



WP8 – Use Cases: SAM in Action

D8.4.2: Use Case Validation and Feedback (final version)

Deliverable Lead: UoR

Contributing Partners: UoR, NTUA, BDS, DW, TIE, TPVI

Delivery Date: 2016-12

Dissemination Level: Public

Final

This deliverable documents the evaluation methods and evaluation results of the user evaluations carried out in the SAM project. Furthermore, it provides feedback and identifies best practices and recommendations for third parties involved in using the SAM platform or working with or on a similar platform.



Document Status	
Deliverable Lead	UoR
Internal Reviewer 1	Apostolos Apostolidis, Talkmatic, 18.11.2016
Internal Reviewer 2	Vadim Chepegin, TIE, 08.12.2016
Type	Deliverable
Work Package	WP8 – Use Cases: SAM in Action
ID	D8.4.2: Use Case Validation and Feedback (final version)
Due Date	10.2016
Delivery Date	12.2016
Status	Final

Document History	
Versions	V0.0: UoR, document creation V0.1: UoR, added table of contents V0.2: UoR, added initial content sections 1, 2, 3, 4, 6, 7 V0.3: TALK, added initial content Section 5 V0.4: UoR, updates throughout V0.5: UoR, BDS, DW, updates with additional evaluation outcomes V0.6: UoR, updates and formatting throughout V0.7: UoR, added review of TALK responses, addition of LOPD letters V0.8: UoR, updates in order to address reviewer comments V1.0: UoR, final additions and updates
Contributions	UoR: Atta Badii, Marco Tiemann – Document creation, all sections TALK: Apostolos Apostolidis – Section 5 BDS: Barry Smith – Section 3 DW: DW Team – Section 3, Section 4

Disclaimer

The views represented in this document only reflect the views of the authors and not the views of the European Union. The European Union is not liable for any use that may be made of the information contained in this document.

Furthermore, the information is provided “as is” and no guarantee or warranty is given that the information is fit for any particular purpose. The user of the information uses it at its sole risk and liability.

Project Partners



TIE Nederland B.V., The Netherlands



Ascora GmbH, Germany



Talkamatic AB, Sweden



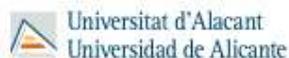
TP Vision Belgium NV, Belgium



Institute of Communication and Computer Systems, National Technical University of Athens, Greece



The University of Reading, UK



Universidad de Alicante, Spain



Deutsche Welle, Germany



Bibliographic Data Services Limited, UK

Executive Summary

This deliverable documents the evaluation methods and evaluation results of the user evaluations carried out as part of Work Package 8 of the SAM project. It describes the evaluation setups, procedures and outcomes for each of the evaluations carried out. This includes evaluations involving professional users as well as evaluations carried out involving potential end users of the system.

Each section reports on a specific form of user evaluation that was carried out. All sections follow the same general outline: overview of the evaluation, description of the method employed, report of the results, discussion of the results and conclusion.

This deliverable furthermore summarises the outcomes of the various user evaluations with a view to providing feedback and identifying best practices which can serve as recommendations for further development of the SAM platform as well as for third parties involved in using the SAM platform or involved in developing systems that include similar functionalities to the SAM platform.

Unlike many other deliverables in the SAM project, this deliverable is not an extension of the previous deliverable D8.4.1, but a standalone deliverable reporting the evaluation findings.

Table of Contents

1	Introduction	7
1.1	SAM Project Overview.....	7
1.2	Deliverable Purpose, Scope and Context.....	7
1.3	Document Status and Target Audience.....	8
1.4	Abbreviations and Glossary.....	8
1.5	Document Structure.....	8
1.6	External Annexes and Supporting Documents	8
2	Evaluation Activity Overview.....	10
2.1	Production Scenario	10
2.2	Prosumption Scenario	10
2.3	Evaluation Approach and Scope of Lessons Learned	11
3	Production Scenario Evaluation	12
3.1	Overview	12
3.2	Method	12
3.2.1	Setup and Procedure.....	12
3.2.2	Tasks.....	13
3.2.3	Questionnaires, Interviews and Observations	13
3.3	Evaluation.....	13
3.3.1	Participants.....	13
3.3.2	Responses	13
3.4	Discussion	22
4	Prosumption Scenario Evaluation	24
4.1	Overview	24
4.2	Method	24
4.2.1	Setup and Procedure.....	24
4.2.2	Tasks.....	25
4.2.3	Questionnaires and Observations	26
4.3	Formative Evaluation.....	26
4.3.1	Using the SAM App	26
4.3.2	Using the SAM Chat.....	28
4.3.3	Using the SAM Communities.....	29
4.3.4	Using the SAM App	31
4.4	Summative Evaluation.....	34
4.4.1	Using the SAM App	34
4.4.2	Using the SAM Chat.....	39
4.4.3	Using the SAM Communities.....	41
4.4.4	Using the SAM App	42
4.5	Discussion	45
4.5.1	Overall Outcomes.....	45
4.5.2	Comparing Formative and Summative Evaluation Results.....	46
5	Evaluation of Voice Interaction Functionalities.....	47
5.1	Overview	47
5.2	Method	47
5.3	Evaluation.....	48
5.4	Discussion	52
5.5	Conclusion.....	54
6	Best Practices and Recommendations	55
6.1	Production Scenario	55

6.2	Prosumption Scenario	55
7	Conclusion	57
8	References	58
9	Appendix A User Evaluation Materials.....	59
9.1	Production Scenario DW Online Questionnaire.....	59
9.2	Production Scenario BDS Online Questionnaire	65
9.3	End User Trial Instruction Sheet & Questionnaire	71
9.4	End User Trial Questionnaire Response Data.....	93
9.4.1	Responses Formative Evaluation User Trial	94
9.4.2	Responses Summative Evaluation User Trial	98
9.5	User Voice Trials Instruction Sheet & Questionnaire.....	104
10	Appendix B: School Partner LOPD Confirmation Letters	109
10.1	Colegio LA Encarnacion de Sueca	109
10.2	Colegio La Milagrosa de Cullera.....	111
11	Appendix C: Review of KPIs.....	113
11.1	Production Scenario KPIs.....	113
11.2	Prosumption Scenario KPIs.....	113
11.3	Cross-Cutting KPIs	114

1 Introduction

SAM – Dynamic Social and Media Content Syndication for 2nd Screen – is a project funded by the Seventh Framework Programme of the European Commission under Grant Agreement No. 611312. It provides a content delivery platform for syndicated data to be consumed in a contextualised social way through 2nd Screen devices.

1.1 SAM Project Overview

The current generation of Internet-connected devices has changed the way users interact with media. Previously, users were restricted to being passive and unidirectional consumers; now, they are proactive and interactive media users. They can comment on and rate a television show or film and search for related information regarding cast and crew, facts and trivia or even filming locations. They do this with both friends and wider social communities through the so-called “2nd Screen”.

Another related phenomenon is “Content Syndication”, which is a field of marketing where digital content is created once and delivered to consumers through various different marketing channels (devices, markets and stakeholders) simultaneously, enabling efficient content control, delivery and feedback.

However, the 2nd Screen phenomenon has grown in a disorderly manner. Tools supplied by the media provider companies (e.g. as mobile or tablet apps) limit the potential outreach and, as a result, users are not enjoying relevant contextual syndicated information. European enterprises wishing to provide services have limited methods of receiving feedback, restricting the business intelligence that can be extracted and applied in order to profit from and enrich this growing market.

SAM is reshaping the current disorganised 2nd Screen ecosystem by developing an advanced social media delivery platform based on 2nd Screen and Content Syndication within a social media context. This is achieved by providing open and standardised means of characterising, discovering and syndicating media assets interactively. Users will be able to consume and prosume digital assets from different syndicated sources and synchronised devices (e.g. connected televisions), creating more fulfilling experiences around the original media assets.

The SAM vision that is now becoming reality, sees the former, out-dated system of users searching for the information they desire replaced with a new approach where information reaches users on their 2nd Screen using content syndication. This is enriched through the creation of dynamic social communities related to the user and digital asset context (e.g. profiles, preferences and devices connected). These are continuously evolving social spaces where people share interests, socialise and build virtual communities. SAM will enable syndication of comments, ratings, facts, recommendations and new information that will enrich and energise the virtual community as well as enhance personalised knowledge and satisfaction.

1.2 Deliverable Purpose, Scope and Context

The purpose of this deliverable is to report on the setups, methods, results and lessons learned from the user evaluations that have been carried out as part of the SAM project. The reporting of the evaluation activities is intended to determine and document properties of the SAM project output as experienced by different types of representative users,

involving both potential professional users and potential end users. The contents of the deliverable should be useful for those interested in the final output of the SAM project and for third parties working on systems that are in some capacity similar to the SAM platform that has been evaluated.

1.3 Document Status and Target Audience

This deliverable is a standalone deliverable that reports on the results of all user evaluations in the SAM project. The deliverable is public and intended both for internal and external use.

1.4 Abbreviations and Glossary

A definition of common terms and roles related to the realisation of SAM as well as a list of abbreviations is available in the SAM Glossary.

Further information can be found at <http://wiki.socialisingaroundmedia.com/index.php/Glossary>.

1.5 Document Structure

This deliverable is broken into the following sections:

- **Section 1 (Introduction):** Provides an overview over the deliverable and summarises the topics discussed
- **Section 2 (Evaluation Activity Overview):** Summarises the evaluation activities carried out in the project
- **Section 3 (Production Scenario Evaluation):** Reports on the Production Scenario evaluations carried out in the SAM project
- **Section 4 (Prosumption Scenario Evaluation):** Reports on the Prosumption Scenario evaluations carried out in the SAM project
- **Section 5 (Evaluation of Voice Interaction Functionalities):** Reports on the evaluation of voice interaction functionalities as part of SAM
- **Section 6 (Best Practices and Recommendations):** Documents best practices and recommendations identified based on evaluation outcomes
- **Section 7 (Conclusion):** Summarises the evaluation activities undertaken and the outcomes of the user evaluations
- **Annex A (User Evaluation Materials):** Provides the materials used in the user evaluation sessions
- **Annex B (School Partner LOPD Confirmation Letters):** Copies of the school partner confirmation letters to the LOPD confirming orderly and successful execution of school trials
- **Annex C (Review of KPIs):** A review of KPIs that had been defined in SAM deliverable D8.4.1

1.6 External Annexes and Supporting Documents

The following deliverables are specifically relevant for this deliverable, because they are concerned with the development of the system environment, system setup and logistics of the user evaluations for the SAM project:

- D8.2.1 “Use Case I: Content Syndication and Media Enrichment (first version)”

- D8.2.2 “Use Case I: Content Syndication and Media Enrichment (final version)”
- D8.3.1 “Use Case II: Social Consumption (first version)”
- D8.3.2 “Use Case II: Social Consumption (final version)”
- D8.4.1 “Use Case Validation and Feedback (first version)”

2 Evaluation Activity Overview

This section gives an overview over the different evaluation activities that were carried out in the project and also gives an overview over the impact of the evaluation activities during the project and the possible contributions of evaluation outcomes after the end of the project.

2.1 Production Scenario

The SAM Production Scenario is concerned with the use of the SAM platform for the production of 2nd Screen experiences and related relevant processes. The scenario activities that are envisioned as typical for the scenario are described in the deliverable D8.1, Section 2.2.

The core activity of concern in the evaluation is the creation of 2nd Screen experiences with the SAM platform components. Main areas of interest in the evaluation are the usability of the proposed system, the ability to integrate the system into existing workflows and the ability of users to create 2nd Screen experiences of appropriate quality in a short amount of time.

The Production Scenario was evaluated with professional users with the two user partner organisations Deutsche Welle and BDS. The focus of the evaluation was placed on gathering qualitative evaluation results and on gathering feedback relevant for the further development of the SAM platform after the end of the project. The evaluation was achieved by performing sessions with individual professional users who were asked to use the SAM platform in order to create 2nd Screen experiences.

Evaluation outcomes include both questionnaires completed in order to evaluate the system usability as determined by the end users and qualitative feedback on system usage provided by the participants.

2.2 Prosumption Scenario

The SAM Prosumption Scenario is concerned with the use of the SAM platform for the consumption of 2nd Screen experiences. The Scenario activities that are envisioned as representative for this scenario are described in the deliverable D8.1, Section 2.3.

The main activities of concern in the end user evaluation are the interactions with the 2nd Screen content and social media functionalities provided by the SAM platform in addition to interest in the technical stability of the system. The main goal of the evaluation was to determine whether the experiences presented to end users were considered usable, useful and engaging.

The Prosumption Scenario was evaluated with groups of school children primarily aged 14-16 at two schools located near the Spanish city of Valencia. Users participated simultaneously in groups, which allowed us to evaluate group interactions through SAM communities.

Since the user evaluations involved larger groups of users, it was found that the voice interaction functionalities that are part of the SAM end user experiences could not be evaluated well due to noise interferences and due to the large number of heterogeneous devices provided by the evaluation participants. Hence, a separate user evaluation of the voice control functionalities was carried out in Goteborg, Sweden. The evaluation was

carried out with individual participants as opposed to groups of participants and focused on the evaluation of voice interaction only.

Evaluation outcomes were recorded via questionnaire instruments. The focus of the evaluation is on quantitative evaluation results from questionnaires. These are augmented by qualitative feedback provided by participants and by observations made by the experimenters during the evaluation sessions.

2.3 Evaluation Approach and Scope of Lessons Learned

User evaluations in SAM were carried out in two phases and with two aims: first, to gather feedback in the final development phases with the aim of improving specific system functionalities and user interfaces for the final evaluated prototype, and second in order to evaluate the SAM platform for a summative evaluation and in order to determine the readiness status of the final project outcome.

The formative feedback outcomes of the first phase are reported on in deliverable D8.4.1. The phase consisted of expert walkthroughs (not further reported on here) and a first iteration of end user trials (see Section 3.1). The first iteration of end user trials also served as a pilot study for the final user evaluation in terms of the evaluation methods as well as the technical platform readiness.

The second phase is reported on in the present deliverable. In the second phase, an improved version of the end user trials was carried out and expert evaluations were replaced with professional user evaluations. The goal of the second evaluation has been to evaluate the final system prototypes in order to determine the user views of relevant properties and in order to identify areas for further improvements after the conclusion of the R&D project.

One of the results of the SAM project is a collection of lessons learned and best practices identified during the course of the project and at the conclusion of the project via user evaluations. The identified best practices and lessons learned have primarily been derived from observations made during the evaluation phases of the project.

3 Production Scenario Evaluation

This section reports on the results of the SAM Production Scenario evaluation activities.

3.1 Overview

Production Scenario activities were evaluated primarily using professionals working in application domains that are expected to be impacted directly by the introduction of a system such as the SAM platform into production. Members of staff of the two project user partners represented these roles from different perspectives, of which the perspective of the content editor is of particular concern for the Production Scenario evaluations.

Evaluations were undertaken at the premises of the two SAM user partners BDS and DW. Each of the two partners focused on topic domains more closely related to their business domain: BDS focused on the ingestion, representation and monetisation of assets, while DW focused on the editor and publishing workflow associated with creating 2nd Screen experiences using the SAM Platform.

The Production Scenario evaluation follows a primarily qualitative evaluation approach that is supplemented with questionnaire data that should be interpreted as indicative given the number of participants was limited in order to enable one-to-one hands-on interactions with the SAM Platform during the evaluation of the Production Scenario.

Some of the responses collected may be used in order to augment the areas of improvement that have been identified for a pre-final prototype of the SAM Platform as part of the work documented in SAM deliverable D8.4.1.

Deliverable D8.2.2 reports in detail on preparations, setup and execution of the Production Scenario evaluation. This section summarises the evaluation activities and findings.

3.2 Method

3.2.1 Setup and Procedure

The general evaluation method and setup was shared between both participating organisations: evaluation participants were asked to undertake a number of activities on the SAM Platform using a desktop computer environment. They were provided with an instruction sheet containing a description of the activities that they were asked to carry out. For more complex activities, an evaluator was available to provide more in-depth guidance for an activity that the participant was expected to complete. After completing the tasks, they were asked to carry out, they were asked to fill in a questionnaire concerning their impressions from using the SAM Platform in the way they were asked to use it. Finally, a brief discussion was held with the experimenter in order to gather any additional feedback not easily gathered through the questionnaire that was used.

During the evaluation session, an evaluator observed the evaluation participant and was available to ask questions posed by the evaluation participant.

Ten participants were included in the user evaluation of the Production Scenario at DW, a further ten participants were included in the user evaluation of the Production Scenario at BDS.

3.2.2 Tasks

The tasks that participants were asked to complete are oriented along the activities illustrated in Section 2.2 of SAM deliverable D8.1. Generally, partner BDS investigated the asset repositing and publishing, content characterisation and linking as well as the data analytics functionalities. Partner DW predominantly investigated the 2nd Screen experience creation, which is a core activity for the SAM Platform.

3.2.3 Questionnaires, Interviews and Observations

Early user evaluations at Deutsche Welle used for formative user feedback were held with significant involvement by evaluators for guiding participants through the experience creation process. For the summative evaluation, participants were provided with an information flyer about the system and assistance was then provided only if requested by evaluation participants.

Participants were provided with questionnaires which contained both open-ended questions and Likert-scale questionnaire measures. Participants completed the questionnaires using a web user interface for surveys (Google Forms¹). Appendix 9.1 reproduces screenshots of the online questionnaire as provided to participants for Deutsche Welle. Appendix 9.2 reproduces screenshots of the online questionnaire as provided for participants of BDS.

Interviews carried out after the conclusion of the evaluation activities (including completing the questionnaire) were non-structured and evaluator-lead. The section also reports on observations made by the evaluator while participants were working on the tasks they were asked to complete.

3.3 Evaluation

3.3.1 Participants

The user evaluation at Deutsche Welle involved 10 participants employed at Deutsche Welle but not participating in the SAM Project in any capacity other than as participants in the user evaluation. Participants were primarily journalists and researchers.

The user evaluation at BDS involved 10 participants employed at BDS but not participating in the SAM Project in any capacity other than as participants in the user evaluation. Participants were technically oriented staff at BDS and data editorial staff.

3.3.2 Responses

Participant responses to questionnaire items are represented separately for Deutsche Welle and BDS.

3.3.2.1 Deutsche Welle

The user evaluation at Deutsche Welle combined elicitation of qualitative feedback with responses to Likert-scale questionnaire items in order to gather feedback on the editorial workflow involved in the creation of a 2nd Screen experience. This section reproduces their user responses concerning the editorial workflow system of SAM.

¹ <https://www.google.com/forms/about/>

Questionnaire responses were gathered using Google Forms. The plots shown in the remainder of this section have been generated using Google Forms. Due to the small sample size, participant responses should be considered indicative and may not be representative of a larger potential user population. Since ten participants provided questionnaire responses, response percentages can also directly be translated into the number of participants that responded in a particular manner.

Participants were generally satisfied with the search functionalities (100% agreed or strongly agreed with the statement that it is easy to find related data with the SAM tool) and metadata (80% of participants agreed or strongly agreed with the statement that it is easy to enhance the existing metadata).

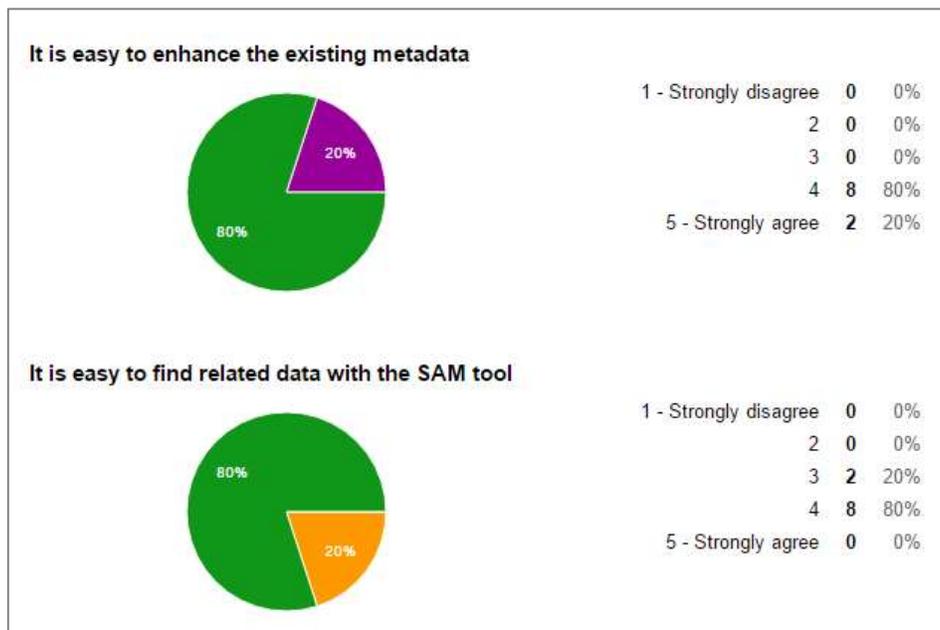


Figure 1: Participant responses to metadata editing and search functionalities

Linking features were evaluated as positive when using the semantic linking tool (60% of respondents agreed with the statement that it is easy to add links with the semantic tool) by the majority of participants. Participant responses were spread more widely across responses concerning the statement whether it is easy to add links with the Linker overall (20% strongly agree, 50% agree, 30% do not agree or disagree with that statement), but overall slightly more positive than the responses to the semantic tool.

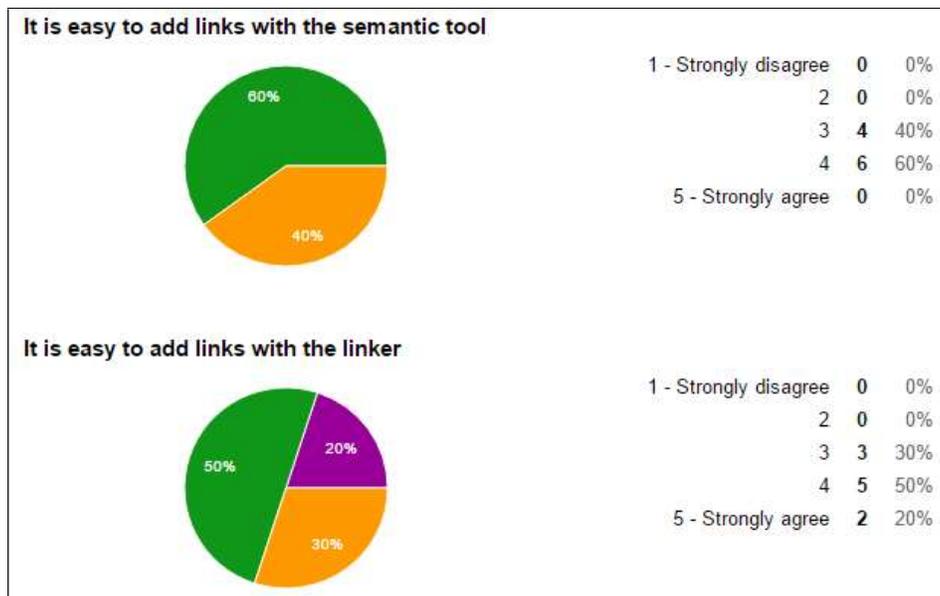


Figure 2: Responses to linking evaluation questions

Concerning editing and publishing 2nd Screen experiences, the arrangement of content on the timeline is evaluated neutrally – on average lower than other responses – by most participants: 50.0% neither agree nor disagree with the statement that it is easy to synchronise related content via the timeline, 20% disagree with the statement and 30% agree with it. Publishing items is overwhelmingly considered to be easy (70% of participants strongly agreed with this and the remaining 30% agreed with the statement).

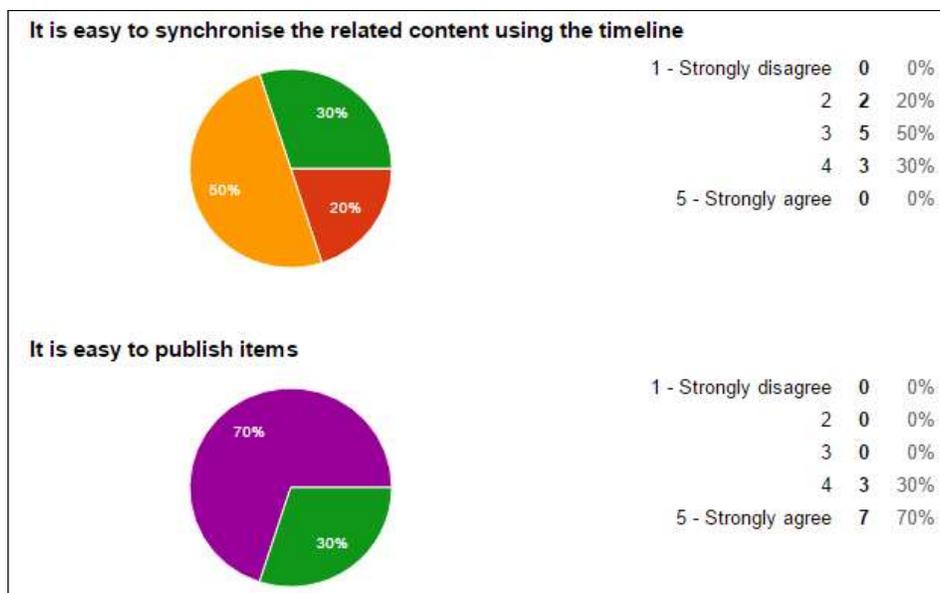


Figure 3: Timeline editing and experience publishing questionnaire items

The manipulation and preview of 2nd Screen experiences and previewing 2nd Screen experiences in the dashboard tool are viewed more critically than some previous questionnaire items: 60% of participants neither agree or disagree and 10% of participants strongly disagree with a statement that it is easy to configure style and branding, and only 30% of participants agree that it is easy to preview 2nd Screen experiences in the platform.

