of this consultation processes. The roadshows will also provide a further opportunity to refine the RAGE offerings.

The RAGE consultation process extends for the duration of the project, with the activities detailed in this report to be undertaken throughout the life of the project and in harness with the formal evaluation of the project outputs and assets. The consultation activities have a clear purpose and employ a mixed methodology. This approach is entirely consistent with other work-packages within the project and has been developed in the knowledge that findings will be evaluated using the RAGE project evaluation framework.
4 REFERENCES


## 5 APPENDIX 1

### European Applied Games Industry Directory (EAGiD), Version 1.0

<table>
<thead>
<tr>
<th>Organisation</th>
<th>State</th>
<th>Description</th>
<th>Web (accessed April 20th, 2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Digital Industries Games Research Association (DIGRA)</td>
<td>Global</td>
<td>Established in 20003 DIGRA is a global association of academics from a variety of disciplines active in research across the digital games Industries.</td>
<td><a href="http://www.digra.org/">www.digra.org/</a></td>
</tr>
<tr>
<td>2. AESVI</td>
<td>Italy</td>
<td>AESVI (Italian Videogame Developers Association Publishers) is the industry association representing the category of video games console manufacturers, publishers and game developers operating in Italy.</td>
<td><a href="http://www.aesvi.it">www.aesvi.it</a></td>
</tr>
<tr>
<td>3. AMETIC</td>
<td>Spain</td>
<td>The Association of Electronics, Information and Communications Technologies, Telecommunications and Digital Content Companies (AMITIC), champions the interests of the Spanish businesses in a hyper-sector that is varied, dynamic and, with 30% of private research and development investment.</td>
<td><a href="http://www.ametic.es">www.ametic.es</a></td>
</tr>
<tr>
<td>4. Asociación de Gamification y Marketing Digital (ANAGAM)</td>
<td>Spain</td>
<td>ANAGAM provides the meeting point for professionals, companies, researchers and teachers interested in the value and the potential of Gamification and other new tools and trends in the digital society.</td>
<td><a href="http://www.asociaciongamificacion.com">www.asociaciongamificacion.com</a></td>
</tr>
<tr>
<td>5. Atlan Games</td>
<td>France</td>
<td>Bases in France and with 35 member companies. Atlangames aims to represent the sector across the great West region of France. Since 2015, Atlangames has offered co-working space to accommodate young Nantes studios and freelance workers.</td>
<td><a href="http://www.atlangames.com">www.atlangames.com</a></td>
</tr>
<tr>
<td>6. Basquegame</td>
<td>Spain</td>
<td>Basquegame groups together the companies from the Basque video game sector and has emerged from the analysis of company requirements, development studies, training</td>
<td><a href="http://www.gaia.es/Basquegame.html">www.gaia.es/Basquegame.html</a></td>
</tr>
<tr>
<td>No.</td>
<td>Organisation</td>
<td>Location</td>
<td>Description</td>
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<tr>
<td>7.</td>
<td>Belgian Games</td>
<td>Belgium</td>
<td>This organisation supports the Belgian-based game companies in order to raise their profile across the world.</td>
</tr>
<tr>
<td>8.</td>
<td>Business Oulu</td>
<td>Finland</td>
<td>This network brings together digital content creators in the Oulu region.</td>
</tr>
<tr>
<td>10.</td>
<td>Cologne Game Lab (CGL)</td>
<td>Germany</td>
<td>Cologne Game Lab (CGL) promotes the research and development of interactive content, including digital games, playful software applications as well as interactive film and TV formats. By constantly challenging the creative responses towards authorship, audiovisual design and development, CGL aims to bridge the gap between interactive art, entertainment and learning.</td>
</tr>
<tr>
<td>11.</td>
<td>Die Mediengesellschaft Niedersachsen/Bremen mbH, BIU</td>
<td>Germany</td>
<td>The German Trade Association of Interactive Entertainment Software (BIU) represents the interest of providers and producers of entertainment software in Germany. The association and its 25 members represent over 85 % of the market for computer and video games in Germany.</td>
</tr>
<tr>
<td>12.</td>
<td>Dutch Game Garden</td>
<td>Holland</td>
<td>The Dutch Game Garden's mission is to create employment and stimulate economic growth by the games industry in the Netherlands. Through their facilities and services, they help startup game companies establish themselves, promote the studio growth and further the development of high quality games.</td>
</tr>
<tr>
<td>13.</td>
<td>Dutch Games</td>
<td>Holland</td>
<td>The Dutch Game Association was established to support the</td>
</tr>
<tr>
<td>Association (DGA)</td>
<td>Dutch Game industry in terms of collaboration, support and solutions. The association provides value to members in areas including development, research, inspiration, value networks, entrepreneurship and service.</td>
<td>association.nl</td>
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<tr>
<td><strong>14. European Alliance for Innovation (EAI)</strong></td>
<td>Europe</td>
<td>Founded in 2010 and located in Belgium the European Alliance for innovation is a professional non-profit organization established in order to promote fruitful research and provide help to ensure innovation reaches markets through supporting community collaboration.</td>
<td><a href="http://www.eai.eu/transaction/serious-games">www.eai.eu/transaction/serious-games</a></td>
</tr>
<tr>
<td><strong>15. Flemish Games Association</strong> FLEGA</td>
<td>Belgium</td>
<td>This is the official Flemish Games Association</td>
<td><a href="http://www.flega.be">www.flega.be</a></td>
</tr>
<tr>
<td><strong>16. Game Area Frankfurt</strong></td>
<td>Germany</td>
<td>The gamearea-frm e.V. is a regional initiative to promote and support the development of digital entertainment. Their aim is to raise awareness of the games industry within the region and to improve the communication between each other and to the outside.</td>
<td><a href="http://www.gamearea-frm.de">www.gamearea-frm.de</a></td>
</tr>
<tr>
<td><strong>17. GAME Bundesverband e.V.</strong></td>
<td>Germany</td>
<td>The Federation of German Games Industry e.V. (GAME) is the association of the German computer and video games industry. The association represents more than 100 members, including the vast majority of companies operating in Germany in the field of computer games development and marketing.</td>
<td><a href="http://www.game-bundesverband.de">www.game-bundesverband.de</a></td>
</tr>
<tr>
<td><strong>18. Game Republic</strong></td>
<td>UK</td>
<td>Established for over a decade, Game Republic is a network of game development businesses, spanning those organisations engaged in all aspects of the Game industry from both the applied and leisure games sectors, based in the Leeds region in the North of England.</td>
<td>gamerepublic.net</td>
</tr>
<tr>
<td>No.</td>
<td>Organization Name</td>
<td>Region</td>
<td>Description</td>
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<tr>
<td>20</td>
<td>Games And Learning Alliance (GALA)</td>
<td>Europe</td>
<td>This is a network of excellence created as a result of the EU funded FP7 project and formed the basis of the initial list of organisations active within the domain.</td>
</tr>
<tr>
<td>21</td>
<td>Games Austria</td>
<td>Austria</td>
<td>Games Austria aims to help create a healthier and stronger games sector in Austria and the larger Central European Area by connecting game developers, growing the games sector and increasing its visibility.</td>
</tr>
<tr>
<td>22</td>
<td>Games Eden</td>
<td>UK</td>
<td>Games Eden is an established network of games related organisations situated in the Cambridge region of the United Kingdom.</td>
</tr>
<tr>
<td>23</td>
<td>GAMESCOM</td>
<td>Global</td>
<td>This provides a detailed list of Exhibitors for the 2015 Gamescom Exhibition.</td>
</tr>
<tr>
<td>24</td>
<td>HAMAC (Hellenic Association of Mobile Applications Companies)</td>
<td>Greece</td>
<td>The Hellenic Association of Mobile Applications Companies (HAMAC), represents a vibrant sector of more than 80 high-tech companies whose activities include the development of added value mobile applications, the provision of added value services for telecommunication providers, the provision of innovative communication, content and application services.</td>
</tr>
<tr>
<td>25</td>
<td>Helsinki Institute for Information Technology (HIIT)</td>
<td>Finland</td>
<td>The Helsinki Institute for Information Technology (HIIT) is a joint research institute combining the Aalto University and the University of Helsinki for basic and applied research on information technology.</td>
</tr>
<tr>
<td>26</td>
<td>Interactive Software Federation of Europe</td>
<td>Europe</td>
<td>The Interactive Software Federation of Europe represents the interests of the video game publishers within the European Union and other international organisations.</td>
</tr>
<tr>
<td>27</td>
<td>Joensuu Science Park</td>
<td>Finland</td>
<td>The Joensuu Science Park Ltd. develops business life in and around Joensuu in Finland by offering high-quality facilities and business development services to support company growth.</td>
</tr>
<tr>
<td>No.</td>
<td>Organization</td>
<td>Country</td>
<td>Description</td>
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<tr>
<td>28.</td>
<td>Kavio Cluster</td>
<td>Finland</td>
<td>The Kavio cluster represents the interests of the Game industry in and around the Kainuu region of Finland.</td>
</tr>
<tr>
<td>29.</td>
<td>Mimos - Italian Modelling and Simulation Association</td>
<td>Italy</td>
<td>The term Simulation is considered in a broad sense, including the traditional training systems including flight, driving and ship navigation simulations in particular those, in rapid development, related to Virtual Reality, Synthetic Environment and Virtual Prototyping, and to software modelling in the broadest applications.</td>
</tr>
<tr>
<td>30.</td>
<td>NEOGAMES</td>
<td>Finland</td>
<td>Neogames is a member-based non-profit game industry organization. Their mission is to accelerate, coordinate, and support the development of a Finnish game cluster. Their primary function is to connect industry players and serve their shared interests.</td>
</tr>
<tr>
<td>31.</td>
<td>New Economic Models &amp; Opportunities for Digital Games (NEMOG)</td>
<td>UK</td>
<td>This is a major United Kingdom based research initiative centered at the University of York investigating the business models associated with Leisure and Applied games.</td>
</tr>
<tr>
<td>32.</td>
<td>Oulu Game Lab</td>
<td>Finland</td>
<td>Oulu game lab is a training and development program tailored to meet the needs of the gaming industry. Established in 2012 at the University of Applied Sciences in Finland, Oulu Game Lab supports the development of game prototypes/products and start-ups.</td>
</tr>
<tr>
<td>33.</td>
<td>SEGAN</td>
<td>Europe</td>
<td>The main objective of the SEGAN network is to create a stable (but expanding) consortium to exchange ideas and experiences related to Serious Games.</td>
</tr>
<tr>
<td>34.</td>
<td>Serious Game Society (SGS)</td>
<td>Europe</td>
<td>The Serious Games Society (SGS) core purpose is to foster technological innovation and excellence in the field of Serious Games and Gamification. The SGS fosters research and</td>
</tr>
</tbody>
</table>
technology transfer between research, industry and education across the multiple disciplines involved in SGs design, development and deployment. The SGS provides a platform at European and international level for generation, promotion and co-ordination of Serious Games related activities, including research, marketing, corporate training and university education. The SGS promotes the development and use of Serious Games across sectors (health, business, cultural heritage, etc.) and contexts of use (formal education, corporate training, leisure time).