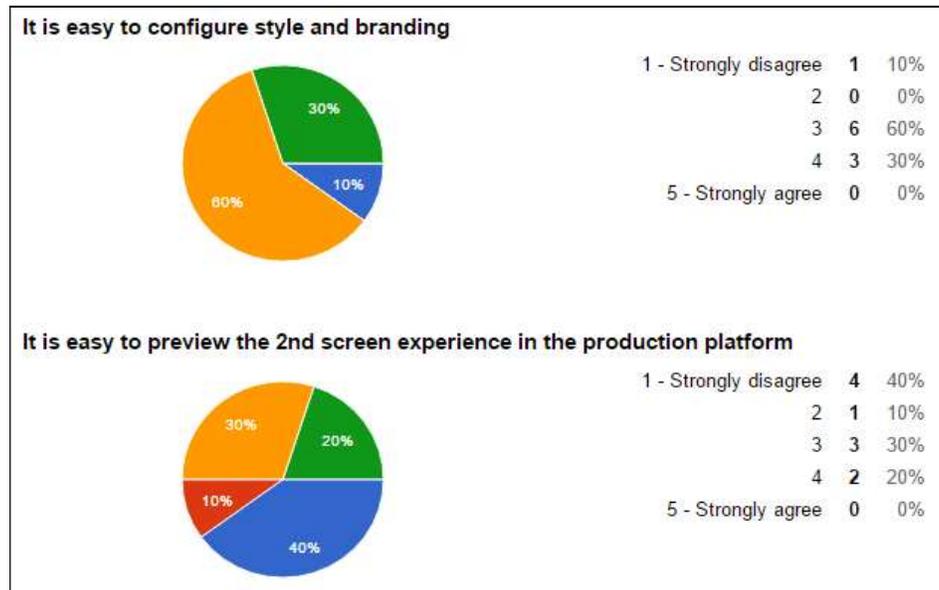


Figure 4: Responses concerning styling and branding and experience previewing

In terms of the overall impressions of the tool in terms of utility and in terms of presentation and usefulness, the majority of participants considered the system to be useful (70%). Participants did not generally agree that the dashboard is “useful and appealing” (20% agreed, 50% neither agreed nor disagreed and 30% disagreed with the statement).

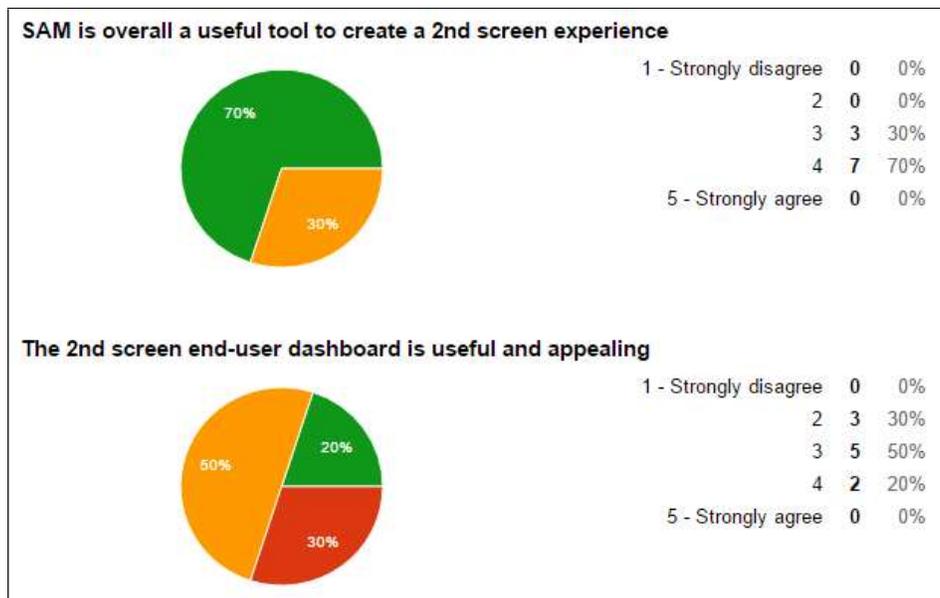


Figure 5: Responses on SAM utility and appeal

The overall performance of the SAM Platform in terms of ease of use was overall judged positively by half of all participants (50% of participants agreed or strongly agreed that the system was easy to use, 50% neither agreed nor disagreed).

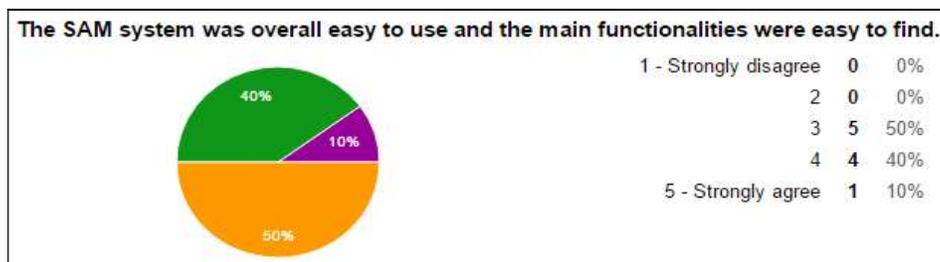


Figure 6: Responses to overall system ease of use

As noted previously, the sample size for the quantitative proportion of the Production Scenario requires that the user evaluation should be viewed with care. Compared with qualitative feedback, the overall impression of the questionnaire data is that participants evaluated the system more negatively in the quantitative elements of the evaluation questionnaire than one might expect given the qualitative feedback.

At the qualitative level, the following important findings were reported by Deutsche Welle participants:

- Semantic search for assets seems to work quite well, particularly on keywords. It should be made available throughout the entire system whenever asset search and/or selection are carried out (e.g. also in the Linker). A participant noted that in some cases the semantic keyword search would return unrelated or incorrectly related items, for

instance when the acronym “DW” was expanded into “DreamWorks” (a film production label) instead of “Deutsche Welle”.

- The related feature for adding similar items to a timeline is appreciated by trial participants as a useful feature for quickly reviewing potentially useful 2nd Screen content.
- Participants would like to see more automation and more sensible default pre-sets as part of the user interface of the SAM Platform.
- While the organisation and labelling of elements has been improved, more guidance through the SAM workflow would need to be provided for a production environment that would be used intermittently by content editors.
- The number of steps to take when using the system should be reduced in order to improve the usefulness of the tool.
- The prototype system still exhibits some “beta-level” issues and occasionally displays error messages that are difficult or impossible to understand for editor users.

In terms of qualitative evaluation, when the participants were asked to judge the SAM platform in general they responded positively, calling the system a “nice platform”, “very good”, “works surprisingly well and fast”, “very useful to find related items and to produce related content”, “works well for finding and publishing linked content”, “good potential, but can do with optimisation”, “powerful, useful, but needs optimization [sic]”.

Standout properties named by participants were “easy, fast, covering a lot of technologies and aspects”, “broad flexible powerful platform, good opportunities for media production/linking”, “good extension to existing systems, easy to use”.

Shortcomings of the platform participants named included “the user interface needs to be a bit better and intuitive”, “not enough automation”, “usability could be enhanced (fewer steps, more clarity)”, “requires too many steps per action”.

3.3.2.2 BDS

The user evaluation at BDS combined elicitation of qualitative feedback with responses to Likert-scale questionnaire items in order to gather feedback on the metadata management and data importing involved in the creation of a 2nd Screen experience. This section reproduces their user responses concerning these functionalities within the SAM platform.

Questionnaire responses were gathered using Google Forms. The plots shown in the remainder of this section have been generated using Google Forms. Due to the small sample size, participant responses should be considered indicative and may not be representative of a larger potential user population. Since ten participants provided questionnaire responses, response percentages can also directly be translated into the number of participants that responded in a particular manner.

Metadata editing functionalities of the platform were evaluated neutral with a normal distribution of responses. 40% of participants neither agreed nor disagreed that it is easy to enhance existing metadata, 20% agreed or disagreed on either side and 10% strongly agreed or disagreed on either side. 50% of participants disagreed or disagreed strongly with the statement that it is easy to find related data with the SAM tool.

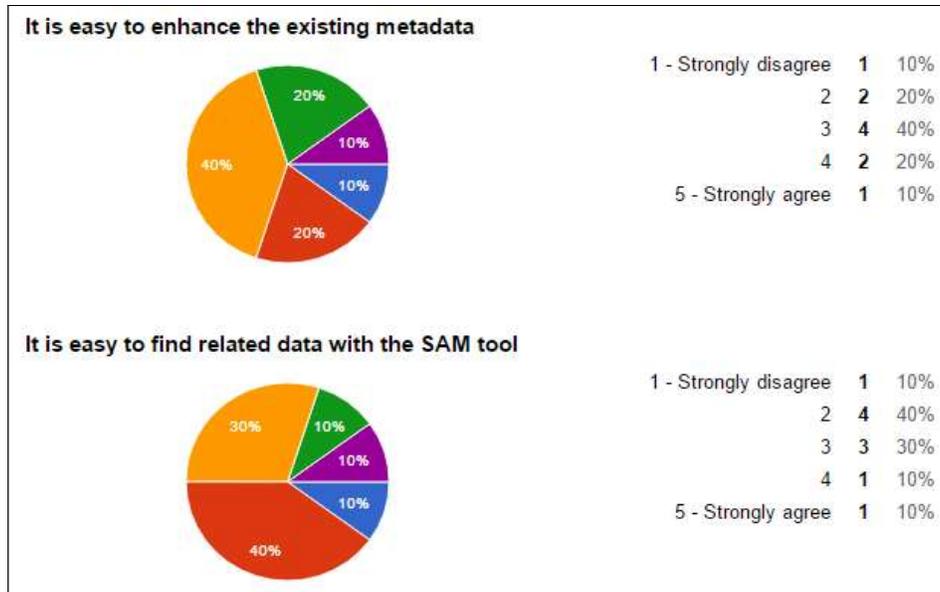


Figure 7: Responses to editing and semantic search

BDS participants were also asked to review functionalities that they would not normally interact with in a SAM workflow, including linking items and publishing 2nd Screen experiences. 30% of participants agreed or agreed strongly with the statement that it is easy to add links with the semantic tool; an equal number of participants disagreed with the statement. 50% BDS participants did not find it easy to link assets (40% disagreed, 10% strongly disagreed).

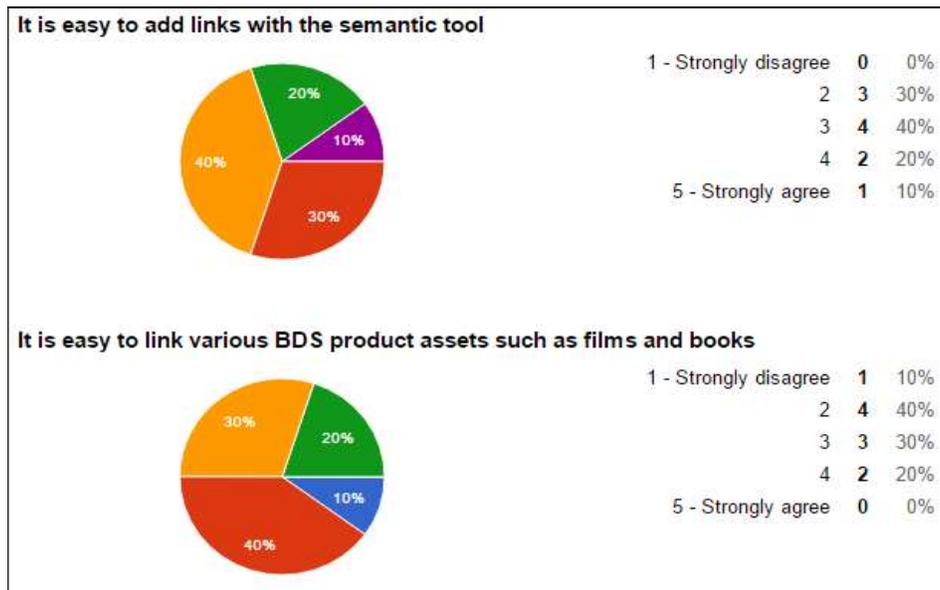


Figure 8: Responses to ease of use

Similarly, brand and consumer protection, 2nd Screen experience creation, 2nd Screen experience linking and asset linking activities were not evaluated positively by the majority of BDS participants (see Figure 9 and Figure 10).

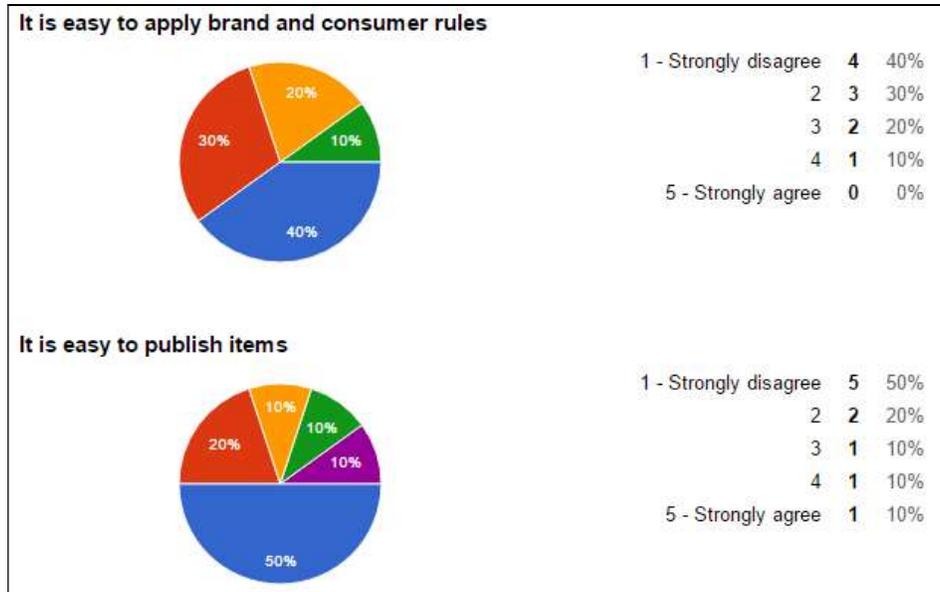


Figure 9: Responses to applying rules and publishing items

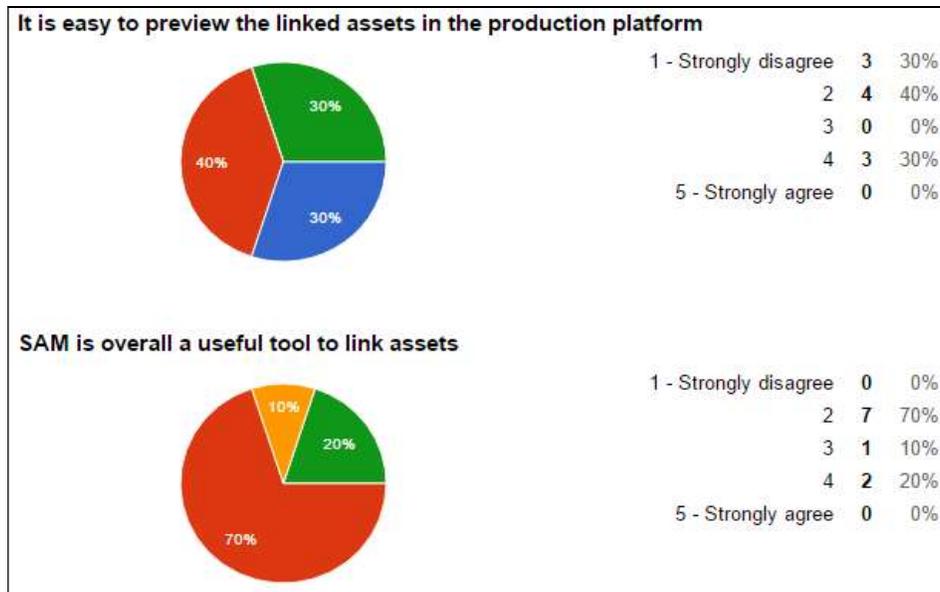


Figure 10: Responses to preview and linking

Concerning the overall utility of the SAM Platform to offer metadata, the majority of BDS evaluation participants overall did not agree that the Platform is a useful tool to offer metadata on a marketplace (50% disagree, 10% strongly disagree). Half of participants

disagreed or strongly disagreed with the statement that the user dashboard is useful and appealing.

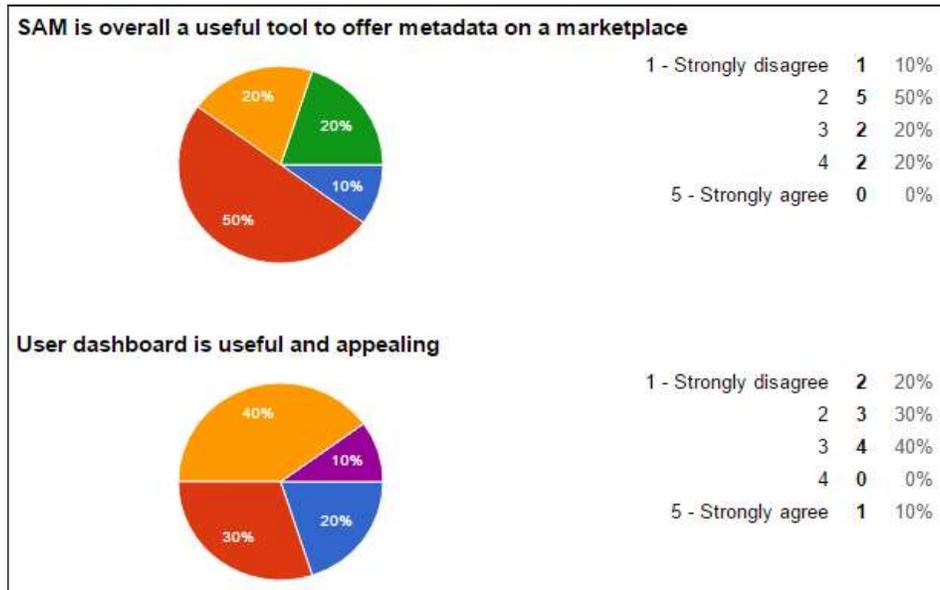


Figure 11: Responses to utility for marketplace and usefulness

Concerning the ease of use of the SAM Platform, a significant majority of participants did not agree that the platform was overall easy to use (30% strongly disagree, 40% disagree).

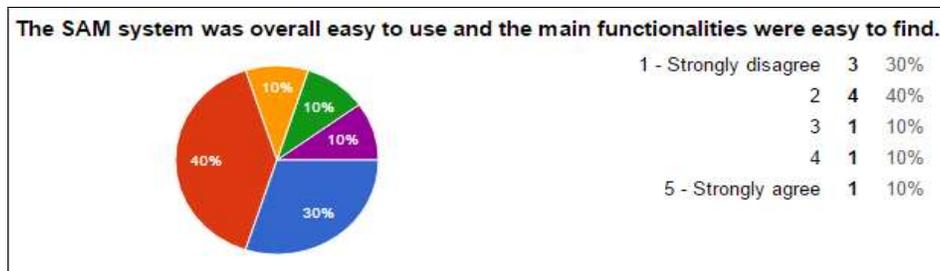


Figure 12: Responses to overall system evaluation

As noted previously, the sample size for the quantitative proportion of the Production Scenario requires that the user evaluation should be viewed with care. Compared with qualitative feedback, the overall impression from the questionnaire data for BDS is that the functionalities of the system that were closer to the daily work of the evaluation participants was not as well developed as systems available to them already, while the system functionalities that are not usually part of their work environment were not clearly described to evaluation participants.

At the qualitative level, the following important findings were reported by BDS participants:

- With two exceptions participants found the metadata editing process in the platform to be difficult to use and suggested to improve the usability of the platform in this respect and overall.

- Participants found the ability to link assets good, including the ability to link assets not from BDS.
- Search responses did not always appear related to expectations by participants, so that participants suggested to improve search functionalities and to address behaviours perceived as bugs.
- Participants requested “stricter parameters” for search queries, which would give them more control over search results.
- System interactions should be simplified, since they seemed overly complicated to BDS participants in the evaluation sessions.

As might be expected, participant feedback focused on metadata editing and search functionalities in terms of functional criteria, and on ease of use concerning non-functional criteria. Participants felt that search results were at times not closely or even not at all related to their queries. One participant remarked that bulk importing should be provided in place of manual asset creation, as manual asset creation would not be feasible for a metadata provider.

In terms of qualitative evaluation of system quality, participants found the system to be “hard work”, “not very good” and suggested that the system as evaluated “needs work [because it is] not very user-friendly”. Participants also found the instructions provided for their user trial to be lacking and the data available in the system for the trials to be limited.

3.4 Discussion

The evaluation of the Production Scenario reflects a split view from two different evaluation partners with some shared general recommendations.

The evaluation carried out by partner Deutsche Welle, which focused on the evaluation of the 2nd Screen experience workflow, has resulted in an overall quite positive evaluation of the system concept and the overall implementation of the SAM Production Scenario platform. The semantic services of the platform were specifically mentioned as being useful and helpful when creating 2nd Screen experiences.

The evaluation carried out by partner BDS, which focused on the evaluation of the metadata handling and metadata import functionalities, has resulted in a negative to at best neutral evaluation of the metadata creation, editing and search functionalities relevant to partner BDS in particular. Here, it appears that the platform did not meet user expectations concerning specifically usability of the platform, advanced search functionalities and import functionalities.

Participants from both partner organisation highlighted areas for improvement that should be addressed for a commercialisation of the SAM Platform:

- Improvements to system usability, in particular in terms of providing better guidance to users, providing sensible pre-sets and reducing the number of actions required for many of the system actions.
- Improvements in terms of automation throughout the platform; while these suggestions remain general, project participants have already identified areas for future work that would add value to a commercial SAM Platform. Participants from BDS explicitly mentioned that automated bulk importing should be considered the main method for adding content to the SAM Platform, not a manual asset creation process (which

participants were asked to evaluate instead of the bulk import functionality which was actually used in order to ingest content into the platform during the project).

More generally, the question of why a significant discrepancy exists between the evaluations carried out by the two partners needs to be addressed. In our view, the differences in evaluations between Deutsche Welle and BDS can be explained as follows. Participants at Deutsche Welle interacted with the part of the SAM Platform that is novel to the market; as such it may be expected to make the added value provided by it explicit and clear to persons participating in the user evaluation. The participants at BDS on the other hand were asked to interact with systems that did not in themselves offer added value to the BDS participants, and that could also be directly compared to production systems with which the editorial and technical staff at BDS interact as part of their regular work; this places the evaluation carried out at BDS in a different context of expectations relative to the evaluation at Deutsche Welle.

This of course does not imply that the evaluation results gathered at BDS should be discounted and only the results gathered at Deutsche Welle should be considered. For the commercialisation of the SAM platform, the consortium should consider how to address the issues concerning metadata editing and data importing reported by BDS. Two main avenues addressing specifically issues concerning the usability of the metadata management in the SAM Platform can be distinguished:

- Improve the user experience of the SAM Platform metadata handling in order to provide a user experience as good as or better than that of existing solutions in the market.
- Provide means to integrate or connect existing tools to the SAM Platform and focus on improving the ability to integrate the platform through a high-quality API.

It may be necessary to focus on one of these two approaches for commercialisation depending on the financial means available after the completion of the project. In the opinion of the experimenters, the focus should be placed on enabling bulk data importing and integration with third-party tools instead of dedicated components within the SAM Platform. Bulk import functionalities are already part of the SAM Platform, but were not evaluated as part of the BDS user evaluation, so effort for improvements might not be excessive.

Further, more specific recommendations for improvements can be found in SAM deliverable D8.2.2.

4 Prosumption Scenario Evaluation

This section reports on the evaluation of the SAM Prosumption Scenario evaluation activities.

4.1 Overview

The SAM Prosumption Scenario covers all activities involving end users of the 2nd Screen experiences created with the SAM platform with the exception of voice interaction functionalities, which were evaluated in a dedicated evaluation session (see Section 4.3 and Section 5).

As specified, end user evaluations of the SAM platform were carried out in cooperation with two schools: Colegio la Encarnacion and Colegio La Milagrosa, both located near Valencia in Spain. Both of these schools agreed to carry out user evaluations of the SAM platform involving pupils aged 14 to 16 at their school premises. A description of the evaluation planning and environment for the end user evaluations can be found in deliverable D.8.3.1 and in deliverable D8.3.2.

All evaluation sessions at the two partner schools followed the same setup: participants gathered in a classroom where a single television was set up. Participants used their own smartphone and tablet devices in order to access SAM 2nd Screen experiences, which were provided to them in four rounds, each of which focused on a different part of the overall user experience. At the end of each round and at the end of the overall evaluation session, participants were asked to complete questionnaires to elicit responses concerning their experiences when using SAM 2nd Screen functionalities.

4.2 Method

This subsection describes the environment and evaluation procedure used for the user evaluation sessions. Since both the formative and the summative evaluation sessions followed the same approach, the description applies to all of the evaluation sessions held for the end user evaluation of the SAM platform.

4.2.1 Setup and Procedure

At each of the participating schools, a school day session was dedicated to carry out the SAM end user evaluation. Informed consent procedures involving participants and their parents were handled by school staff familiar with the particular informed consent activities as required by the application Spanish laws. Confirmations that the relevant legal requirements have been adhered to can be found in “Appendix B: School Partner LOPD Confirmation Letters”.

A classroom was set up with a television running the SAM Platform 1st Screen application. All participants were gathered in the classroom prior to the evaluation session. The following procedure was then followed for each of the evaluation sessions held:

1. Participants were verbally introduced to the SAM Platform and informed of the purpose of the user evaluation to be carried out.
2. Participants were provided with sets of instruction sheets and questionnaires and with personalised pre-created user account access details.

3. A technical test of the infrastructure was carried out and participants were asked to connect to the wireless network established for the user evaluation; participants were grouped into small groups sharing devices where necessary (due to a low number of available devices or in order to address network infrastructure issues, especially during the formative evaluation).
4. Participants were asked to complete an initial brief questionnaire that captured some basic demographic and technical information for later evaluation.
5. Participants then proceeded to carry out the evaluation, which consisted of the following phases in four rounds:
 - a. A brief introduction to the next task to be completed was given to participants (both verbally and in writing on an instruction sheet).
 - b. A video clip with accompanying 2nd Screen experience was shown to participants twice.
 - c. Participants were given time interact with the 2nd Screen experience after the video playback had ended.
 - d. Participants were then asked to complete the questionnaire section that corresponds to the 2nd Screen experience they had been using.
6. A debriefing session was held in which participants were given additional information about the SAM project, had opportunity to ask the evaluation team questions and in which participants could bring up additional issues not covered by the questionnaire provided to them.

During the evaluation sessions, a team of SAM project members was available to assist participants and to observe noteworthy behaviour of participants while they were completing tasks.

4.2.2 Tasks

Participants were asked to complete 4 to 5 tasks during the evaluation depending on the device type with which they were participating in the user evaluation. The table below (Figure 13) summarises the activities to be carried out in for each of the tasks.

Task 1: Short form news about bees	Interact with 2 nd Screen supplementary content during and after playback of 1 st Screen video content
Task 2: Interview with Mads Mikkelsen	Activities from Task 1 plus interact through pre-defined dynamic communities
Task 3: News about Jurassic World movie	Activities from Task 2 plus joining and using dynamic communities
Task 4: Interview with Tim Burton	Activities as in Task 3
Task 5: Interview with Tim Burton	For Android device users: use voice interaction features in order to interact with the SAM 2 nd Screen experience

Figure 13: Tasks carried out as part of SAM end user evaluations

More detailed descriptions of the materials created for the end user trials can be found in deliverables D8.2.2 and D8.3.2.

4.2.3 Questionnaires and Observations

As outlined above, participants were asked to complete questionnaires after having completed each task of the evaluation. The Appendix subsection 9.3 reproduces the combined instruction sheet and questionnaires that was provided to participants. The appendix reproduces the material for the second trial, which differs from the materials for the first trial only in details resulting from changes after the first trial (screenshots, some reformulations of instructions following feedback from the first trial).

Observations from trials were gathered from the project representatives who were participating in the execution of the user trials; they were gathered in a post-evaluation meeting and additionally via email where necessary.

The questionnaire items were developed based on the well-known and frequently applied Technology Acceptance Model (TAM) questionnaire design [DAV89], which evaluates participants' attitude towards accepting a new technology.

Prior to participating in the user evaluation sessions, potential participants were invited to complete a questionnaire intended to gather basic demographic information as well as information about the media and communication device usage of participants.

4.3 Formative Evaluation

58 participants completed trial questionnaires as part of the formative SAM end user evaluation. The vast majority of participants were in the 15-16-year age bracket (92.9%), the remaining 7.1% of participants were in the 17-18-year age bracket. Gender balance was tilted towards female participants (57.1% vs. 42.9%). Just over half of all participants used Android smartphone devices (52.7%), and a quarter used Android tablet devices (23.6%).

The complete set of responses to questionnaire items is reproduced in Appendix 9.4.1. The remainder of this section notes significant outcomes of the formative evaluation sessions relatively briefly, as the focus of the evaluation is placed on the final summative evaluation.

4.3.1 Using the SAM App

Responses completed after the first interaction focused on evaluating the 2nd Screen augmented content experience. The responses also document the first exposure of participants to the SAM app.

The majority of participants found the SAM app easy to learn and it was clear to them what the SAM app does.

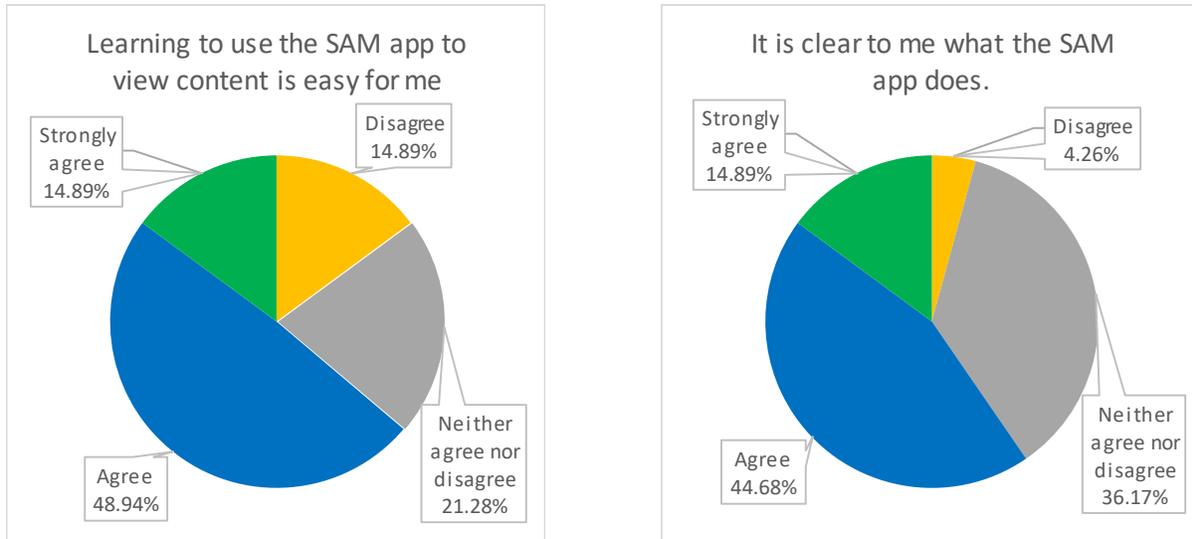


Figure 14: Responses to learnability and ease of use of the SAM app

Fewer participants agreed to statements evaluating specific properties of the SAM user experience that were of concern for the formative evaluation. In particular, fewer participants found it easy to interact with content after the 1st Screen video had finished playing, and fewer participants agreed that it was easy to find new content as it was made available to participants.

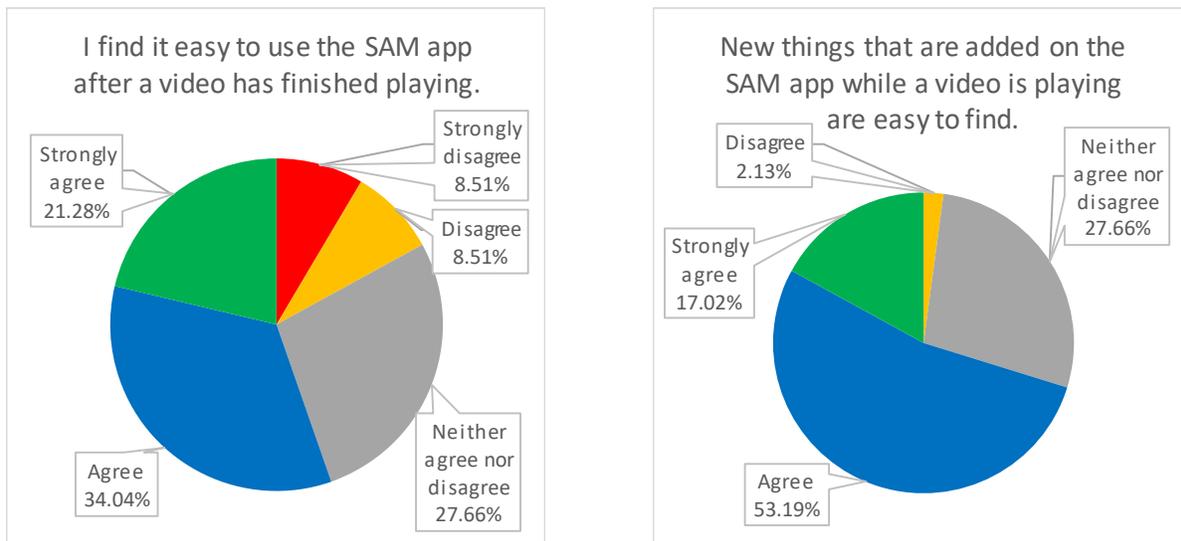


Figure 15: Responses to ease of use and ease of finding new items

The majority of participants considered the SAM to be useful and agreed that using the SAM app to view content was enjoyable.

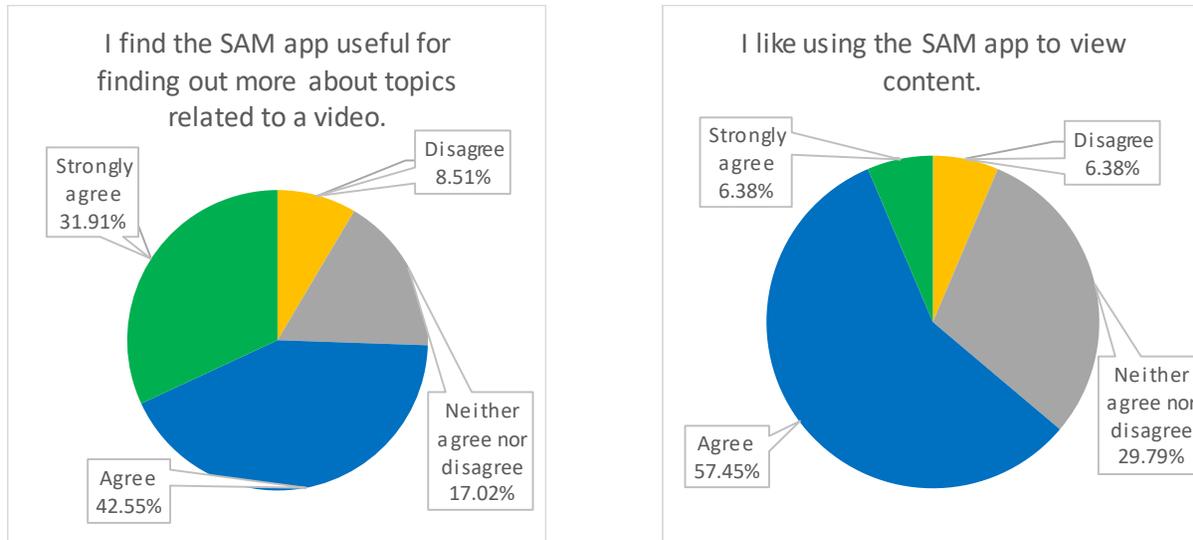


Figure 16: Responses to usefulness and enjoyability

In terms of behavioural intention, participants reported similar levels of interest for using the SAM app at school and at home.

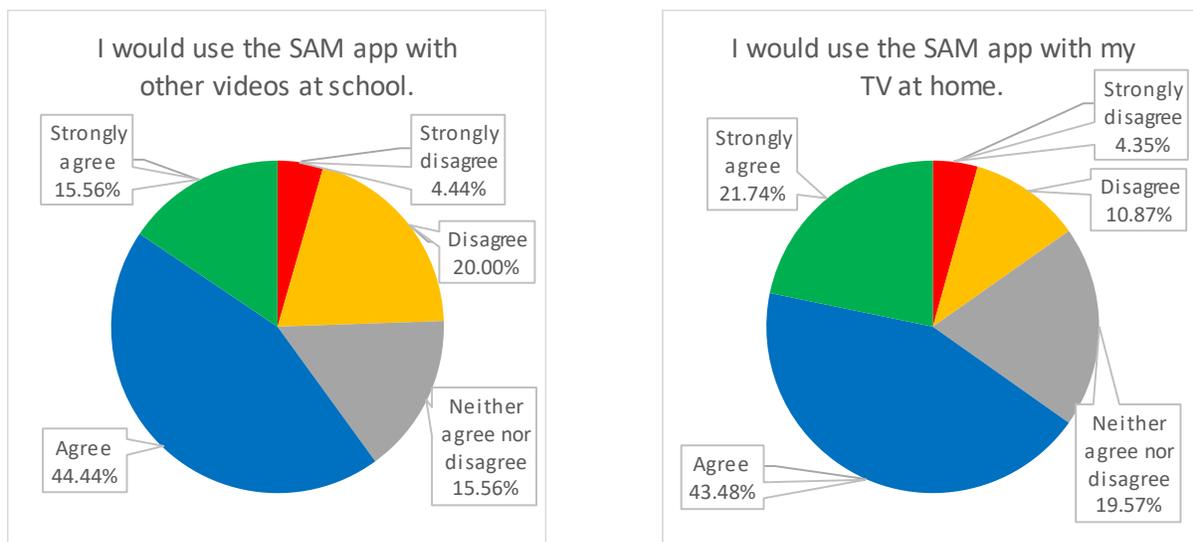


Figure 17: Responses to behavioural intention at school and at home

4.3.2 Using the SAM Chat

In the second round of trial interactions, the SAM chat functionality was introduced without using any dynamic community features. Participants generally found it easy to learn and use the SAM chat user interface.

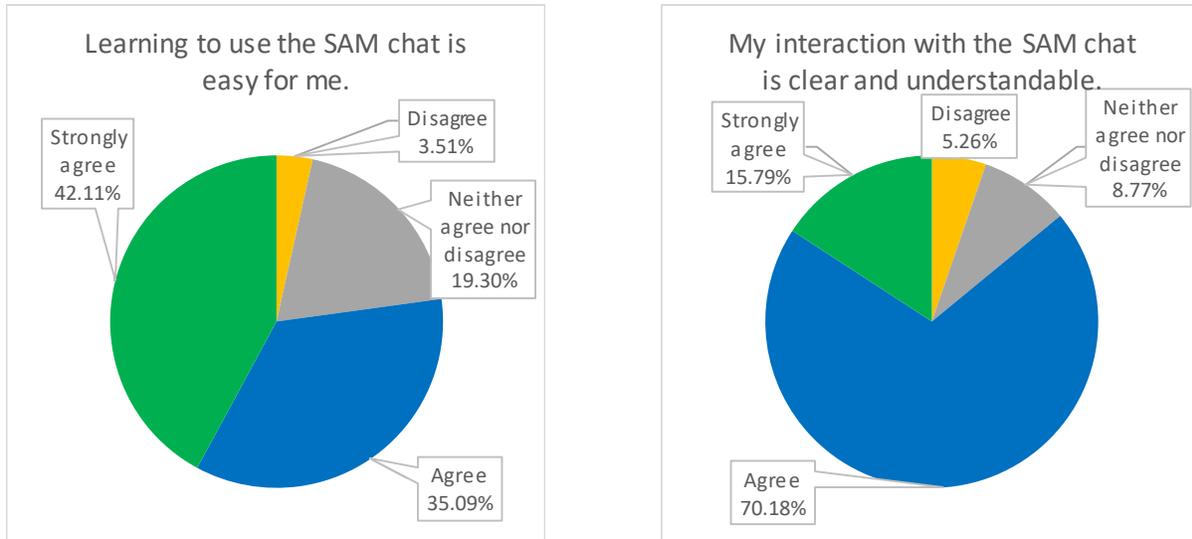


Figure 18: Responses to learnability and clarity of presentation

The majority of participants reported that the SAM chat supported them in communicating with others without effort and found the SAM chat useful for communicating with others as well as agreed that they liked using it (not shown here).

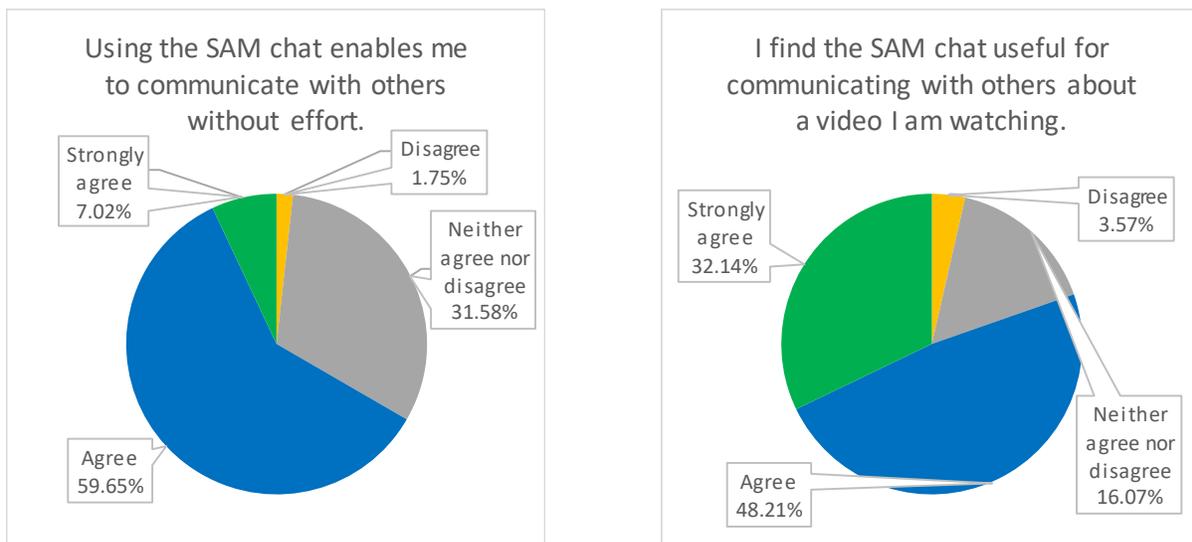


Figure 19: Responses to effort and usefulness

Participants were again asked for their behavioural intention for the SAM app including SAM communities and responded with similar results as reported previously (not shown here).

4.3.3 Using the SAM Communities

In the next evaluation round, participants were also invited to participate in SAM communities. While the majority of participants agreed with the statement “Learning to use the SAM communities is easy for me”, fewer agreed with it than in previous usability

questionnaire items. Similarly, fewer participants agreed with a statement saying it was clear what the SAM communities do (with 44.19% neither agreeing nor disagreeing).

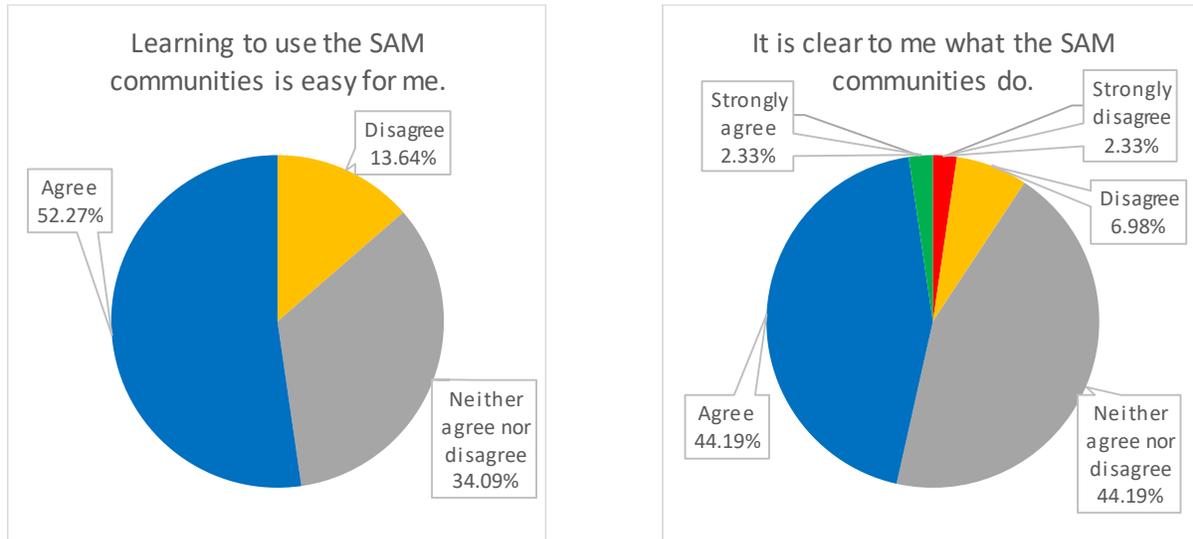


Figure 20: Responses to learnability and clarity of presentation

Similar responses (not shown here) were given in response to general ease of use questionnaire items concerning the SAM communities. The majority of participants agreed that it is easy to send a message to a SAM community (61.36% either agreed or strongly agreed), but 9.09% strongly disagreed with the statement, which can be interpreted as difficulties with the concept and/or presentation of dynamic communities as perceived by a proportion of these end users. Only a minority of participants agree with a statement that they understand why they receive invitations to SAM communities (36.37% either agree or strongly agree, 47.73% neither agree nor disagree).

This notwithstanding, participants overall liked using the SAM communities and considered it to be enjoyable. Only a minority of participants however felt engaged while using the SAM communities (41.83% either agreed or strongly agreed; 41.86% neither agreed nor disagreed).

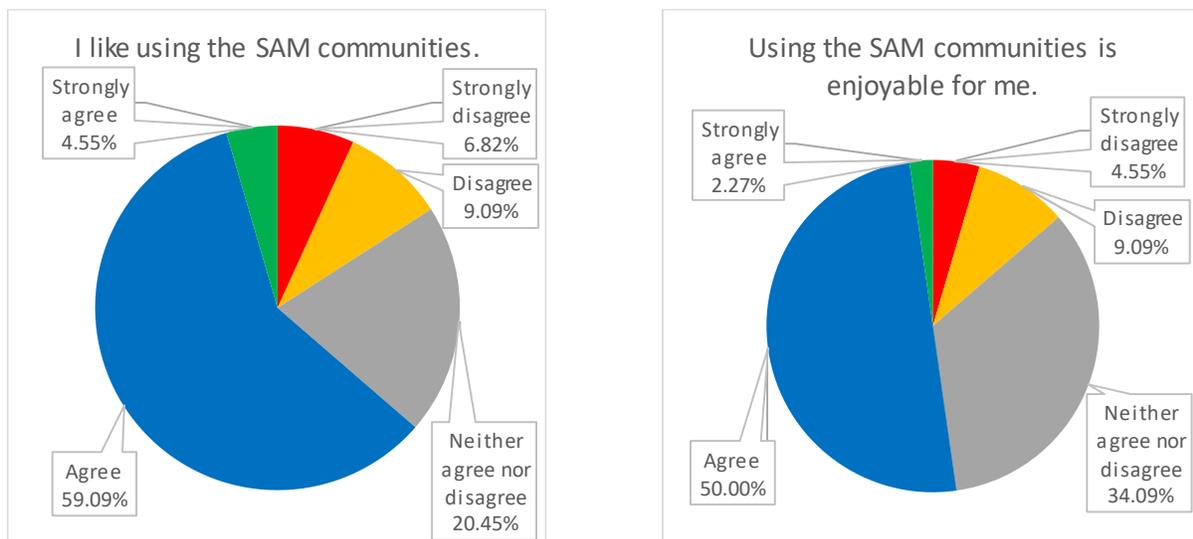


Figure 21: Responses to enjoyability

Behavioural intention responses were not much changed from the previous questionnaire items.

4.3.4 Using the SAM App

The final session involving the SAM 1st Screen provided participants with the same user experience as the previous one, but provided them with more general guidance concerning how to use the SAM app in the final session.

A large majority of participants agree or strongly agree with the statement “It is clear to me what the SAM app does” (69.04%). A majority of participants generally did not find it easy to divide attention between 1st Screen and 2nd Screen (43.91% agree or strongly agree on this item).

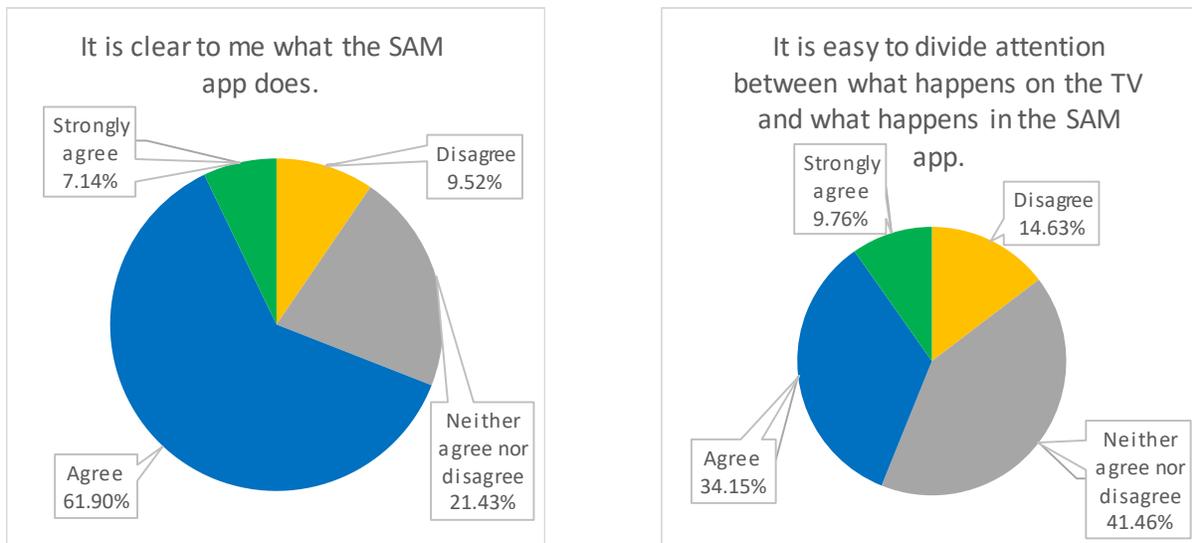


Figure 22: Responses to clarity and dividing attention between TV and 2nd Screen

The majority of participants agree that the interaction with the SAM app is clear and understandable, but a proportion of participants do not agree with the statement (33.33% either express neutral sentiment towards the statement or disagree with it). 38.09% of participants similarly did not agree with the statement that they find the SAM app easy to use.