<table>
<thead>
<tr>
<th>Number</th>
<th>Organisation</th>
<th>Location</th>
<th>Description</th>
<th>Website</th>
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</thead>
<tbody>
<tr>
<td>35.</td>
<td>Serious Games industry</td>
<td>Global</td>
<td>The Seriousgamesindustry.com is a website covering issues relating to the business of gamification and serious gaming.</td>
<td><a href="http://www.seriousgamesindustry.com">http://www.seriousgamesindustry.com</a></td>
</tr>
<tr>
<td>36.</td>
<td>Serious Games Institute (SGI)</td>
<td>UK</td>
<td>Based at the University of Coventry in the United Kingdom the Serious Games Institute is an International Centre for Excellence in Serious Games Applied Research, Business Engagement and Study</td>
<td><a href="http://www.seriousgamesinstitute.co.uk">www.seriousgamesinstitute.co.uk</a></td>
</tr>
<tr>
<td>37.</td>
<td>SGC Finland</td>
<td>Finland</td>
<td>The Serious Gaming Cluster Finland is a network of companies developing products with a primary purpose other than Leisure games. Their focus is on five sub-clusters of Learning, Wellbeing, Environment, Gamification and Simulation.</td>
<td><a href="http://www.seriousgamingcluster.fi">www.seriousgamingcluster.fi</a></td>
</tr>
<tr>
<td>38.</td>
<td>t2i Technology Transfer and Innovation</td>
<td>Italy</td>
<td>‘t2i technology transfer and innovation’ is the innovation agency established by the Chambers of commerce of Treviso, Verona and Venice in Italy. Established in 2014 through the merger of activities, projects, personnel and facilities of two entities: ‘Treviso Tecnologia’ and ‘Polesine Innovazione’. In 2016 ‘Verona Innovazione’ joined t2i thereby extending the services to the Verona district.</td>
<td><a href="http://www.t2i.it">www.t2i.it</a></td>
</tr>
<tr>
<td>39.</td>
<td>The e-learning list</td>
<td>Global</td>
<td>Organisations in this directory are engaged in training offering a range of online training solutions including courses, learning</td>
<td><a href="http://www.elearninglist.com">http://www.elearninglist.com</a></td>
</tr>
</tbody>
</table>
management systems, mobile learning solutions some of these are active in the Applied games domain

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<tbody>
<tr>
<td>40.</td>
<td><strong>The Gamification Research Network</strong></td>
<td><strong>Global</strong></td>
</tr>
<tr>
<td>41.</td>
<td><strong>The Independent Games Developers Association (TIGA)</strong></td>
<td><strong>Europe</strong></td>
</tr>
<tr>
<td>42.</td>
<td><strong>Training Industry, INC.</strong></td>
<td><strong>Global</strong></td>
</tr>
</tbody>
</table>