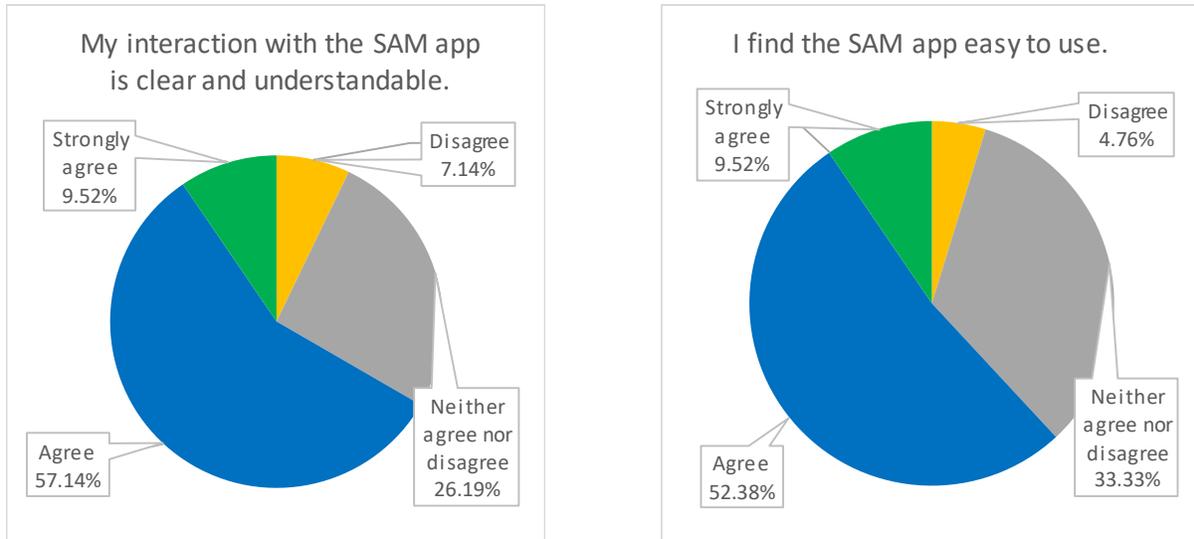


Figure 23: Responses to clarity of presentation and ease of use

In terms of functionalities, participants evaluated the SAM app functionalities generally useful: 77.27% of participants either agreed or strongly agreed with assertions on usefulness for provision of additional information and for social exchange with other participants.

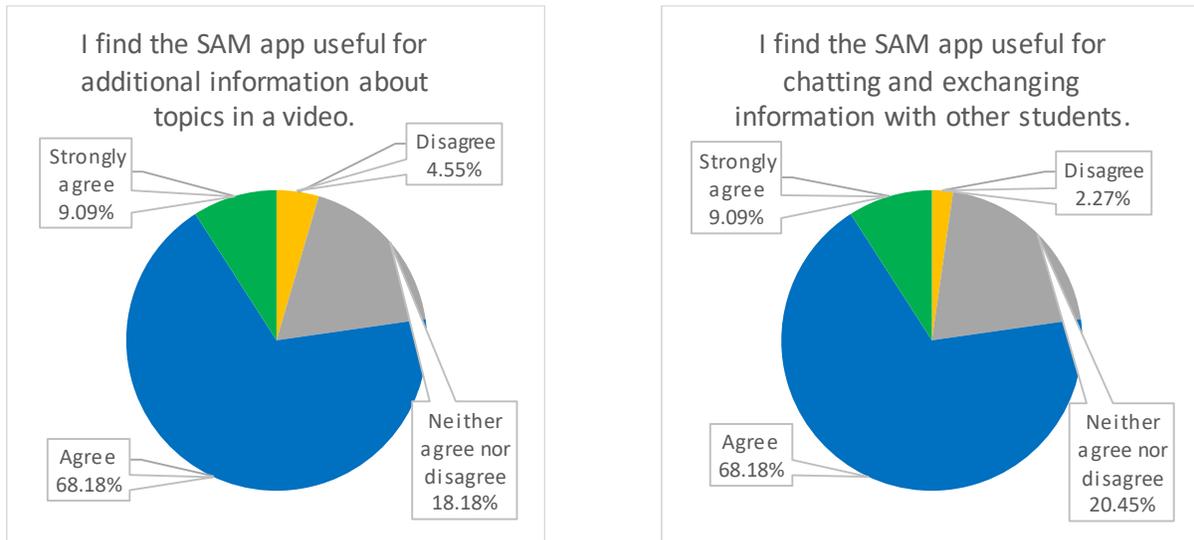


Figure 24: Responses to usefulness

The majority of participants find using the SAM app enjoyable, but fewer feel engaged while using the SAM app.

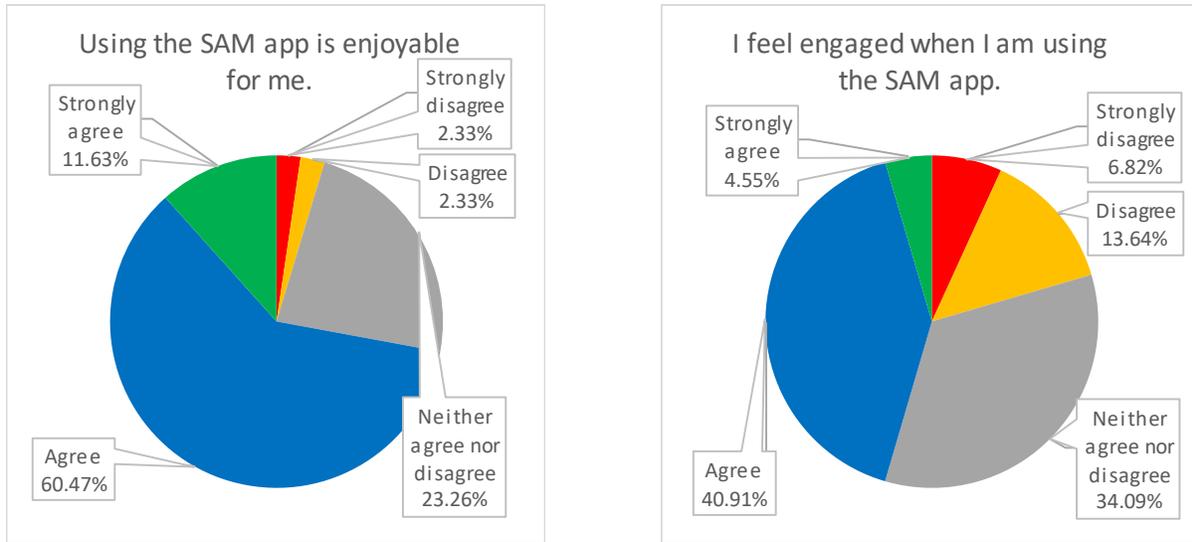


Figure 25: Responses to enjoyability and engagement

This questionnaire section provides a slightly differently worded section concerning behavioural intention to use the SAM app. Overall, the majority of participants would use the SAM app to find out more about topics and issues in a video and would use the SAM app to talk with friends and family about the topics issues in a video.

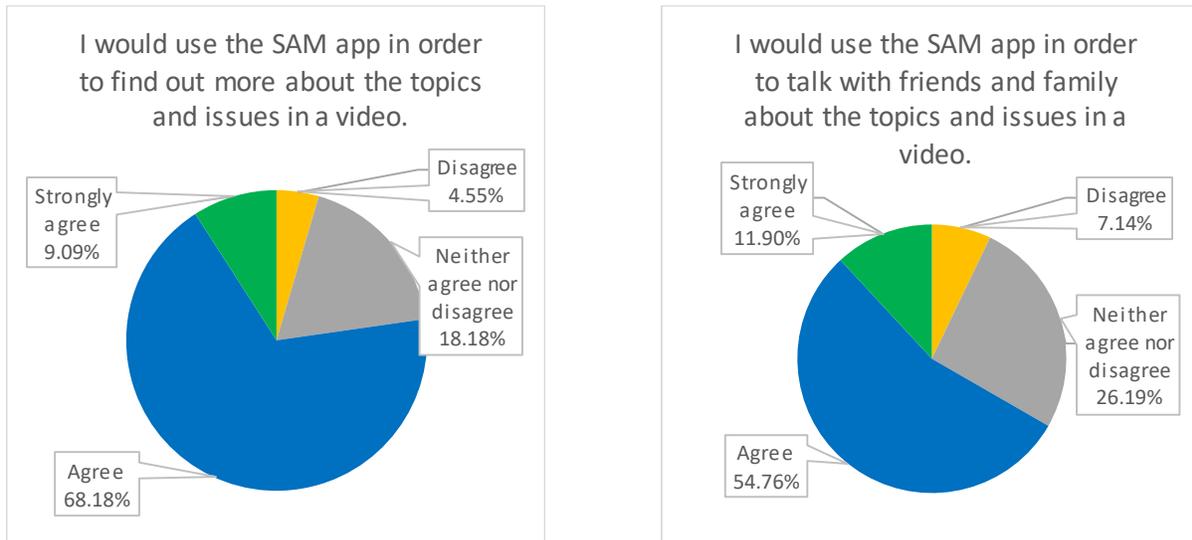


Figure 26: Responses to behavioural intention at school and at home

In terms of using the SAM app in school contexts, participants overall would agree with statements that suggest approving the use of a SAM app in the school context.

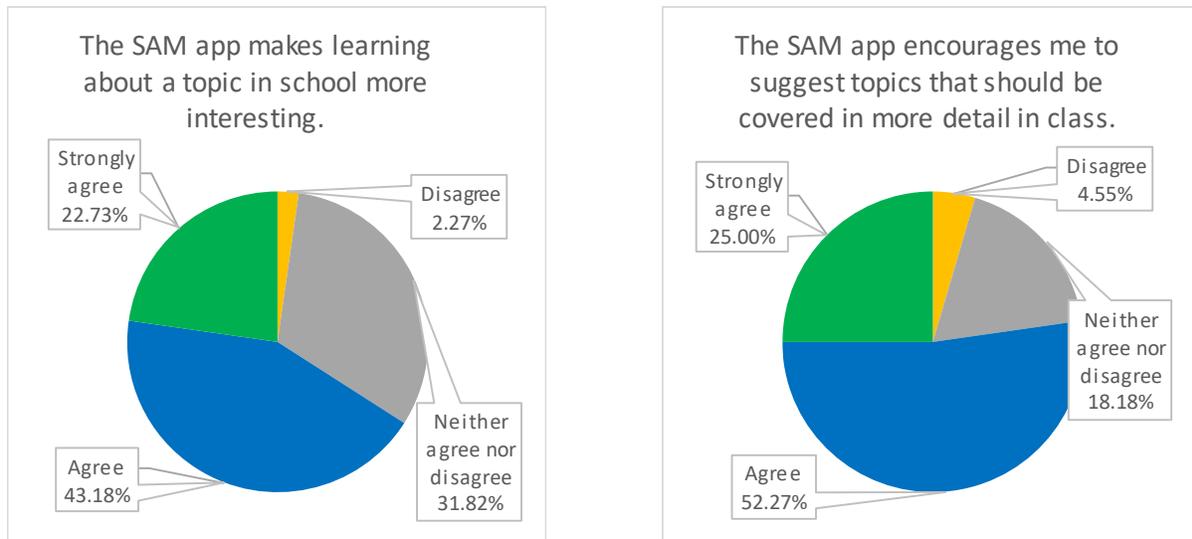


Figure 27: Responses to usefulness at school

The questionnaire also contained questionnaire items to identify whether a particular type of school topics would be evaluated as significantly more applicable to be used with the SAM app, but participants did not express strongly differing preferences for the use of a SAM app in different educational topics (from a selection of language learning, history or geography, politics or sociology).

4.4 Summative Evaluation

90 Participants completed trial questionnaires as part of the summative SAM end user evaluation. The vast majority of participants were in the 15-16-year age bracket (81.1%), 15.6% were in the 13-14-year age bracket and 3.3% were in the 17-18-year age bracket. Gender balance was quite even with 47.8% female and 48.9% male participants (3.3% of participants preferred not to answer the question). 55.6% of participants used Android smartphone devices, 26.7% of participants used Apple iPhone devices and 10% of participants used Apple iPad devices; this shows a change relative to the evaluation session for the formative user evaluation, where fewer Apple OS devices and more Android tablet devices were used. None of the participants in the formative evaluation participated in the summative evaluation.

4.4.1 Using the SAM App

Responses completed after the first interaction focused on evaluating the 2nd Screen augmented content experience.

In terms of ease of use, the majority of participants agreed with statements that it is easy to learn to use the SAM app, clear what the SAM app does and that the SAM app overall is easy to use.

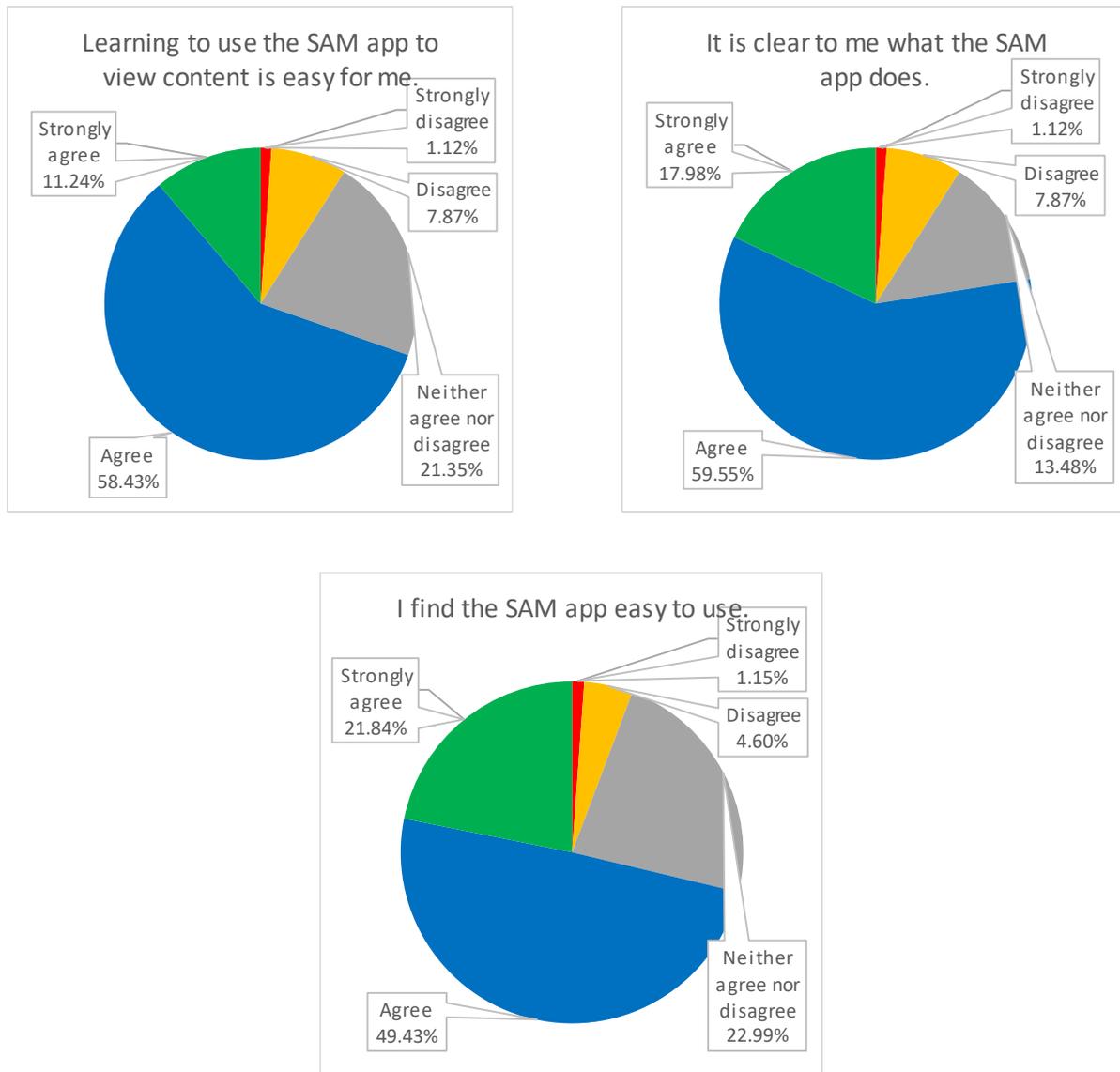


Figure 28: Responses to learnability, clarity of presentation and ease of use

Two questionnaire items specifically relate to using the SAM app while a video is playing versus using the SAM app after a video has completed playback. As a background to this, it should be noted that the evaluations were carried out using short form video with a length between 2 and 5 minutes at most, and that a fairly large number of 2nd Screen content items was presented to participants as part of the user trials.

Nevertheless, not many participants expressed significantly different experiences when using the 2nd Screen while a video is playing compared to after a video has finished playing in the final user trial.

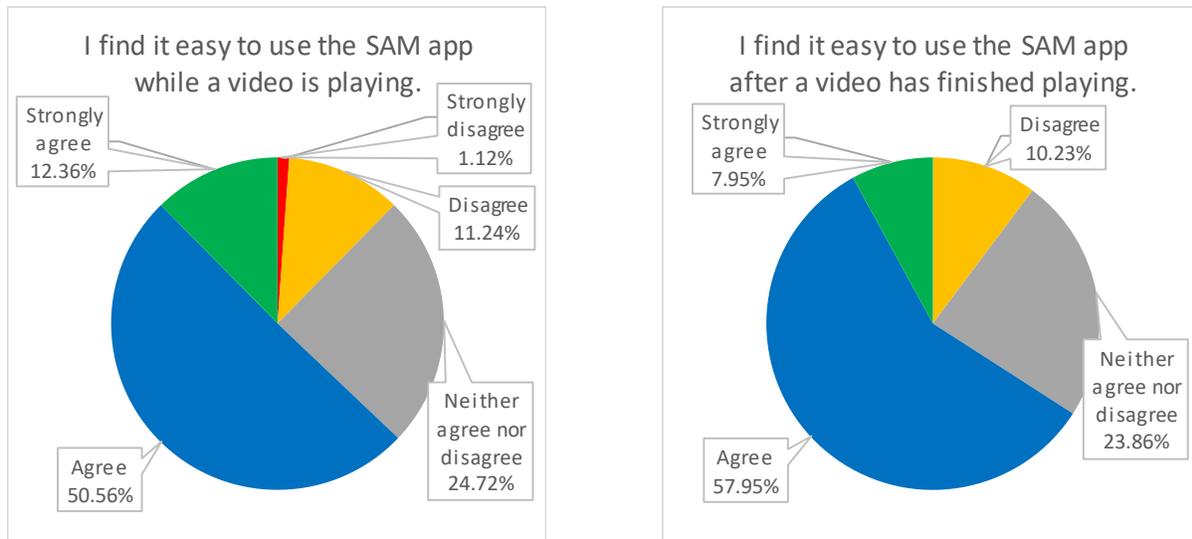


Figure 29: Responses to ease of use during playback vs. post-playback

The majority of participants agree that it is easy to find content that is shown during the runtime of a video, but a significant proportion of participants did not agree (32.95% neither agreed or disagreed and 6.82% disagreed with this statement).

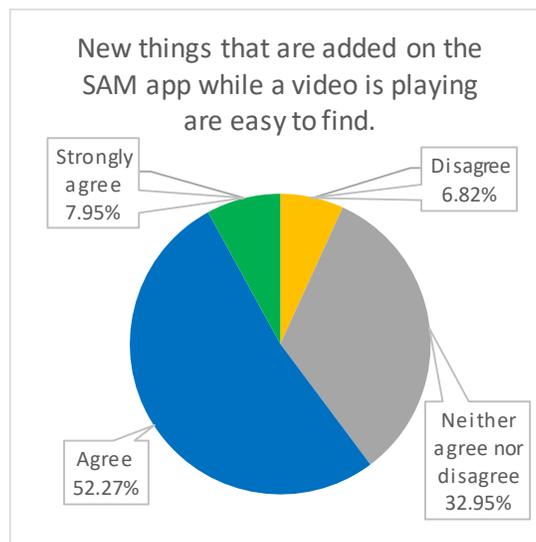


Figure 30: Responses to ease of use for newly added content

The majority of participants either agree or strongly agree that the SAM app makes it easy to find out more about topics related to a video (72.41%) and the majority of participants also agree or strongly agree that the SAM app improves viewing a video on TV (66.66% of participants agreed or strongly agreed).

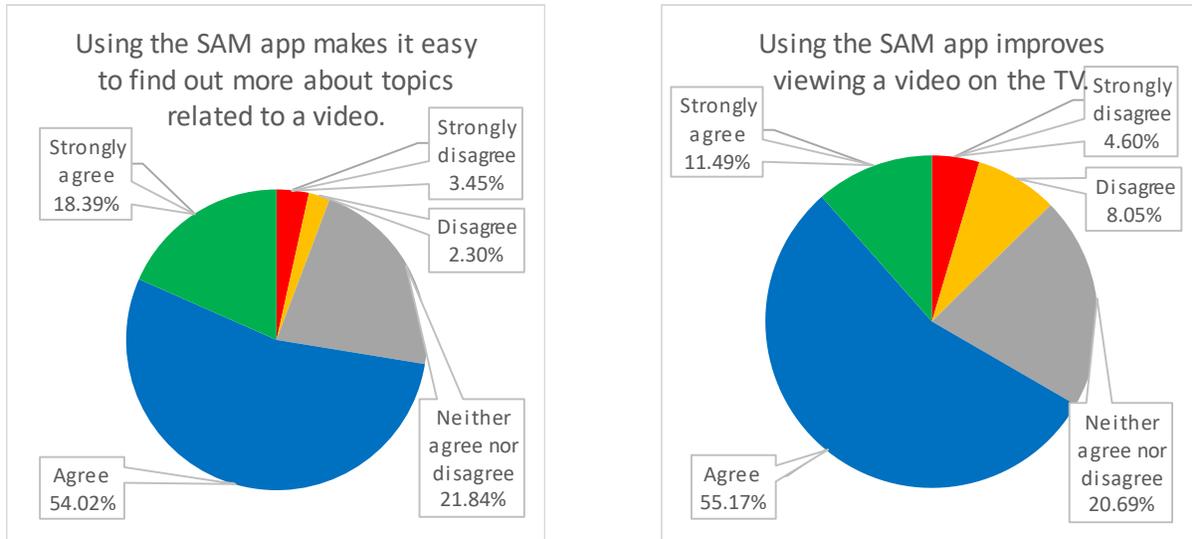


Figure 31: Responses to learning about related topics and improves viewing

Overall, just below 2/3rd of participants agreed that the SAM app was useful for finding out more about topics related to a video (61.37%), while 32.95% neither agreed nor disagreed and 5.68% of participants disagreed.

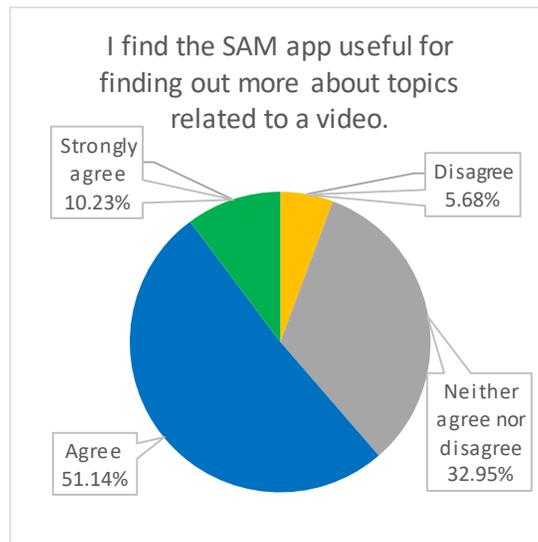


Figure 32: Responses to usefulness

In terms of enjoyability, 68.89% of participants agreed with the statement that they like using the SAM app to view content, while 49.43% of participants found the experience to be enjoyable. A similar proportion of participants felt engaged when they were using the SAM app to view content (51.69%).

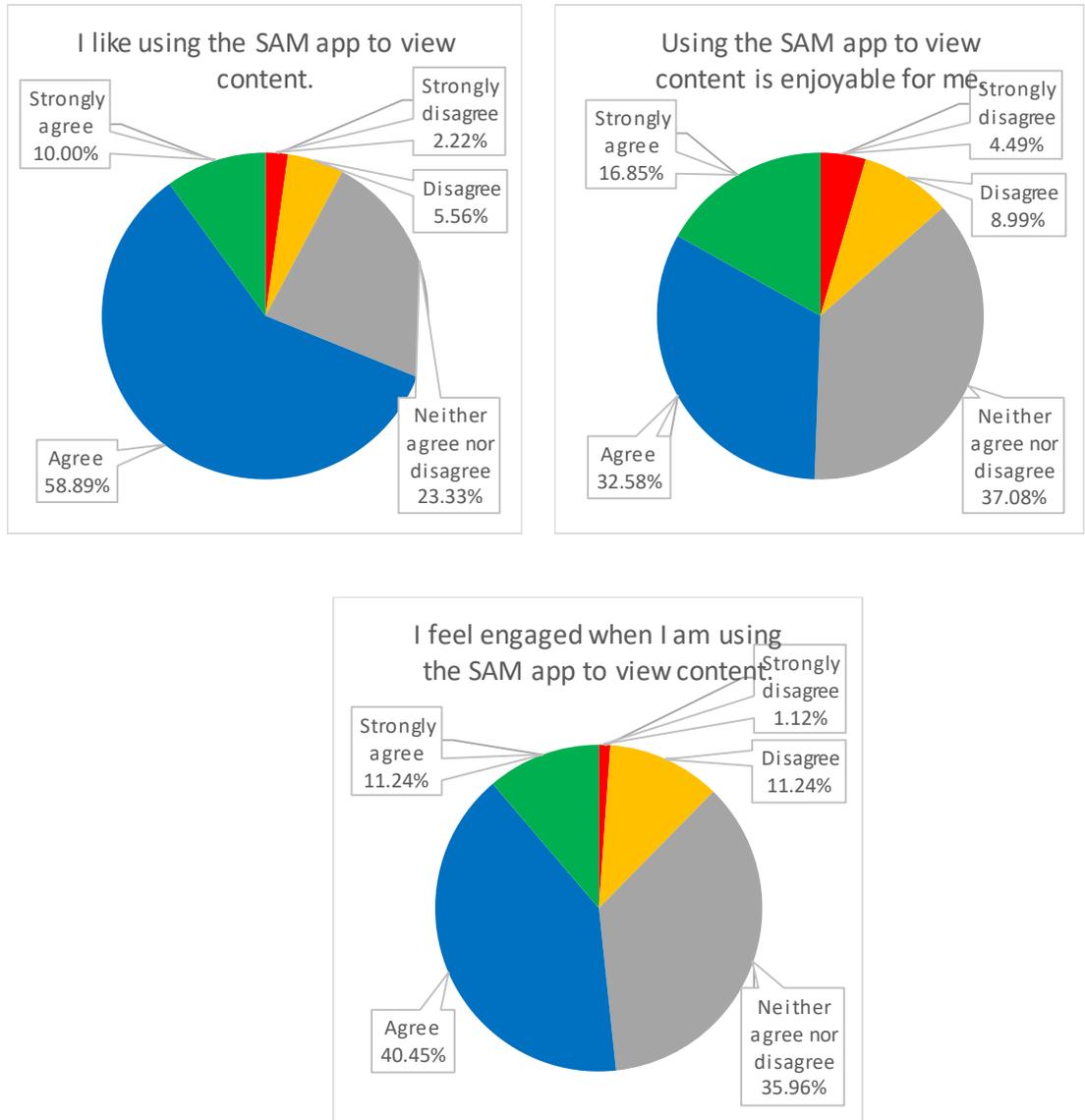


Figure 33: Responses to liking, enjoyability and engagement

In terms of behavioural intention to use, a larger proportion of participants agreed that they would use the SAM app at school (71.11%) than agreed that they would use the SAM app at home (60%). It should be noted that the first video to be presented to participants had a strongly educational background, which may have influenced responses to this item towards the expected usage potential of the SAM app.

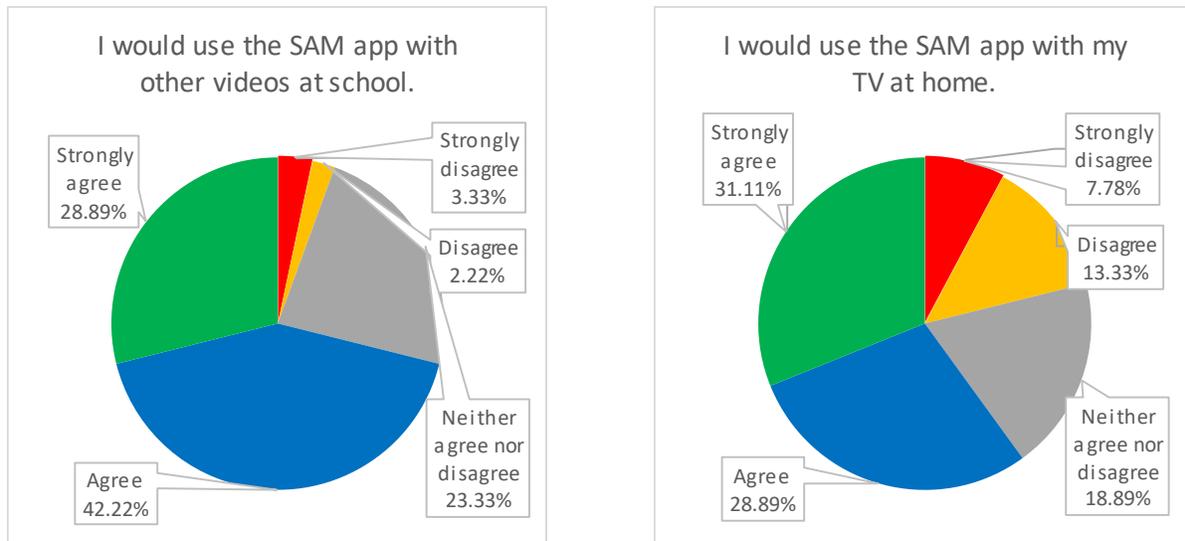


Figure 34: Responses to behavioural intention to use

4.4.2 Using the SAM Chat

The second session adds the SAM chat functionality to the user evaluation sessions in addition to providing a similar 2nd Screen experience as above. Questionnaire items for this session focus on the SAM chat.

The SAM chat functionality appears to be both easy to learn (80.46%) and easy to understand (68.96%) for the majority of evaluation participants.

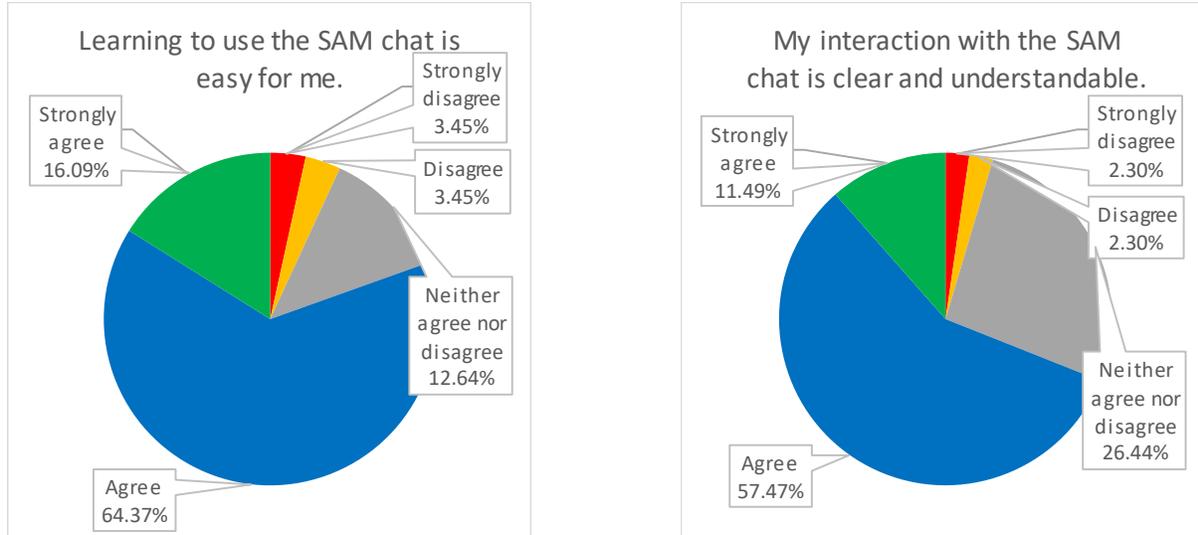


Figure 35: Responses to learnability and clarity of presentation

The overall evaluations for ease of use and usefulness of the SAM chat functionalities are similarly positive (77.27% agree or strongly agree on ease of use, 75.56% agree or strongly agree on usefulness).

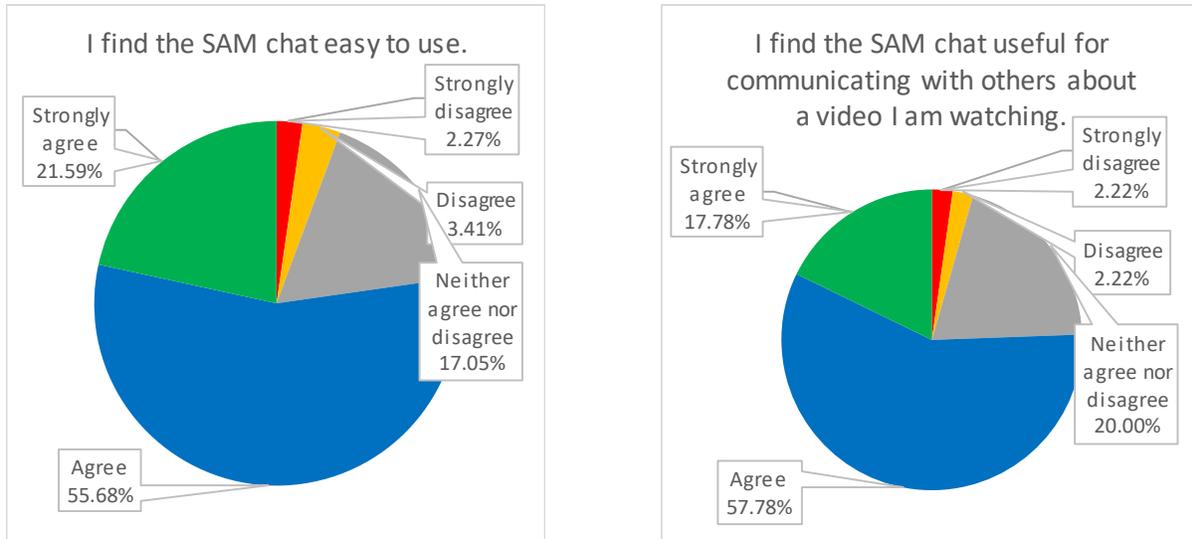


Figure 36: Responses to ease of use and usefulness

Overall, the majority of participants also liked using the SAM chat when it was made available to them (65.56% of participants agreed or strongly agreed, 28.89% neither agreed or disagreed, 5.55% of participants disagreed or strongly disagreed). As in previous questionnaire results, a smaller proportion of participants agreed that they felt engaged when using the SAM chat (49.44% agreed or strongly agreed).

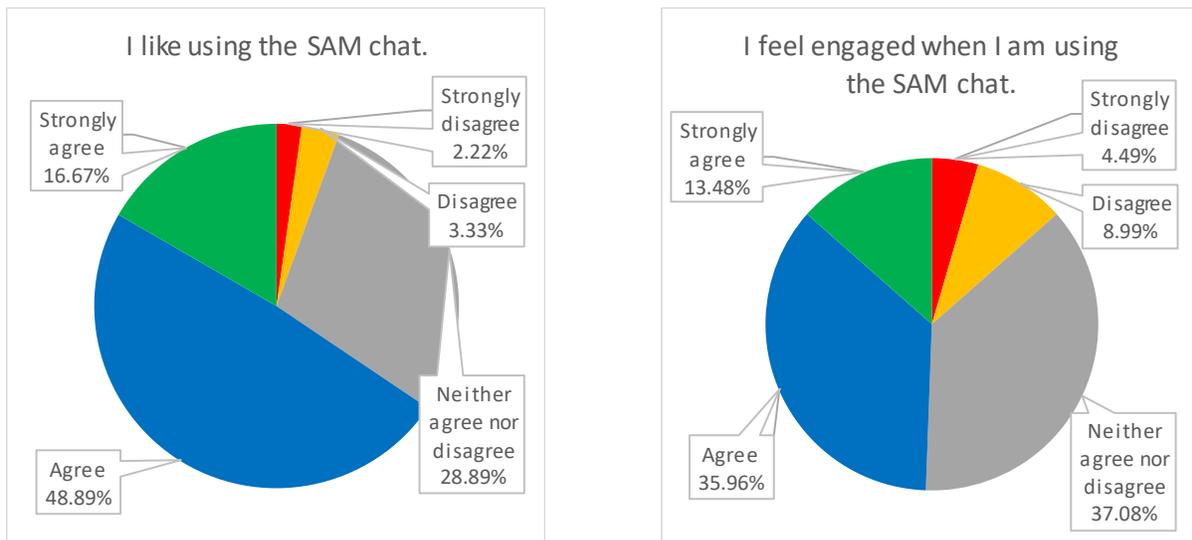


Figure 37: Responses to enjoyment and engagement

The behavioural intention to use the SAM chat is similarly high to the behavioural intention to use expressed for the SAM app in the first evaluation session, and higher for home use than for school use. 70% of participants agreed or strongly agreed that they would use the SAM chat at school and 74.44% agreed or strongly agreed that they would use the SAM chat at home.

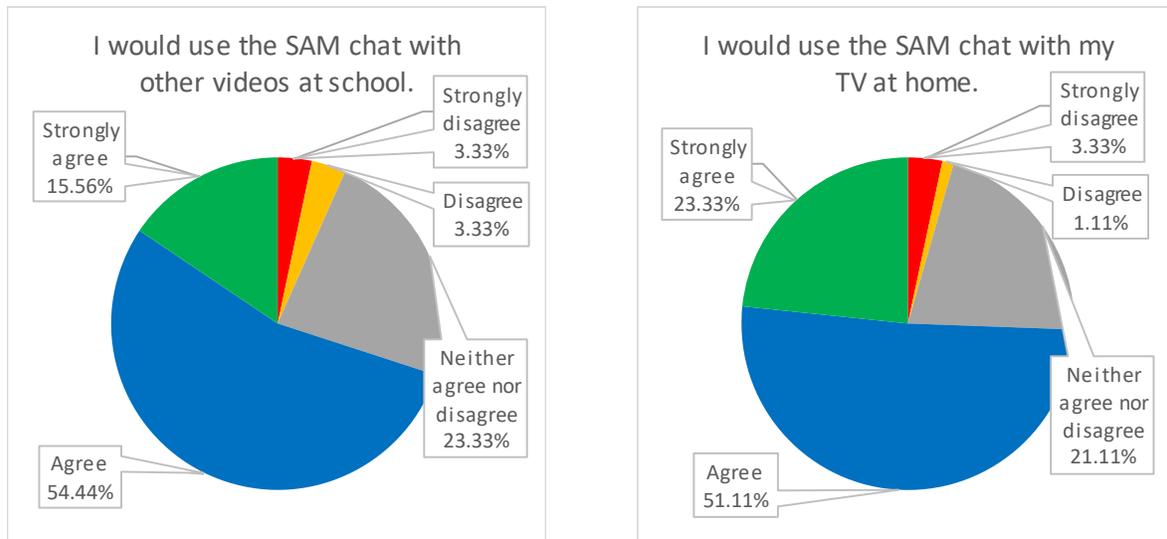


Figure 38: Responses to behavioural intention to use at school and at home

4.4.3 Using the SAM Communities

The third session introduces dynamic communities and invitations to communities provided to end users. Since dynamic community invitations are generated based on user interactions and it cannot be guaranteed that participants in the evaluation would trigger an invitation, all participants were invited to at least one community automatically while the video was playing.

Learnability and clarity of presentation are evaluated positively by a majority of participants, where 72.42% of participants agreed or strongly agreed that the system has high learnability and 56.98% of participants agreed that it was clear what the SAM communities do.

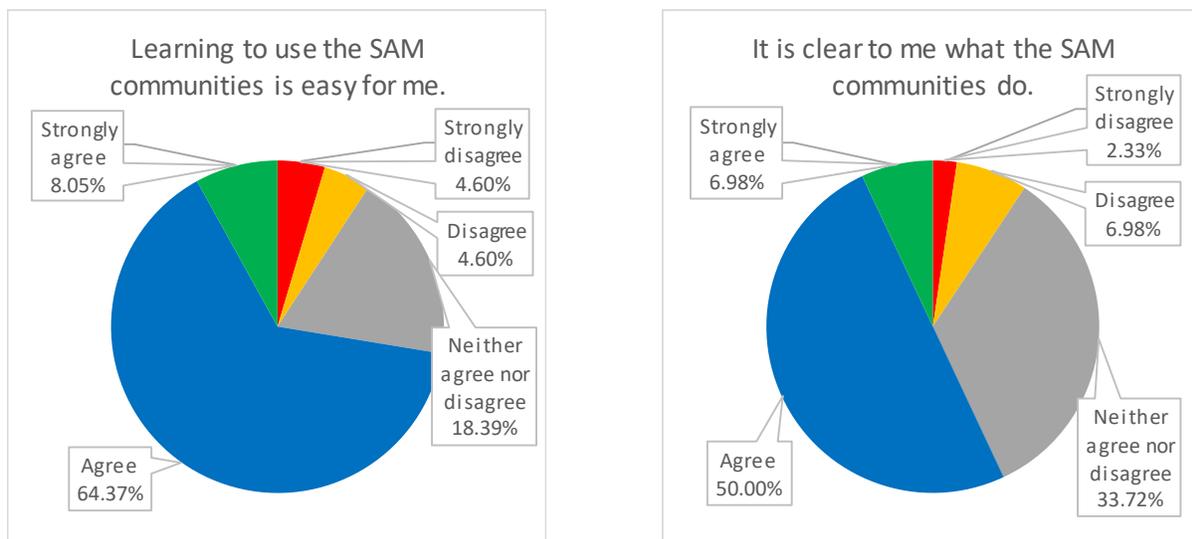


Figure 39: Responses to learnability and clarity of presentation

A majority of participants evaluated the SAM communities as positive with nearly identical responses to questionnaire items “I like using the SAM communities” (62.06% agree or

strongly agree) and “Using the SAM communities is enjoyable for me” (62.9% agree or strongly agree).

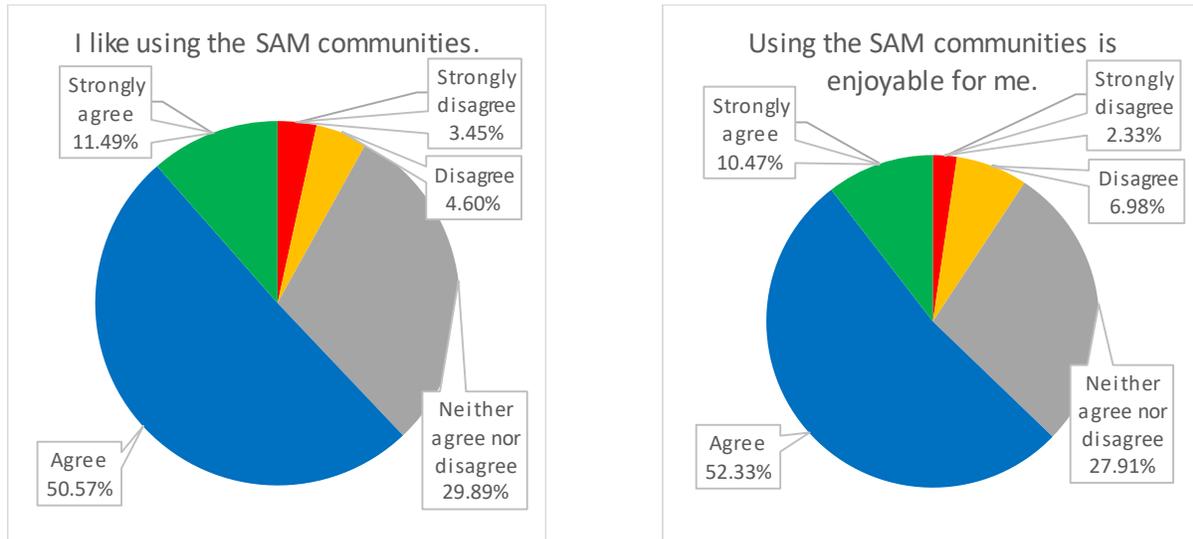


Figure 40: Responses to “enjoy-ability”

4.4.4 Using the SAM App

The fourth and final session did not introduce new functionalities to participants, but instead provided them with less specific instructions for how to use the system. Participants were not instructed to test specific functionalities, but to interact freely with the SAM app. Participants were also given more time than before to interact with the SAM app.

The evaluation of clarity of presentation and participants’ ability to divide attention between what happens in the 2nd Screen app and on the TV results in largely positive (73.25%) and generally positive (63.22%) responses respectively.

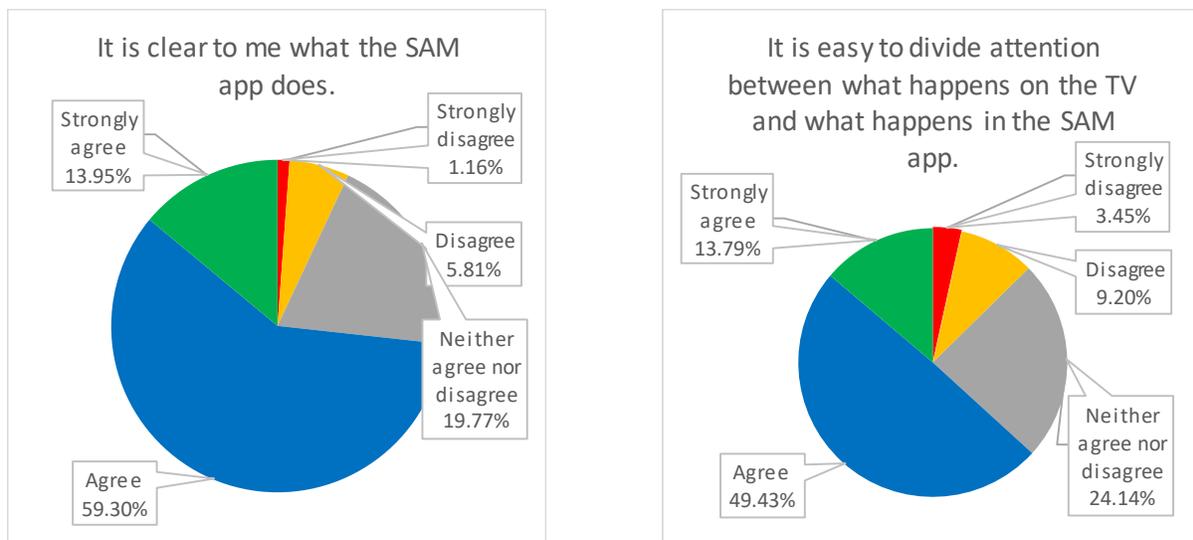


Figure 41: Responses to clarity of presentation

The majority of evaluations of the SAM app’s ease of use is also positive (68.97% agree or strongly agree vs. 6.9% disagree or strongly disagree and 24.14% neutral).

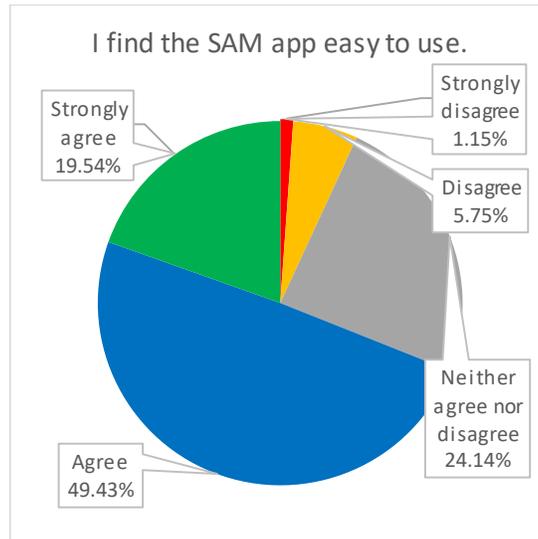


Figure 42: Responses to ease of use

The overall evaluation of the SAM app for finding additional information about topics in a video and for chatting and exchanging information with other students is also results in a majority of positive and relatively few negative evaluations: 63.64% of participants agree or strongly agree that the SAM app is useful for additional information about topics in a video, and 70.45% of participants find the SAM app useful for chatting and exchanging information.

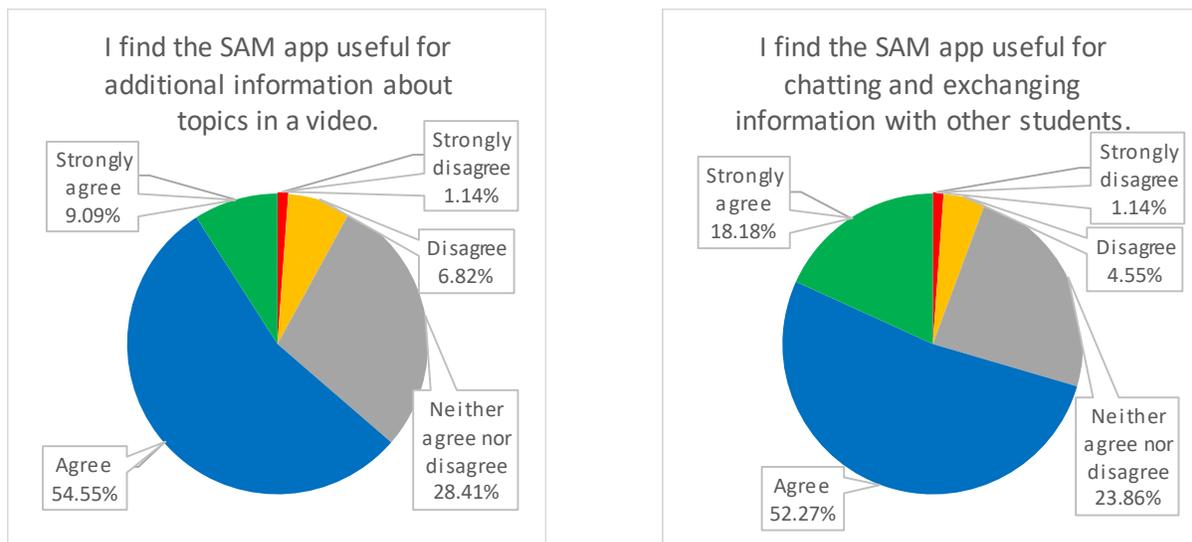


Figure 43: Responses to usefulness

Overall, participants also evaluate the overall SAM app as enjoyable and the majority of participants evaluate the overall SAM app as engaging (which is an improvement on earlier evaluations of engagingness). 72.72% of participants agreed or strongly agreed

that using the SAM app is enjoyable for them, and 62.5% of participants agreed or strongly agreed that they felt engaged when using the SAM app.

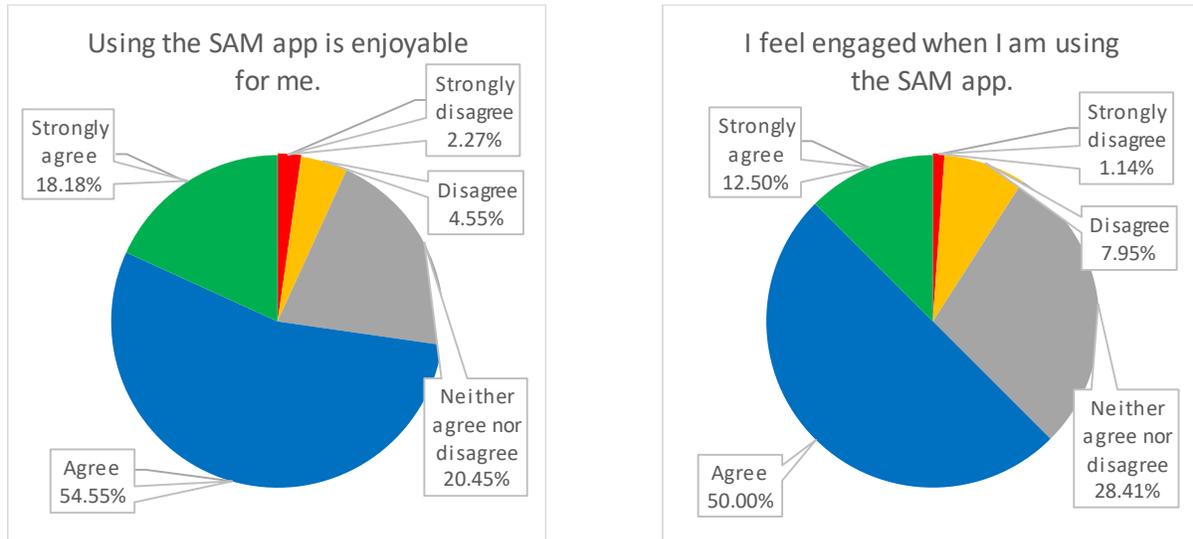


Figure 44: Responses to enjoyability and engagement

In terms of behavioural intention to use, participants express similar levels of interest in using the SAM app for further information about videos and for talking with friends and family with 65.91% and 70.46% agreement or strong agreement to the relevant statements respectively.

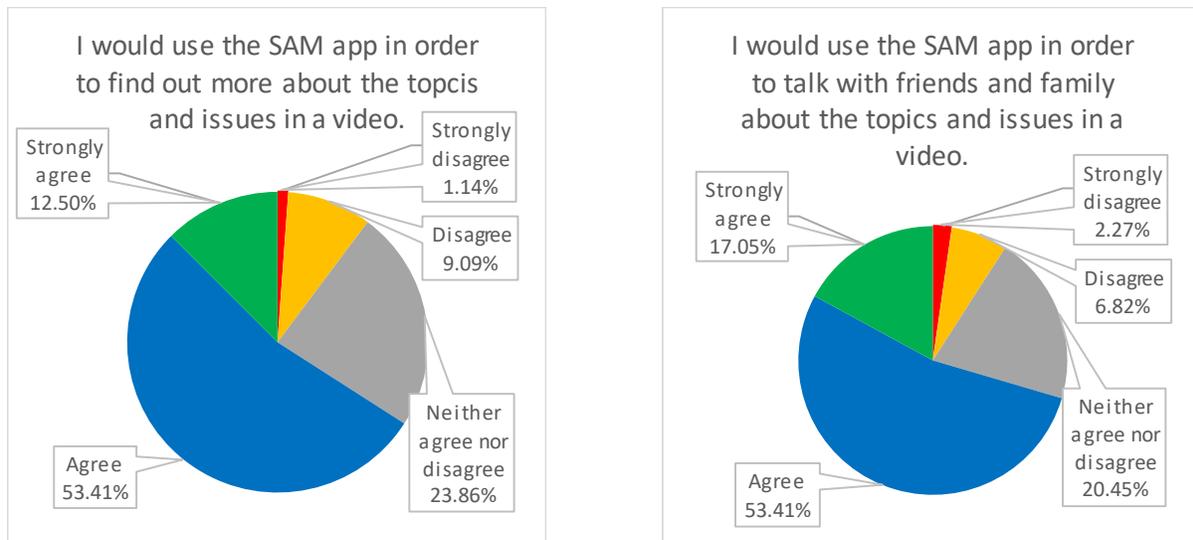


Figure 45: Responses to behavioural intention to use

In terms of school use, the majority of participants (78.41%) agreed or strongly agreed that the SAM app makes learning about a topic in school more interesting, and 67.05% of participants agreed or strongly agreed that the SAM app would encourage them to suggest topics for discussion in class.

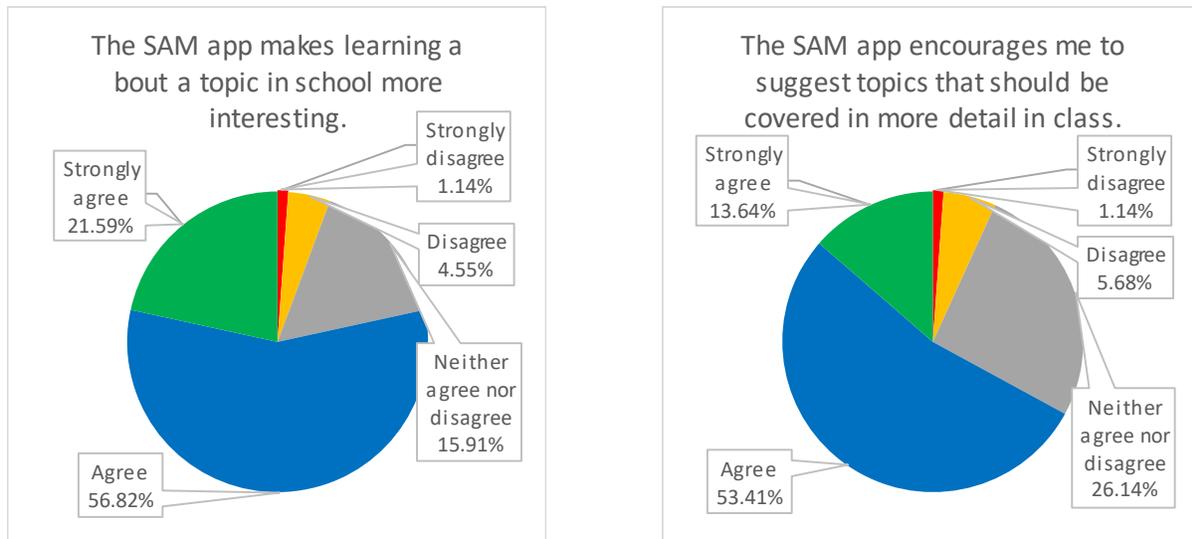


Figure 46: Responses to school use

4.5 Discussion

This short section summarises the main outcomes of the end user evaluation of the SAM app briefly. Additional recommendations and conclusions from this user evaluation are made in Section 6 of this deliverable.

4.5.1 Overall Outcomes

Overall, the summative end user evaluation of the SAM app and user experience resulted in positive evaluations of the SAM app and the functionalities provided to evaluation participants as representatives of a potential group of end users.

In terms of learnability and ease of use, while a majority of participants found the SAM app easy to use, a not insignificant minority of participants did not feel that the SAM app was easy to use (28.74%, see Section 4.4.1).

The majority of participants found the SAM app to be useful for all of the evaluated functionalities (see Section 4.4.4) in the judgment of 60-70% of participants, with 5-8% of participants disagreeing or strongly disagreeing with the same statement and the rest neither agreeing nor disagreeing. This likewise shows that there is still room for improvement in the SAM app. As a note of caution concerning the evaluation results in terms of usefulness it should be added that participants may well have evaluated both the SAM app and the 2nd Screen experience created for them and shown in the SAM app as a single entity. Some of the participants noted that they found the provided videos “boring” (as part of responses to open questions in the questionnaire), which may have influenced their evaluation of the overall user experience.

Participants generally find the SAM app enjoyable, but fewer participants than those who find the SAM app enjoyable also find it engaging. At the final session of the user evaluation, a larger proportion of participants also feels engaged, which may indicate a learning effect in using the SAM app or an increase in engagement when interacting with the “complete” SAM app with all functionalities available to use. Augmented content and social interaction functionalities are appreciated to very similar levels overall, with social interaction functionalities being slightly more appreciated than augmented content ones.

Participants also agreed to a large extent with statements concerning the applicability and usefulness of the SAM Platform in an education context. This could be seen as a good starting point for further investigating the use of SAM in an educational context.

Generally, participants slightly preferred using the SAM app in a school environment to using it at home (see e.g. Section 4.4.1). This may have been influenced by the classroom evaluation environment and the 2nd Screen experiences that were created by the SAM consortium in order to evaluate the SAM Platform (see SAM deliverable D8.2.2).

4.5.2 Comparing Formative and Summative Evaluation Results

SAM deliverables D8.4.1 and D8.3.3 describe the review and improvement processes that were carried out in order to improve the SAM app specifically in terms of visual appearance and ease of use. It is possible to directly compare evaluation results, since both user evaluations were carried out with distinct groups of evaluation participants and no participants took part in both evaluations.

Comparing the results for the first user session from both evaluations, it can be found that indeed the overall evaluations of learnability and ease of use have improved between the first and second user evaluation (see Section 4.3.1 and Section 4.4.1). Similarly, the enjoyability of the SAM chat functionalities improved between the formative and summative evaluation (see Section 4.3.2 and Section 4.4.2). The evaluation of SAM chat usability generally is not as conclusive, which the evaluators consider surprising given the significant changes between the version used for the formative user evaluation and the summative user evaluation. The overall evaluations in the respective evaluation sessions also improved in the summative evaluations in the majority of measures (see Section 4.3.4 and Section 4.4.4, with some exceptions, among which the better evaluation of the SAM app in terms of usefulness in the formative evaluation is the most striking one. It is not clear to the evaluators what may have caused this difference in the evaluation of usefulness between the formative and summative user evaluations.

Some of the changes that were made relate to specific questionnaire items present in both evaluation questionnaires. One significant change that was made concerns the presentation of content after a video had finished playing, trying to improve the accessibility of 2nd Screen content after the end of video playback. In the formative evaluation session, 55.32% of participants evaluated the ease of use of this functionality positively (agree or strongly agree). In the summative user evaluation session, 65.9% of participants agreed or strongly agreed with a positive evaluation of the ease of use of this features, and fewer participants disagreed or strongly disagreed (17.02% in the formative evaluation vs. 10.23% in the summative evaluation).

5 Evaluation of Voice Interaction Functionalities

This section reports on an evaluation of voice interaction functionalities that are part of the SAM 2nd Screen experience for end users. The end user evaluation was carried out by project partner Talkamatic at their premises in Goteborg, Sweden in October 2016.

5.1 Overview

During the formative evaluation of the SAM Platform in Spain, it was found that it was not realistically possible to evaluate voice interaction features in a realistic manner in the evaluation setting that was available onsite. This was due to the relatively large number of participants using a comparatively small school classroom setting and because participants would try different voice interaction commands simultaneously on different devices in close proximity to each other. Hence it was decided to carry out an additional user evaluation that focused on the voice interaction only at the premises of project partner Talkamatic, where an environment more aligned with the usage environment envisioned for voice interaction (living room with a single user interacting within microphone range of the SAM 2nd Screen device) could be evaluated.

The evaluation of the voice interaction functionalities was carried out in an office-style environment provided by Talkamatic in Gothenburg, Sweden. Participants were invited to participate in individual evaluation sessions in which they first interacted with the SAM Platform using “conventional” interaction mechanisms only and were then asked to use voice interaction features of the SAM Platform. Following that, they were asked to complete a questionnaire concerning their user experience.

5.2 Method

The number of participants was small (6), especially compared with the main trials. Their range of acquaintance with using smartphone applications and especially their voice features ranged from small to satisfactory. All participants were students and four of them were first year students at the Computational Linguistics master programme at Gothenburg University. The system was tested by one participant at a time. This allowed the tester to experiment with the system in its full extent. There were no obstructions or interferences between participants, as each session took place in a prepared room with only the tester and the supervisor present.

Specifically, each user was first given an instruction sheet (see Appendix 9.5) with some brief information about the nature of the SAM Android application and its connection with the 1st Screen application. It is worth to note that as 1st Screen a 24-inch computer monitor was used (Figure 47).



Figure 47: SAM Voice Trial Setup

After reading the information sheet, the user was asked to experiment with the application both with its traditional and voice interface for approximately 6 minutes. They were encouraged by the instruction sheet to use the voice help method in order to get used to the interface.

After the experimentation phase, a list of tasks was given to the participants (Appendix 9.5). They were asked to complete these scenarios. Whenever the user seemed to have mastered the specific scenario, he or she was instructed to move on to the next one.

The experimentation and the scenario phases were recorded on video.

The average time spent by the participants for all 6 scenarios was between 15 – 20 minutes. Given the limited amount of time the users had to acquaint themselves with the application and the voice control, some assistance was occasionally given in order to fulfil the tasks. This happened only after several failed efforts from the user to complete the task.

After all scenarios were executed, each participant was given a questionnaire to fill in (Appendix 9.5).

5.3 Evaluation

The small number of testers means that the collected results and conclusions should be considered to be of indicative nature rather than authoritative. Additionally, as will be explained in the rest of the section, allowing the users to acquaint themselves and use the system in less than 20 minutes may have been too short for participants to familiarise with the SAM platform and the voice interaction mechanisms.

Overall, the questionnaire is divided into four groups of questions which focus on the ease of use, individual feature evaluation and overall evaluation of the voice control within the SAM 2nd Screen application. Additionally, there were some questions about the strong and weak points of voice control which could be answered in free text.

In the first section where it is asked by the participants to evaluate how easy it was for them to learn using the app, the results lean towards the negative/hard side. Two participants thought that the interface was rather easy to use but the rest (4) think it was rather hard to master.

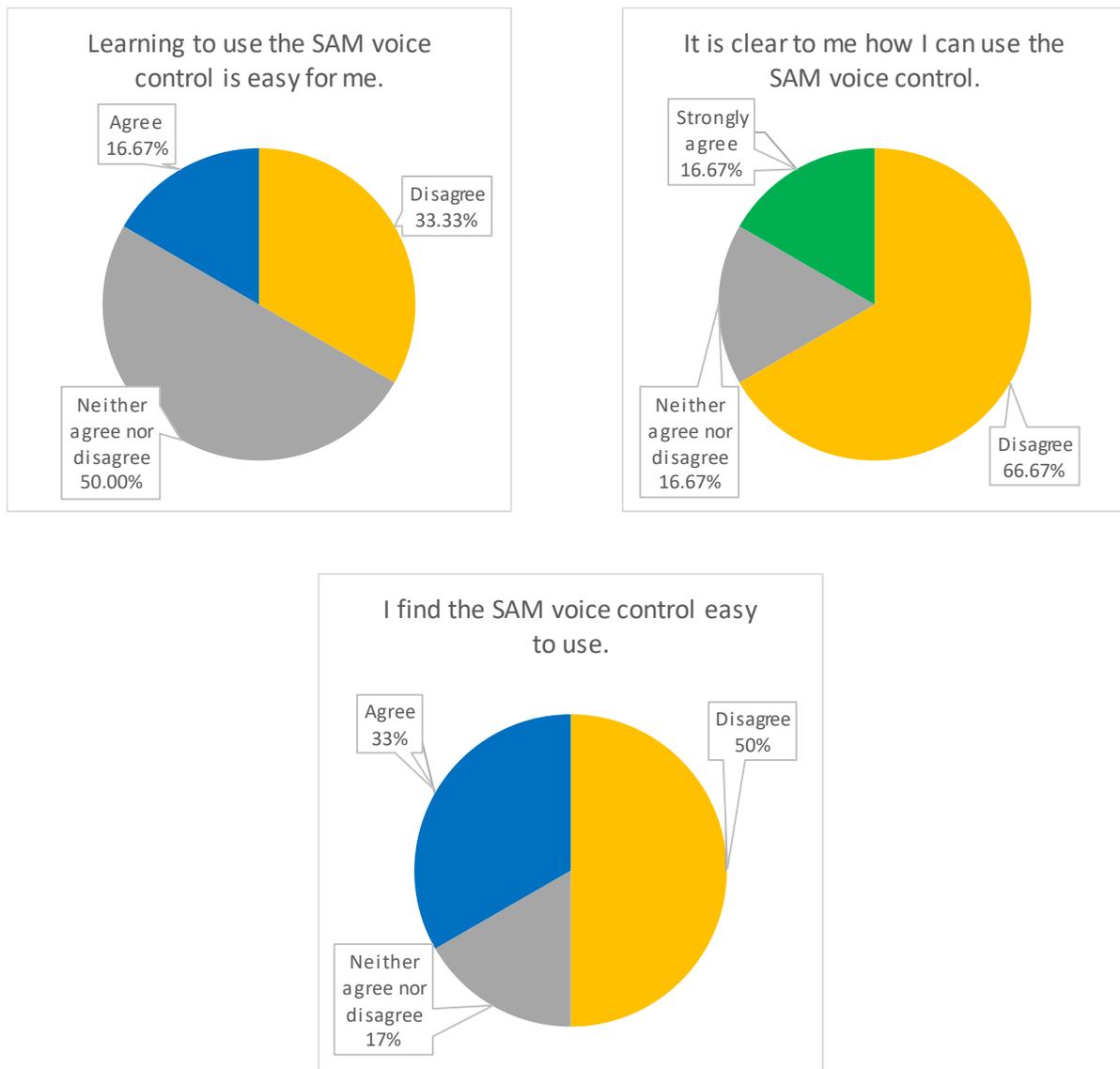


Figure 48: Voice interaction learnability, clarity of presentation and ease of use

Regarding individual features, most of them got positive rating by nearly all users. In the case of watching a user for future posts some participants thought that it was quite hard to learn to use it. However, in the free text section, the feature was praised for its functionality.

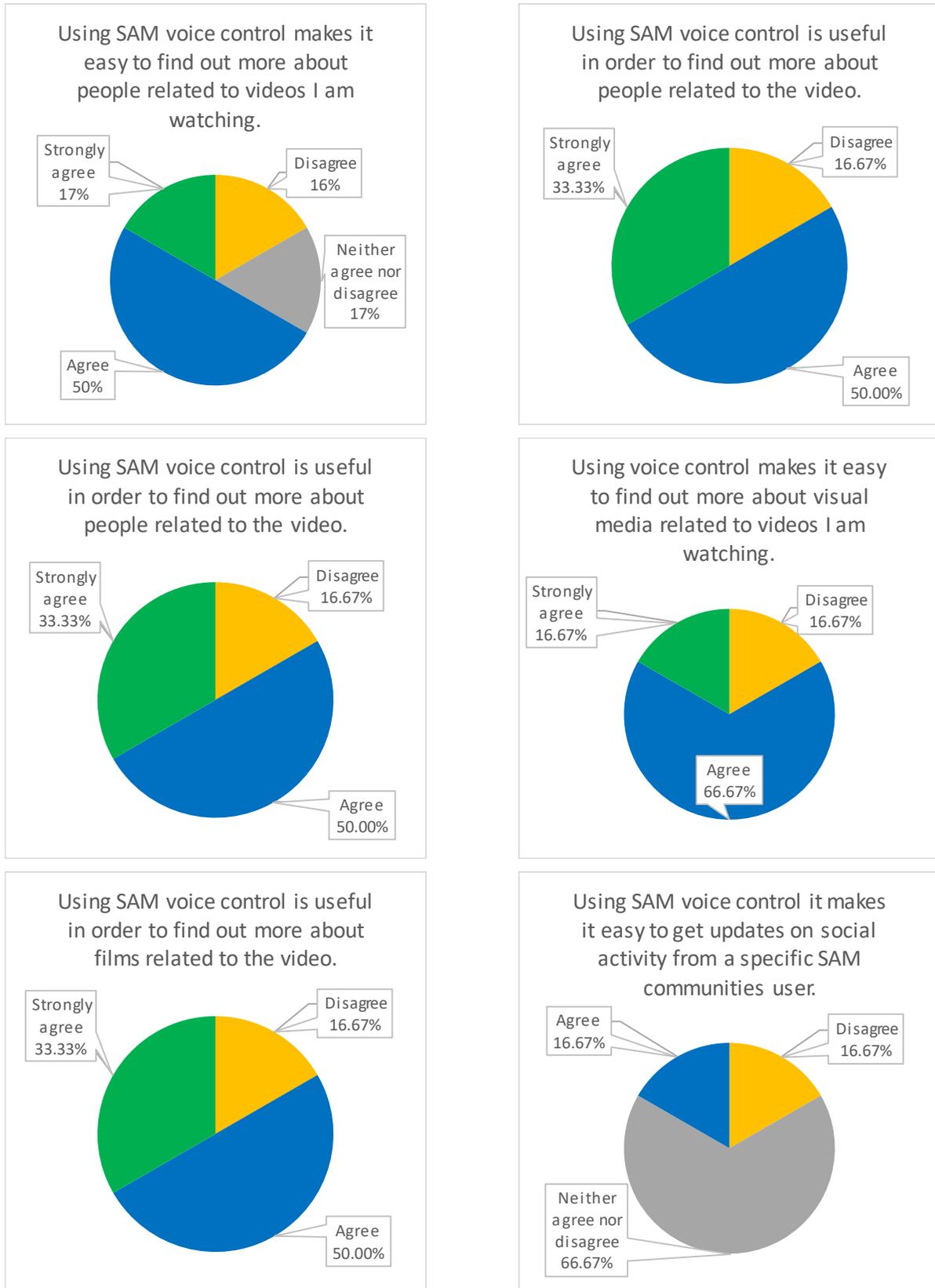


Figure 49: Voice interaction feature evaluations I

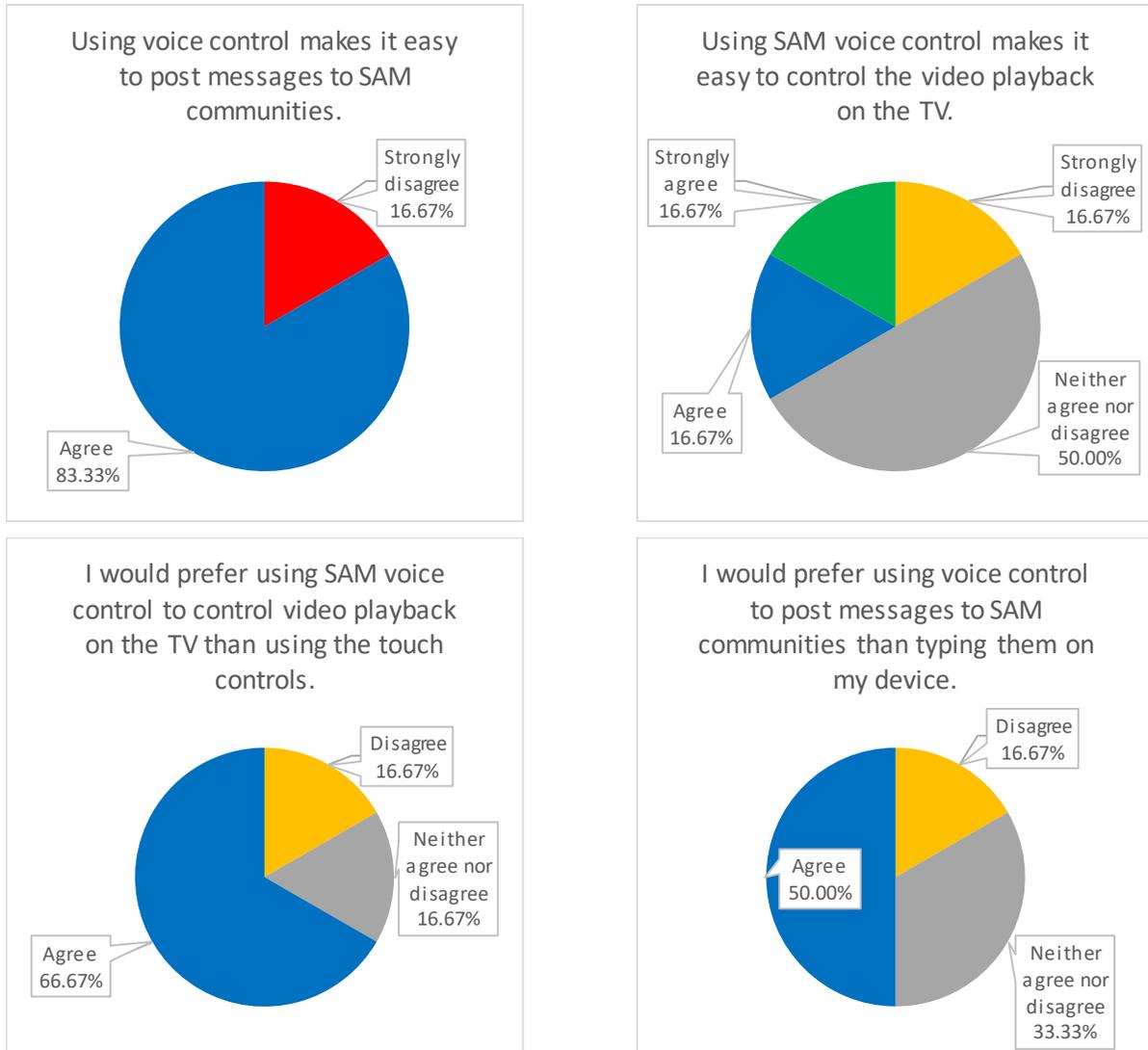


Figure 50: Voice interaction feature evaluations II

Questionnaire items concerning the overall evaluation of the voice interaction functionality resulted in ambiguous distributions of responses from the six participants. Three out of the six participants did agree that they would use the SAM voice interaction functionalities, which can be viewed as a positive outcome in terms of behavioural intention given the previous negative views concerning the system’s steep learning curve.

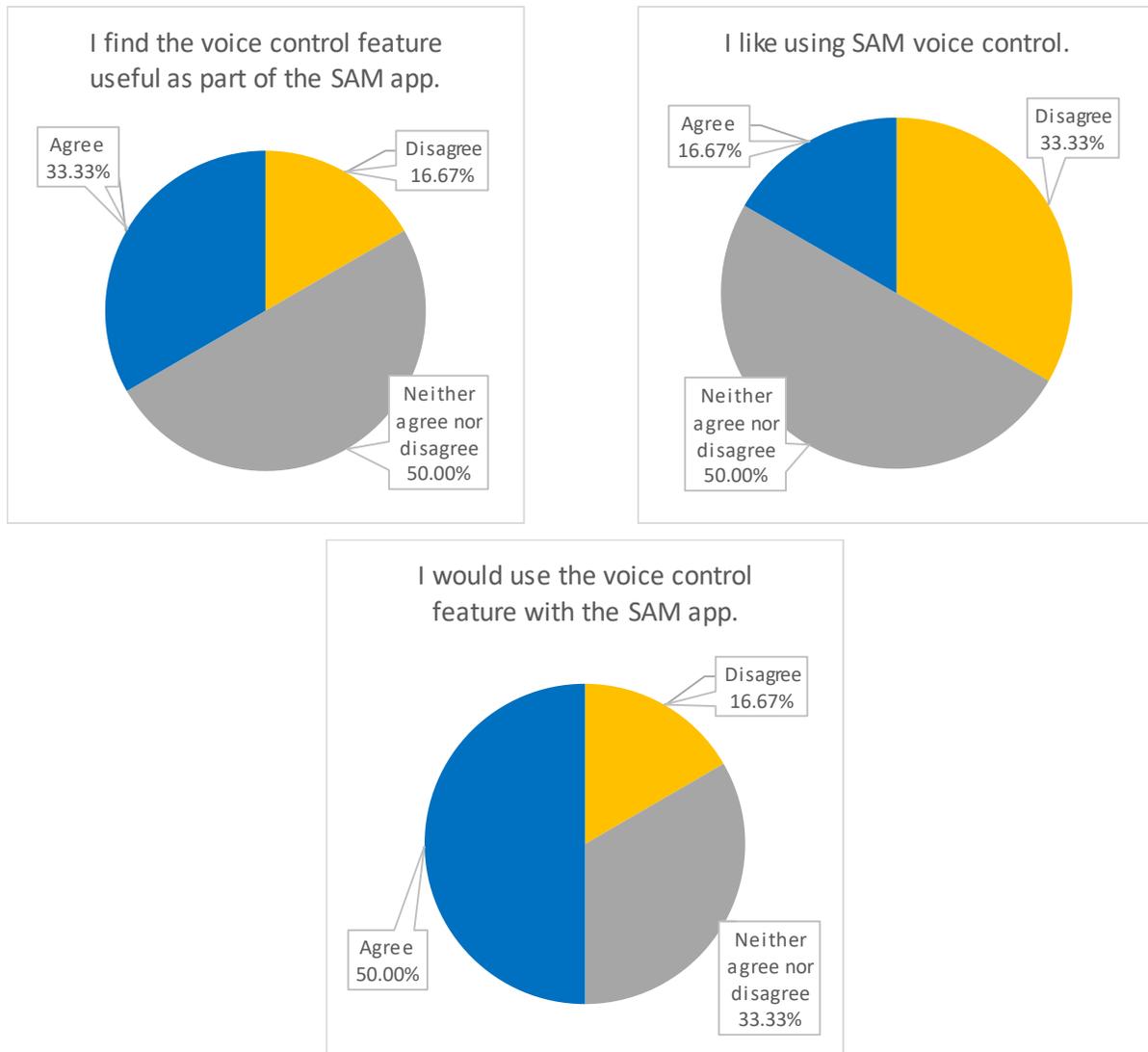


Figure 51: Voice interaction usefulness, enjoyability and behavioural intention

At the end, in the free text section in the question “What did you like about SAM voice control” the answers ranged from positive feedback on the video playback control, message post and user subscription functionalities to fast system responses and the system being enjoyable in general.

Regarding negative points of Voice Dialogue, the users mentioned “limited amount of options”, “difficulty to know how to phrase requests”, “microphone button being inconsistent”, “lack of hints”.

5.4 Discussion

Overall, the circumstances under which Voice component was tested are quite different than the ones it would be used in a commercial product. The users would have more time to experiment with the way the voice interface works. However, still the 15- to 20-minute evaluation sessions give significant help regarding to what can be done to improve the

interface. Additionally, the process of preparing the user trial scenarios helped identify conclusions as to how a voice system can be tested in a better way.

During designing the voice tasks and the way that they should be communicated to the users, a conscious effort was made to describe them to the users without hinting anything about the phrases that should be used. In that way, the intuitiveness of the interface could be tested. However, it was noticed that specific task descriptions tended to unwillingly prime the user for the phrases they used and obfuscated the actual objective of the task.

An alternative to the method used could be describing the tasks in images or showing the user how a task could be completed via a traditional user interface and then asking them to do the same though voice. However, the solutions are not applicable when a feature is voice-only (e.g. subscribing to a user's posts).

Another alternative and much more preferable is to change the user interface to require less guidance than it currently requires. Given the nature of the interface, it can be difficult to give instructions to trial users. Voice dialogue does have such a feature, but it was observed that several users did not follow this guidance. This may have to do with the length of the utterances (longer than the usual in-app utterances) or with the fact that they were voice only. It would be certainly better to have a visual "wizard" that would explain to the users how they should execute some commonly used scenarios. This would certainly leave deeper impression to the user.

Based on the feedback we got through questionnaires, we can observe that although the functionalities offered by the Voice component were rated highly, the overall evaluation of the component is lower. This can be interpreted as a sign that the voice dialogue integration in the 2nd Screen application has to be re-examined for a future product. It has to become much more prominent and guide the user through the recommended way of using it.

The high rating of specific functionalities offered by the component show that the component can complement shortcomings left by the traditional user interface (e.g. subscribing to a user's posts) or improve them and make them faster to use (e.g. playback control). Of course, improving the whole component's ease of use would benefit these functionalities as well.

Apart from the direct feedback by the users themselves, observations were made via the physical presence of the coordinator and through the recorded media. Specific behaviours were marked and they will be analysed in the following paragraphs.

For example, a certain user tended to use context from previously asked questions in order to ask a new one. After asking "When was Tim Burton born?" and getting response, he asked "Did he take any Oscars?"

Another user tended to use a lot of filler words and phrases. Phrases like "Hello, just tell me some information about Tim Burton" were hard to parse because of all the extract introductory content.

Additionally, the users got occasionally briefly confused with the behaviour of the microphone button. The voice component uses the Push-To-Initiate (PTI) mode for the activation of microphone button. This means that when the system is waiting for input from the user it starts automatically listening to him/her. In some cases, the users expected that they would automatically get the turn to speak again and this resulted to them talking without the system listening. However, this confusion was mostly brief and they quickly realised that they have to press the microphone button again.

Another consideration some testers expressed was the limited amount of options regarding the information that can be retrieved about a person or film. However, this limitation is not dictated by the voice component rather from the integration with SAM asset database and the information available in that database. Queries such as “when did Tim Burton get his first Oscar” or “is Tim Burton married” require more sophisticated data extraction methods and a broader database.

5.5 Conclusion

The user trials proved that the voice component can fill user wishes for an alternative, more powerful and more direct way to interact with the SAM application. Users were even able to single out functionalities for their usefulness. There were several answers that indicate that using SAM functionalities via voice is preferable and easier than the traditional way.

However, it was also shown that there is significant room for improvement regarding how the component is presented to users and how it is accessible to them.

In order for the voice dialogue component to be more useful as a feature in a future SAM 2nd screen application, its appearance has to be made much more prominent. Several auxiliary visual elements should be added to the SAM application that will make the component easier to discover and learn to use.

Internally, the voice component has to target towards a more robust grammar and a more easily programmable one so that larger user input variations can be covered. The PTI button behaviour has to be improved so that it never confuses the user. Being able to understand the context will also help the voice component be much more helpful to its users.

In order to test the Voice Dialogue component in the future, it would be useful to investigate alternative methods of describing the tasks to the testers and maybe use a mixture of them.

6 Best Practices and Recommendations

Which conclusions can be drawn from the evaluation results presented in the preceding sections of this deliverable? What has gone well and can be recommended to others and where should further effort be invested, in particular with a view to potential commercialisation of the SAM Platform?

6.1 Production Scenario

Concerning the Production Scenario evaluation, the functionalities and the concept implemented by the SAM Platform have been recognised and overall evaluated positively by evaluation participants that represent editorial staff that would be involved in creating 2nd Screen experiences using a SAM-style platform. The overall concept appears to be appreciated by the vast majority of participants. In the view of the evaluators, this validates the project goal of creating a unified platform for the editorial creation of 2nd Screen experiences.

While SAM focuses on the implementation of the overall set of functionalities that are necessary for realising this functionality, the user evaluation with participants from Deutsche Welle shows that the functionalities need to be structured into a clear workflow structure that is easy to follow and that is as streamlined as possible in terms of reducing unnecessary steps in workflows, clearly indicating which steps are to be taken when and automating as many activities as possible. While the relevant core functionalities for this are all present as part of the SAM Platform, organising them in the user interface to better support the necessary workflow and removing or minimising unnecessary efforts through, e.g. pre-sets, will further significantly improve the user experience.

The evaluation carried out at BDS also shows a shortcoming of an approach where all functionalities of a workflow are provided as part of a single system. The user evaluation at BDS resulted in a much more negative evaluation of the evaluated system components – in the view of the evaluators this happened largely because users at BDS already use systems with comparable and more robustly developed feature sets, and because using the SAM Platform does not provide any tangible benefit to the BDS participants in the user evaluation. From this, the evaluators derive the recommendation to critically review whether any further focus should be placed on the metadata editing functionalities of the SAM Platform, or whether rather, specifically for further exploitation, focus should be placed exclusively on the provisioning of APIs for the integration of existing components and of a robust scheduled importing mechanism (which was not fully implemented for the SAM research prototype).

6.2 Prosumption Scenario

The best practices and recommendations from the Prosumption Scenario evaluation relate both to the evaluation process and to the planning of end user interface design in research projects such as SAM.

In terms of the evaluation procedure, the formative evaluation and results from the summative evaluation after updates were made (described in SAM deliverable D.8.3.2) show, as has been shown many times elsewhere, the importance of an iterative evaluation approach in particular when end user interface design is concerned. While it can be difficult to directly involve end user groups in sufficiently large numbers throughout research projects such as the SAM Project, repeated interactions with end users will be

beneficial for the development of end user interfaces that are evolutionary in terms of their approach to user interface presentation to the end user (as the SAM project is).

In terms of user interface design, an important outcome of the process the project went through is to focus on meeting end user expectations given the current state of practice in user interaction provided and in terms of the end user devices anticipated to be available to participants. The initial prototypes of the SAM Platform end user interface anticipated that devices with larger screen real estate than smartphones would be more prominent in end user usage than the actual adoption at the end of the project duration turned out to be. This has led the team to redesign the SAM user experience so that it is more focused on small screen real estate while still being pleasant view on larger screen devices, effectively switching the lead development platform from tablet-sized devices to smartphone-sized devices. As part of this process, the user experience of the SAM app was also updated in order to more closely match expectations from using current smartphone apps than the previous SAM app did.

The evaluators suggest two best practices and recommendations to projects in similar environments to SAM based on this: first, to base assumptions not on predictions of future device adoption but on the current device adoption by the target audience (unless specific devices are part of a core project proposition); second, to explicitly plan an updating cycle into development process for end user interfaces that are expected to be trialled with end users that are not used to interact with prototype-level software.

The goal of the evaluation of prototype systems such as the SAM system should here not be to create the nicest-looking end user interface possible, but to ensure that the user interface is sufficiently well developed to not bias evaluation participant responses against a system based on visual appeal or basic usability issues. This is particularly important when dealing with participants who cannot be expected to regularly interact with prototype software or who have a specific level of proficiency and experience with using software or hardware systems (e.g. with participants from Computer Science courses).

7 Conclusion

This deliverable presents the results of the SAM user evaluations carried out in the third and final period of the SAM project. The evaluations covered both the SAM Production Scenario activities and the SAM Prosumption Scenario activities.

The main findings for the Production Scenario are that while the editorial workflow is evaluated as generally functional and useful, functionalities for metadata editing and search that replicate functionalities available in commercial products are evaluated more negatively. Overall, the prototype status of the project output is recognised and participants in the evaluation note that further work on system usability would be required for commercialisation of the project.

The main findings for the Prosumption Scenario are that, overall, the SAM app in its improved version is appreciated by the majority of evaluation participants and that the evaluation participants also recognise potential for the SAM app in an education context, where it was evaluated. It should be noted that the evaluation results show that a significant minority of participants does not evaluate the SAM app explicitly positive but rather neutral in important aspects such as ease of use and the learnability of features; this should be addressed in commercialisation efforts, since ease of use and learnability are hurdles to take-up by end users that may prevent adoption of the system by a significant minority of potential end users. The evaluation of voice interaction functionalities found that the integration of voice functionalities as part of the user interface should be improved, while a majority of participants found the actual voice interaction functionalities to be reasonably good.

The project participants involved in the user evaluations would like to thank all participants, and in particular the school partners involved in the user evaluation in the two partner schools in Spain. We are very happy that their participation in the project has been a good experience for them as well, as is evident from their summary letters provided to the project (see “Appendix B: School Partner LOPD Confirmation Letters”).

8 References

[DAV89] F. Davis, "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology", in: MIS Quarterly, vol. 13, no. 3, 1989, pp. 319-339.

9 Appendix A User Evaluation Materials

9.1 Production Scenario DW Online Questionnaire

SAM Production Platform

Questionnaire

*Required



Please provide your age: *

18-35

35+

Please indicate your gender *

Male

Female

Please provide your current occupation *
(e.g. journalist, researcher, student, ...)

 20% completed

Powered by  Google Forms

This content is neither created nor endorsed by Google.
[Report Abuse](#) - [Terms of Service](#) - [Additional Terms](#)

SAM Production Platform

SAM Production Tool Trial

Goal: Create a second-screen experience for a DW video.
Detailed tasks are provided separately.

- (1) Search and Link content
- (2) Synchronise related content on a timeline
- (3) Set and Save - publish
- (4) Show the results as a second-screen experience

Conclude the assignment by giving feedback according to a five-point-scale:

Please mark the box that best matches your opinion. Please answer the questions as fully as you feel able to. If not differently specified, the questions below require an answer on a scale from 1 to 5, as specified below.



Strongly disagree Disagree Neutral Agree Strongly agree

1 2 3 4 5

« Back

Continue »

 40% completed

Powered by


This content is neither created nor endorsed by Google.

[Report Abuse](#) - [Terms of Service](#) - [Additional Terms](#)

SAM Production Platform

*Required

Production Platform

It is easy to enhance the existing metadata *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

It is easy to find related data with the SAM tool *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

It is easy to add links with the semantic tool *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

It is easy to add links with the linker *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

It is easy to synchronise the related content using the timeline *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

It is easy to publish items *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

It is easy to configure style and branding *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

It is easy to preview the 2nd screen experience in the production platform *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

SAM is overall a useful tool to create a 2nd screen experience *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

The 2nd screen end-user dashboard is useful and appealing *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

« Back

Continue »



SAM Production Platform

*Required

Semantic Tool Details

Assets found via the "Search Assets" function in the "Semantic" tab are relevant to the search *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

Assets found via the "Search Assets" function in the "Semantic" tab are useful for the search *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

Wikipedia articles found via the "Search Assets" function in the "Semantic" tab are relevant to the search *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

Wikipedia articles found via the "Search Assets" function in the "Semantic" tab are useful for the search *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

How well do different methods for finding Assets in the "Search Assets" function in the "Semantic" tab work for you? Please rank the four options below. Only rank search queries that you have tried and leave the remaining ones blank:

	ranking 1 (best)	ranking 2	ranking 3	ranking 4
custom text	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
title	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
description	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
keywords	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

« Back

Continue »



SAM Production Platform

*Required

Overall SAM Performance

The SAM system was overall easy to use and the main functionalities were easy to find. *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

How would you judge the SAM platform in general?

Which are from your point of view the major highlights and advantages of the SAM application?

Which are from your point of view the major shortcomings and disadvantages of the SAM application?

Which recommendations do you have for the SAM platform?

Do you have any other remarks or comments?

[« Back](#)

[Submit](#)



100%: You made it.

Never submit passwords through Google Forms.

9.2 Production Scenario BDS Online Questionnaire

SAM Production Platform Questionnaire - BDS

Questionnaire

* Required



Please provide your age: *

18-35

35+

Please indicate your gender *

Male

Female

Please provide your current occupation *
(e.g. librarian, archivist, researcher, editor, student, ...)

 20% completed

Powered by  Google Forms

This content is neither created nor endorsed by Google.
[Report Abuse](#) - [Terms of Service](#) - [Additional Terms](#)

SAM Production Platform Questionnaire - BDS

SAM Production Tool Trial

Goal: Link BDS items to other BDS assets and external content

Detailed tasks are provided separately.

- (1) Search and annotate content
- (2) Link items
- (3) Change and save settings

Conclude the assignment by giving feedback according to a five-point-scale:

Please mark the box that best matches your opinion. Please answer the questions as fully as you feel able to. If not differently specified, the questions below require an answer on a scale from 1 to 5, as specified below.

Strongly disagree Disagree Neutral Agree Strongly agree

1 2 3 4 5

« Back

Continue »

 40% completed

Powered by
 Google Forms

This content is neither created nor endorsed by Google.

[Report Abuse](#) - [Terms of Service](#) - [Additional Terms](#)

SAM Production Platform Questionnaire - BDS

* Required

Production Platform

It is easy to enhance the existing metadata *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

It is easy to find related data with the SAM tool *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

It is easy to add links with the semantic tool *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

It is easy to link various BDS product assets such as films and books *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

It is easy to apply brand and consumer rules *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

It is easy to publish items *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

It is easy to preview the linked assets in the production platform *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

SAM is overall a useful tool to link assets *

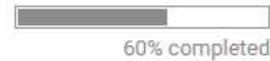
- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

SAM is overall a useful tool to offer metadata on a marketplace *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

User dashboard is useful and appealing *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

[« Back](#)[Continue »](#)

SAM Production Platform Questionnaire - BDS

* Required

Semantic Tool Details

Assets found via the "Search Assets" function in the "Semantic" tab are relevant to the search *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

Assets found via the "Search Assets" function in the "Semantic" tab are useful for the search *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

Wikipedia articles found via the "Search Assets" function in the "Semantic" tab are relevant to the search *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

Wikipedia articles found via the "Search Assets" function in the "Semantic" tab are useful for the search *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

How well do different methods for finding Assets in the "Search Assets" function in the "Semantic" tab work for you? Please rank the four options below. Only rank search queries that you have tried and leave the remaining ones blank:

	ranking 1 (best)	ranking 2	ranking 3	ranking 4
custom text	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
title	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
description	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
keywords	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

« Back

Continue »



80% completed

SAM Production Platform Questionnaire - BDS

* Required

Overall SAM Performance

The SAM system was overall easy to use and the main functionalities were easy to find. *

- 1 - Strongly disagree
- 2
- 3
- 4
- 5 - Strongly agree

How would you judge the SAM platform in general?

Which are from your point of view the major highlights and advantages of the SAM application?

Which are from your point of view the major shortcomings and disadvantages of the SAM application?

Which recommendations do you have for the SAM platform?

Do you have any other remarks or comments?

« Back

Submit



100%: You made it.

Never submit passwords through Google Forms.

9.3 End User Trial Instruction Sheet & Questionnaire

Instruction sheet

Welcome

Hello and welcome to this test of SAM. SAM is a system where you can use a TV and your phone, tablet or computer together and have an integrated experience: what is on the TV and the information on your device work together and your device gives you additional information about what is happening on the TV. You can also chat with your friends while the programme is playing and after.

We will ask you to watch videos and use your phone or tablet at the same time. You should already have the SAM app installed on your phone now. First, we will start that app and make sure that you are ready to go.

Here is our checklist:

1. Please check whether your device battery still looks okay. If not, please ask for help.
2. Please set your sound volume to a low level that you can still hear at your seat.
3. Please make sure that you are connected to the right Wifi network. We will tell you which one to use.
4. Open the app. You should see a login screen or a notification that you are not logged in. Please use the user name and password that we have given you on a separate piece of paper in order to log in.
5. You may be asked to select a SAM "1st Screen" if you use the SAM Android app. There should be only one, please select that one from the list.
6. You should now see a largely empty "SAM Screen". This is where SAM content will be shown. It should display the following text: "SAM is ready to deliver related content and communication streams for any SAM video you choose. Just select one of the SAM videos on your TV SAM app."

If your app still asks you to log in at this point, please try to log in once again. If you have logged in and you are not sure whether you are ready, please ask for help.

Some expressions that we use

As with all technical things, we use special words to describe things. Here are the ones we think you should know:

- A "SAM experience" is what you see inside the app window when the TV plays a video.
- The "SAM chat" is the chat window that you can see with some of these SAM experiences.
- The "SAM communities" are groups of people that can chat about a topic.
- "This bundle" is this set of sheets of paper that is stapled together. We'll ask you to give it back at the end.

How it works

We have prepared four videos for the SAM app for you. We have prepared some information for you for each of these videos. For each of these four videos we will go through the same "procedure" with you:

1. We will ask you to read information for the upcoming video first.
2. Then we will show you the video twice with a short break between the two rounds.
3. After that, you will have some time to use the SAM app when the video has finished playing.
4. At the end, we have a short questionnaire for each of these videos that we will ask you to complete.

You have already received the information and the questionnaires for all four videos. Do you have any questions about this? Please ask them now.

When all are ready, please read the information for the first video on the next page.

First video

We will now show you a video and the first new SAM experience. Remember, a SAM experience is everything that is shown in the SAM app.

While you are watching a short video on TV, you will be able to use the SAM app that provides additional information related to the video that is shown on the TV.

Please try to read the additional information shown in the SAM app and watch any of the videos that may interest you. The SAM app does not show all information for a video all the time. At the bottom of the screen you will find an option to show the things that were shown previously and then removed from the screen.

We will show the video twice, and there will be time to use the SAM app after the video has finished. After a few minutes we will ask you to stop and fill in the short questionnaire that is on the next few pages of this bundle.

The first video that you will see is about the current situation of bees worldwide and what would happen if bees disappeared.

When you are asked to do so, please complete the first questionnaire on the next page.

First Questionnaire

This is the first questionnaire. Please complete this once you are done with the first video and the tasks from the instruction sheet. Please always only select one option for each question from below the question.

About you

Please answer the following questions about yourself. Please pick only one answer for each question.

How old are you?

11 12 13 14 15 16 17 18 19 20

Are you female or male?

Female Male Would rather not say

Which device are you using for this test?

Android phone Android tablet Apple iPhone Apple iPad Other smartphone

Other tablet Computer Other device

Using the SAM app

The following pages contain statements, usually as a single sentence. Please use the tick boxes below the sentence to tell us whether you strongly disagree, disagree, neither agree nor disagree, agree or strongly agree with the statement above the tick boxes. As before, please only select one of the five options for each statement.

Learning to use the SAM app to view content is easy for me.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

It is clear to me what the SAM app does.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

Please continue on the next page.

My interaction with the SAM app is clear and understandable.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find the SAM app easy to use.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find it easy to use the SAM app while a video is playing.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find it easy to use the SAM app after a video has finished playing.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

New things that are added on the SAM app while a video is playing are easy to find.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using the SAM app makes it easy to find out more about topics related to a video.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using the SAM app improves viewing a video on the TV.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using the SAM app enables me to find out more about topics in a video without effort.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find the SAM app useful for finding out more about topics related to a video.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please continue on the next page.

I like using the SAM app to view content.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using the SAM app to view content is enjoyable for me.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I feel engaged when I am using the SAM app to view content.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I would use the SAM app with other videos at school.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I would use the SAM app with my TV at home.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please continue on the next page.

Your impressions

Please write a short response to each of the three questions below. Please try to write a response to each of the questions.

What do you like about the SAM app?

What do you not like about the SAM app?

Did you experience any problems while using the app?

STOP! This is the end of the first questionnaire.

Second video

We will now show you another video and a new SAM experience. While you are watching a short video on the TV, you can use your SAM app that provides additional information for the video that is shown on the TV. You can use the SAM community to chat with your friends.

You can use additional content as before and can also see the SAM community chat that allows you to chat with the other people doing the test. This is the chat screen:

The screenshot displays the SAM app interface. At the top, a video player shows 'Tim Burton - The Film Director (schools)' with a progress bar at 00:00:38. Below the video player are two tabs: 'Related content' and 'SAM Community'. The 'SAM Community' tab is active, showing a chat window. The chat window features a greeting 'Hello Alex!' and a notification 'You have 5 invitations to join SAM communities'. A text input field contains 'Tim Burton' and a 'Post' button. A callout box points to the 'Post' button with the text 'Select a community, then post.' Below the chat input are options for 'what do you want to see?' (only comments up to the current scene of the video or all comments) and a list of recent chat messages.

You can post a message by selecting the community you want to post to from the drop-down menu at the left of the chat window, entering the message you want to send in the text field and then pushing the button labelled "post". It will take a few seconds until your message is shown in the chat window and until you can post another message.

Your posts will appear with the user name that we have given to you at the start of this test.

We will show the video twice, and there will be time to use the SAM app after the video has finished. After a few minutes we will ask you to stop and fill in the short questionnaire that is on the next few pages of this bundle.

The second video that you will see now is an interview with the actor Mads Mikkelsen, which you may know from a James Bond movie or from television.

When you are asked to do so, please complete the second questionnaire on the next page.

Second Questionnaire

This is the second questionnaire. Please complete this once you have completed the second video and the related tasks from the instruction sheet. As before, please only select one option for each question from the table below the question.

Using the SAM chat

The following pages contain statements, usually as a single sentence. Please use the tick boxes below the sentence to tell us whether you strongly disagree, disagree, neither agree nor disagree, agree or strongly agree with the statement above the tick boxes. As before, please only select one of the five options for each statement.

Learning to use the SAM chat is easy for me.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

It is clear to me what the SAM chat does.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

My interaction with the SAM chat is clear and understandable.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find the SAM chat easy to use.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using the SAM chat makes it easy to communicate with others about a video I am watching.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using the SAM chat improves viewing a video on the TV.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please continue on the next page.

Using the SAM chat enables me to communicate with others without effort.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find the SAM chat useful for communicating with others about a video I am watching.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I like using the SAM chat.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using the SAM chat is not enjoyable for me.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I feel engaged when I am using the SAM chat.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I would use the SAM chat with other videos at school.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I would use the SAM chat with my TV at home.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please continue on the next page.

Your impressions

Please write a short response to each of the three questions below. Please try to write a response to each of the questions.

What did you like about the SAM chat?

What did you not like about the SAM chat?

Did you experience any problems while using the SAM chat?

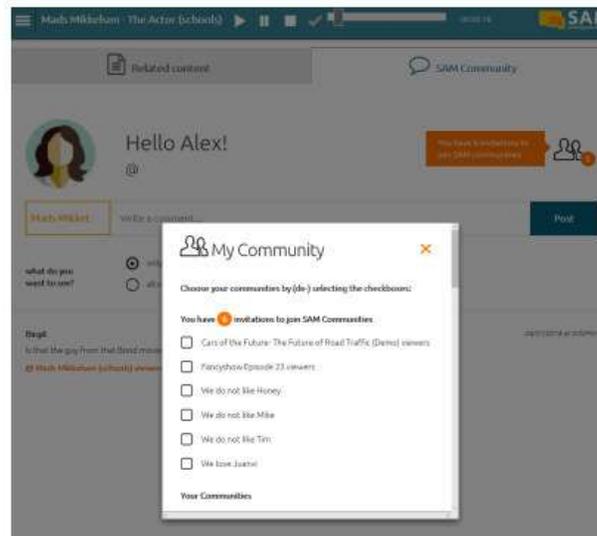
STOP! This is the end of the second questionnaire.

Third video

We will now show you another video and a new SAM experience. While you are watching a short video on TV, you can use your SAM app that provides additional information connected with the video that is shown on the TV, and you can once again use the SAM community chat to chat with your friends.

This time you can explore additional things: you will be invited to specially created communities and the system will sometimes show additional information depending on what you do in the system.

Please make sure that you use the SAM chat with this video and try to respond to the messages sent by Peggy, Marco and the Teacher. Please also join at least one of the communities you are being invited to before the video is shown for a second time. You will see on your screen whether you have community invitations pending. When you select the message, you will see a list of invitations. Please choose the communities you want to join there.



Then select the community from the drop-down menu in the chat window and send a message just to that community. We will also try to invite you to communities for things that you find interesting and that you mention in the chat window. Try it – if you type “I love dinosaurs” for instance, the system might invite you to a dinosaur community with some of your classmates.

We will once again show the video twice, and again there will be time to use the SAM app after the video has finished. After a few minutes we will ask you to stop again and complete the short questionnaire that is on the next few pages of this bundle.

This third video is about the premiere of the movie “Jurassic World” that was in the cinema last year.

When you are asked to do so, please complete the third questionnaire on the next page.

Third Questionnaire

This is the third questionnaire. Please complete this once you have completed the third video and the related tasks from the instruction sheet. Please only select one option for each question from the table below the question.

Using the SAM communities

The following pages contain statements, usually as a single sentence. Please use the tick boxes below the sentence to tell us whether you strongly disagree, disagree, neither agree nor disagree, agree or strongly agree with the statement above the tick boxes. Please only select one of the five options for each statement.

Learning to use the SAM communities is easy for me.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

It is clear to me what the SAM communities do.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

It is clear to me which messages are part of which SAM communities.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

My interaction with the SAM communities is clear and understandable.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find the SAM communities easy to use.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find it easy to send a message to a SAM community.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please continue on the next page.

Using the SAM communities improves viewing the video on the TV.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using the SAM communities enables me to communicate with friends without effort.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find the SAM communities useful for communicating with friends.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

It is clear to me why I get invitations to SAM communities.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I like using the SAM communities.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using the SAM communities is enjoyable for me.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I feel engaged when I am using the SAM communities.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I would use the SAM communities with other videos at school.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I would use the SAM communities with my TV at home.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please continue on the next page.

Your impressions

Please write a short response to each of the three questions below. Please try to write a response to each of the questions.

What did you like about the SAM communities?

What did you not like about the SAM communities?

Did you experience any problems while using the SAM communities?

STOP! This is the end of the third questionnaire.

Fourth video

We will now show you another video and a new SAM experience. It works much like the last time, so you can get invitations to communities, you can send chat messages around and so on.

If you do not use an Android phone or tablet, then you can try out whatever you want, there is no need to try anything specific. If you have an Android phone or tablet, please try out the voice control. This lets you talk to the SAM app in order to do some things. We have described this below under the heading "Only if you have an Android phone or tablet".

We will give you a bit more time to play around this time, and after a few minutes we will ask you to stop again and complete the next questionnaire. This questionnaire will be a little longer than the previous ones.

The fourth video is about Tim Burton, a movie director who made movies such as Alice in Wonderland, Edward Scissorhands, Sleepy Hollow and the old Batman Movie (not the recent ones though).

When you are asked to do so, please turn the page and complete the fourth questionnaire.

Only if you have an Android phone or tablet

If you have an Android phone or tablet with the SAM app installed, then you can also try our voice control function for SAM. You can use SAM voice control to do things in the SAM app by talking.

All you have to do is press the microphone button in the upper right corner of the app and wait for a "beep" sound that tells you that the SAM app is now listening to you. Please make sure that you have speakers set to low volume so that you can hear the beep sound and also hear what the SAM app tells you. Sometimes SAM might ask you for additional information. Please wait until you hear the "beep" sound after SAM asked you a question to respond.



When you are finished doing something with voice control, it switches itself off again so that it doesn't accidentally do something while you are talking to someone else. Please push the microphone button in the upper right corner of the app again to try out another command. When you use voice control to find messages from users, it can help to spell the name if it is difficult to pronounce or understand.

We have two things that we would like you to try to do with voice control:

1. Ask for information that is included in Wikipedia articles. It is best if you ask for information from a Wikipedia article that is shown on the SAM app, because then you can see whether SAM is telling you the truth. You could for instance ask "Can you tell me something about Tim Burton?".
2. You can quickly find the last chat message that a SAM user has written by asking for them by name. You could for instance try to find the last post that David made by asking "Are there any posts from David?"

If it does not work the first time, please try a couple of times to help our voice control understand you.

When you are done there is an additional fifth questionnaire for you to fill in that is all about the voice control feature. You will find it behind the fourth questionnaire in this bundle.

Fourth Questionnaire

This is the fourth questionnaire. Please complete this once you have completed the fourth video and the related tasks from the instruction sheet. Please only select one option for each questionnaire question from the table below the question.

Using the SAM app

The following pages contain statements, usually as a single sentence. Please use the tick boxes below the sentence to tell us whether you strongly disagree, disagree, neither agree nor disagree, agree or strongly agree with the statement above the tick boxes. Please only select one of the five options for each statement.

Learning to use the SAM app is easy for me.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

It is clear to me what the SAM app does.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

It is easy to divide attention between what happens on the TV and what happens in the SAM app.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

My interaction with the SAM app is clear and understandable.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find the SAM app easy to use.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using the SAM app improves viewing the video on the TV.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please continue on the next page.

I find the SAM app useful for additional information about topics in a video.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find the SAM app useful for chatting and exchanging information with other students.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I like using the SAM app.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using the SAM app is enjoyable for me.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I feel engaged when I am using the SAM app.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I would use the SAM app in order to find out more about the topics and issues in a video.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I would use the SAM app in order to talk with friends and family about the topics and issues in a video.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The SAM app makes learning about a topic in school more interesting.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The SAM app encourages me to suggest topics that should be covered in more detail in class.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please continue on the next page.

The SAM app allows me to learn more information about a topic.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The SAM app introduces me to new sources of information that I did not know before.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The SAM app inspires me to discuss topics in class.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The SAM app makes me want to be actively involved in discussing topics.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The SAM app would be useful with videos for foreign language learning.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The SAM app would be useful with videos for history or geography.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The SAM app would be useful with videos for politics or sociology.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The SAM app allows me to quickly see additional information while watching a video.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find the SAM app useful for further exploring topics in a video.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please continue on the next page.

Your impressions

Please write a short response to each of the three questions below. Please try to write a response to each of the questions.

Overall, what did you like about the SAM app?

Overall, what did you not like about the SAM app?

Overall, how would you like to use an app like the SAM app for learning in school?

STOP! This is the end of the fourth questionnaire. The next page has a last questionnaire for you if you also tried out voice control on an Android phone or tablet. If you have not, do not fill in the Fifth questionnaire. Instead, please go directly to the last page of this bundle.

Fifth questionnaire

This is the **fifth** questionnaire. As before, please always only select one option for each questionnaire question from the table below the question. **Please complete this questionnaire only if you have an Android phone or tablet and if you have used voice control. If you have not, then you are done! Please read the last page of this bundle.**

Using the SAM voice control

The following pages contain statements, usually as a single sentence. Please use the tick boxes below the sentence to tell us whether you strongly disagree, disagree, neither agree nor disagree, agree or strongly agree with the statement above the tick boxes. As before, please only select one of the five options for each statement.

Learning to use voice control is easy for me.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

It is clear to me how I can use voice control.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find the voice control easy to use.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find it easy to use voice control in order to find additional information about persons, places and products referenced in the video.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find it easy to use voice control in order to find the latest messages from others in the SAM chat.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using voice control improves using the SAM app.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please continue on the next page.

Using voice control enables me to use the SAM app without effort.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using voice control makes it easy to find out more about topics related to a video.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using voice control makes it easy to find the latest message from another person in the SAM communities.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find the voice control feature useful as part of the SAM app.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I like using voice control.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using the voice control is enjoyable for me.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I feel engaged when I am using voice control.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I would use the voice control feature with the SAM app.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please continue on the next page.

Your impressions

Please write a short response to each of the three questions below. Please try to write a response to each of the questions.

What did you like about the voice control?

What did you not like about the voice control?

Did you experience any problems while using voice control? Please describe them below.

This is the end of the fifth questionnaire. Thank you for taking the time to also test the voice control function.

That's it!

Thank you very much for helping us with testing SAM! We hope you had a good time during the test. Please make sure that you hand in this complete bundle of paper with the completed questionnaires now. We are already waiting for you to raise your hand to let us know that you are done.

Once all of your classmates are also done, we have reserved some time for you to ask us questions about SAM and about our work in general if you are interested.

Once again, thank you very much for your help!

9.4 End User Trial Questionnaire Response Data

This section provides the complete user responses to all non-free-text questionnaire items, including demographic questionnaire items and Likert-scale responses.

9.4.1 Responses Formative Evaluation User Trial

Demographics						
				13-14	15-16	17-18
How old are you?				0	52	4
				Female	Male	Would rather not say
Are you female or male?				32	24	0
	Android phone	Android tablet	Apple iPad	Apple iPhone	Other device	Other smartphone
Which device are you using for this test?	29	13	3	4	0	6
Using the SAM app						
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	
Learning to use the SAM app to view content is easy for me.	0	7	10	23	7	
It is clear to me what the SAM app does	0	2	17	21	7	
My interaction with the SAM app is clear and understandable.	0	6	17	19	5	
I find the SAM app easy to use.	2	5	12	17	11	
I find it easy to use the SAM app while a video is playing.	0	6	16	15	10	
I find it easy to use the SAM app after a video has finished playing.	4	4	13	16	10	
New things that are added on the SAM app while a video is playing are easy to find.	0	1	13	25	8	
Using the SAM app makes it easy to find out more about topics related to a video.	0	7	13	12	14	
Using the SAM app improves viewing a video on the TV.	0	1	14	27	5	
Using the SAM app enables me to find out more about topics in a video without effort.	0	6	16	11	14	
I find the SAM app useful for finding out more about topics related to a video.	0	4	8	20	15	
I like using the SAM app to view content.	0	3	14	27	3	
Using the SAM app to view content is enjoyable for me.	1	7	14	22	3	

I feel engaged when I am using the SAM app to view content.	0	7	21	16	3
I would use the SAM app with other videos at school.	2	9	7	20	7
I would use the SAM app with my TV at home.	2	5	9	20	10
Using the SAM chat					
	<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
Learning to use the SAM chat is easy for me.	0	2	11	20	24
It is clear to me what the SAM chat does.	0	1	11	32	13
My interaction with the SAM chat is clear and understandable.	0	3	5	40	9
I find the SAM chat easy to use.	0	6	10	27	14
Using the SAM chat makes it easy to communicate with others about a video I am watching.	1	3	11	25	17
Using the SAM chat improves viewing a video on the TV.	1	2	17	25	12
Using the SAM chat enables me to communicate with others without effort.	0	1	18	34	4
I find the SAM chat useful for communicating with others about a video I am watching.	0	2	9	27	18
I like using the SAM chat.	0	0	18	25	14
Using the SAM chat is not enjoyable for me.	4	16	23	9	5
I feel engaged when I am using the SAM chat.	0	5	23	25	4
I would use the SAM chat with other videos at school.	0	3	14	25	13
I would use the SAM chat with my TV at home.	0	3	11	30	12
Using the SAM communities					
	<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
Learning to use the SAM communities is easy for me.	0	6	15	23	0
It is clear to me what the SAM communities do.	1	3	19	19	1

My interaction with the SAM communities is clear and understandable.	3	8	13	20	2
I find the SAM communities easy to use.	3	5	16	15	4
I find it easy to send a message to a SAM community.	3	6	8	23	4
Using the SAM communities improves viewing the video on TV.	0	4	15	25	0
Using the SAM communities enables me to communicate with friends without effort.	0	3	16	24	1
I find the SAM communities useful for communicating with friends.	0	5	14	22	3
It is clear to me why I get invitations to SAM communities.	0	7	21	14	2
I like using the SAM communities.	3	4	9	26	2
Using the SAM communities is enjoyable for me.	2	4	15	22	1
I feel engaged when I am using the SAM communities.	2	5	18	17	1
I would use the SAM communities with other videos at school.	1	6	15	20	2
I would use the SAM communities with my TV at home.	1	7	15	16	5
Using the SAM app					
	<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
Learning to use the SAM app is easy for me.	0	5	8	29	10
It is clear to me what the SAM app does.	0	4	9	26	3
It is easy to divide attention between what happens on the TV and what happens in the SAM app.	0	6	17	14	4
My interaction with the SAM app is clear and understandable.	0	3	11	24	4
I find the SAM app easy to use.	0	2	14	22	4
Using the SAM app improves viewing the video on the TV.	1	1	9	25	5
I find the SAM app useful for additional information about	0	2	8	30	4

topics in a video.					
I find the SAM app useful for chatting and exchanging information with other students.	0	1	9	30	4
I like using the SAM app.	0	0	12	22	8
Using the SAM app is enjoyable for me.	1	1	10	26	5
I feel engaged when I am using the SAM app.	3	6	15	18	2
I would use the SAM app in order to find out more about the topics and issues in a video.	0	2	8	30	4
I would use the SAM app in order to talk with friends and family about the topics and issues in a video.	0	3	11	23	5
The SAM app makes learning about a topic in school more interesting.	0	1	14	19	10
The SAM app encourages me to suggest topics that should be covered in more detail in class.	0	2	8	23	11
The SAM app allows me to learn more information about a topic.	0	1	9	26	6
The SAM app introduces me to new sources of information that I did not know before.	0	3	10	24	5
The SAM app inspires me to discuss topics in class.	0	1	11	24	6
The SAM app makes me want to be actively involved in discussing topics.	1	1	14	17	8
The SAM app would be useful with videos for foreign language learning.	0	2	9	26	5
The SAM app would be useful with videos for history or geography.	0	1	8	25	8
The SAM app would be useful with videos for politics or sociology.	0	2	11	23	6
The SAM app allows me to quickly see additional information while watching a video.	0	2	8	23	9
I find the SAM app useful for further exploring topics in a video.	8	3	6	25	8
Using the SAM voice control					

	<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
Learning to use voice control is easy for me.	0	4	5	8	2
It is clear to me how I can use voice control.	0	4	4	11	0
I find the voice control easy to use.	0	1	6	8	4
I find it easy to use voice control in order to find additional information from Wikipedia.	0	2	3	13	1
I find it easy to use voice control in order to find the latest messages from others in the SAM chat.	0	1	7	10	1
Using voice control improves using the SAM app.	0	3	5	8	3
Using voice control enables me to use the SAM app without effort.	0	4	7	5	2
Using voice control makes it easy to find out more about topics related to a video.	0	3	5	9	1
Using voice control makes it easy to find the latest message from another person in the SAM communities.	0	2	7	7	2
I find the voice control features useful as part of the SAM app.	0	1	3	11	3
I like using voice control.	0	1	5	10	2
Using the voice control is enjoyable for me.	0	3	3	11	1
I feel engaged when I am using voice control.	2	3	3	10	0
I would use the voice control feature with the SAM app.	0	3	4	9	2

9.4.2 Responses Summative Evaluation User Trial

Demographics						
			<i>13-14</i>	<i>15-16</i>	<i>17-18</i>	
How old are you?			14	73	3	
			<i>Female</i>	<i>Male</i>	<i>Would rather not say</i>	
Are you female or male?			43	44	3	
	<i>Android</i>	<i>Android</i>	<i>Apple iPad</i>	<i>Apple</i>	<i>Other</i>	<i>Other</i>

	<i>phone</i>	<i>tablet</i>		<i>iPhone</i>	<i>device</i>	<i>smartphone</i>
Which device are you using for this test?	50	3	9	24	3	1
Using the SAM app						
	<i>Strongly disagree</i>	<i>Disagree</i>		<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
Learning to use the SAM app to view content is easy for me.	1	6	19	52	10	
It is clear to me what the SAM app does	1	7	12	53	16	
My interaction with the SAM app is clear and understandable.	1	5	30	39	15	
I find the SAM app easy to use.	1	4	20	43	19	
I find it easy to use the SAM app while a video is playing.	1	10	22	45	11	
I find it easy to use the SAM app after a video has finished playing.	0	9	21	51	7	
New things that are added on the SAM app while a video is playing are easy to find.	0	6	29	46	7	
Using the SAM app makes it easy to find out more about topics related to a video.	3	2	19	47	16	
Using the SAM app improves viewing a video on the TV.	4	7	18	48	10	
Using the SAM app enables me to find out more about topics in a video without effort.	1	5	26	48	9	
I find the SAM app useful for finding out more about topics related to a video.	0	5	29	45	9	
I like using the SAM app to view content.	2	5	21	53	9	
Using the SAM app to view content is enjoyable for me.	4	8	33	29	15	
I feel engaged when I am using the SAM app to view content.	1	10	32	36	10	
I would use the SAM app with other videos at school.	3	2	21	38	26	
I would use the SAM app with my TV at home.	7	12	17	26	28	
Using the SAM chat						
	<i>Strongly disagree</i>	<i>Disagree</i>		<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>

Learning to use the SAM chat is easy for me.	3	3	11	56	14
It is clear to me what the SAM chat does.	3	4	17	48	15
My interaction with the SAM chat is clear and understandable.	2	2	23	50	10
I find the SAM chat easy to use.	2	3	15	49	19
Using the SAM chat makes it easy to communicate with others about a video I am watching.	2	4	13	52	17
Using the SAM chat improves viewing a video on the TV.	2	5	35	39	7
Using the SAM chat enables me to communicate with others without effort.	2	4	25	50	9
I find the SAM chat useful for communicating with others about a video I am watching.	2	2	18	52	16
I like using the SAM chat.	2	3	26	44	15
Using the SAM chat is not enjoyable for me.	9	13	25	36	7
I feel engaged when I am using the SAM chat.	4	8	33	32	12
I would use the SAM chat with other videos at school.	3	3	21	49	14
I would use the SAM chat with my TV at home.	3	1	19	46	21
Using the SAM communities					
	<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
Learning to use the SAM communities is easy for me.	3	1	6	37	3
It is clear to me what the SAM communities do.	2	3	16	27	2
My interaction with the SAM communities is clear and understandable.	2	2	15	28	3
I find the SAM communities easy to use.	2	3	9	31	5
I find it easy to send a message to a SAM community.	2	1	10	30	7
Using the SAM communities improves viewing the video on TV.	3	2	9	30	6
Using the SAM communities	3	0	13	33	0

enables me to communicate with friends without effort.					
I find the SAM communities useful for communicating with friends.	2	2	9	36	1
It is clear to me why I get invitations to SAM communities.	2	3	8	30	7
I like using the SAM communities.	2	2	18	23	5
Using the SAM communities is enjoyable for me.	2	1	15	27	5
I feel engaged when I am using the SAM communities.	2	3	11	28	6
I would use the SAM communities with other videos at school.	2	3	8	27	10
I would use the SAM communities with my TV at home.	3	3	11	27	6
Using the SAM app					
	<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
Learning to use the SAM app is easy for me.	1	2	3	34	9
It is clear to me what the SAM app does.	1	3	7	31	6
It is easy to divide attention between what happens on the TV and what happens in the SAM app.	2	3	13	23	8
My interaction with the SAM app is clear and understandable.	1	3	9	28	8
I find the SAM app easy to use.	1	3	10	22	13
Using the SAM app improves viewing the video on the TV.	2	4	8	29	6
I find the SAM app useful for additional information about topics in a video.	1	4	16	25	4
I find the SAM app useful for chatting and exchanging information with other students.	1	3	11	27	8
I like using the SAM app.	1	4	7	24	13
Using the SAM app is enjoyable for me.	2	2	7	30	9
I feel engaged when I am using the SAM app.	1	3	11	29	6
I would use the SAM app in	1	5	6	30	8

order to find out more about the topics and issues in a video.					
I would use the SAM app in order to talk with friends and family about the topics and issues in a video.	2	3	14	24	7
The SAM app makes learning about a topic in school more interesting.	1	3	6	31	9
The SAM app encourages me to suggest topics that should be covered in more detail in class.	1	5	11	25	8
The SAM app allows me to learn more information about a topic.	2	3	5	36	3
The SAM app introduces me to new sources of information that I did not know before.	2	3	9	29	6
The SAM app inspires me to discuss topics in class.	2	2	9	26	10
The SAM app makes me want to be actively involved in discussing topics.	2	3	9	26	9
The SAM app would be useful with videos for foreign language learning.	2	2	14	23	8
The SAM app would be useful with videos for history or geography.	1	4	11	28	5
The SAM app would be useful with videos for politics or sociology.	1	3	15	23	7
The SAM app allows me to quickly see additional information while watching a video.	2	3	5	28	10
Using the SAM voice control					
	<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
Learning to use voice control is easy for me.	0	2	2	10	0
It is clear to me how I can use voice control.	0	2	1	10	1
I find the voice control easy to use.	0	2	2	9	2
I find it easy to use voice control in order to find additional information from Wikipedia.	0	2	1	10	2
I find it easy to use voice control in order to find the latest	0	3	1	10	1

messages from others in the SAM chat.					
Using voice control improves using the SAM app.	0	3	1	10	1
Using voice control enables me to use the SAM app without effort.	1	3	1	7	1
Using voice control makes it easy to find out more about topics related to a video.	0	3		10	0
Using voice control makes it easy to find the latest message from another person in the SAM communities.	0	3	1	6	3
I find the voice control features useful as part of the SAM app.	0	3	2	8	0
I like using voice control.	1	2	2	7	1
Using the voice control is enjoyable for me.	0	4	1	6	1
I feel engaged when I am using voice control.	0	3	1	8	1
I would use the voice control feature with the SAM app.	0	3	1	7	2

9.5 User Voice Trials Instruction Sheet & Questionnaire

INFORMATION ABOUT THE SAM APPLICATION

- The SAM application consists essentially of two parts: a "TV" application where a film or video is being played and its mobile counterpart which is an application running on an Android tablet. This Android app displays information related to the TV video and additional functionalities (e.g. social interaction).
- The Android app's main interface shows 2 tabs, one with related content organized in widgets and one with the SAM community.
- The Related Content tab contains a variety of widgets showing various types of related content (wikipedia articles, youtube videos etc).
- In the SAM Community tab you can read messages from other users related to the video being played and post your own messages to these communities.
- The bar on the top of the app allows you to adjust settings, control the playback of the video and initiate Voice Interaction.

INFORMATION ABOUT VOICE INTERACTION

- In order to speak you have first to press once on the microphone. You can start speaking after you hear a sound and the microphone turns white. When you stop for a while, the app understands that you are finished and starts processing your request
- Before start completing the various voice scenarios we recommend you to press the microphone and ask for help from the SAM app, so that you get an idea of what you can say to it!
- You don't have to press the button each time you want to speak. If the app expects some information from you it will automatically start listening to you. But whenever the app does not automatically start listening to you, you can press the microphone and talk
- The app will inform you about any information that is missing or misheard and you will be able to complete it when you speak again.
- You can always interrupt the application while it talks by pressing the microphone. It will then stop speaking and listen to you.
- Since you will be talking with a video playing on the speakers, it is a good idea to hold the tablet near you and speak clearly to the microphone

Voice User Trials Questionnaire

Using the SAM voice control

The following pages contain statements, usually as a single sentence. Please use the tick boxes below the sentence to tell us whether you strongly disagree, disagree, neither agree nor disagree, agree or strongly agree with the statement above the tick boxes. Please only select one of the five options for each statement.

Learning to use the SAM voice control is easy for me.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

It is clear to me how I can use the SAM voice control.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I find the SAM voice control easy to use.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using voice control improves using the SAM app.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using voice control enables me to use the SAM app without effort.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using SAM voice control makes it easy to find out more about people related to videos I am watching.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using SAM voice control is useful in order to find out more about people related to the video.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using voice control makes it easy to find out more about visual media related to videos I am watching.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

Using SAM voice control is useful in order to find out more about films related to the video.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

Using SAM voice control makes it easy to get updates on social activity from a specific SAM communities user.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

Using SAM voice control makes it easy to manage subscriptions to individual community user's activity.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

Using voice control makes it easy to post messages to SAM communities.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

I would prefer using voice control to post messages to SAM communities than typing them on my device.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

Using SAM voice control makes it easy to control the video playback on the TV

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

I would prefer using SAM voice control to control video playback on the TV than using the touch controls.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

I find the voice control feature useful as part of the SAM app.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

I like using SAM voice control.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

Using SAM voice control is enjoyable for me.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

I feel engaged when I am using SAM voice control.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

I would use the voice control feature with the SAM app.

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

Your impressions

Please write a short response to each of the three questions below. Please write at least one sentence below each of the three questions.

What did you like about the voice control?

What did you not like about the voice control?

Did you experience any problems while using voice control?

This is the end of the questionnaire.

10 Appendix B: School Partner LOPD Confirmation Letters

10.1 Colegio LA Encarnacion de Sueca

	Col·legi LA ENCARNACION (C/ Plaça Sant Pere, 5 46470-Sueca (Valencia)) T: 96 170 03 25 Fax: 96 171 22 58 E-mail: laencarnacion@laencarnacion.es Web: http://www.laencarnacion.es	
---	--	---

Por la presente, yo Assumpta Meseguer Sisternes, como profesora de Inglés del colegio La Encarnación de Sueca (Valencia) expreso la conformidad procedimental en relación a las actividades de validación y test del proyecto SAM, Socialising Around Media. Las actividades relacionadas con SAM se han realizado bajo el control de los responsables didácticos de los alumnos participantes y en un entorno creado especialmente para asegurar el anonimato de los participantes, y observando los requerimientos de la LOPD (Ley Orgánica 15/1999, de 13 de diciembre de Protección de Datos de Carácter Personal).

La experiencia ha resultado más que satisfactoria y ha superado con creces las expectativas de ambos, tanto profesorado como alumnado. SAM nos parece una herramienta muy útil, enriquecedora y motivadora para todas las clases viendo el inmenso potencial que tiene, no solamente en cuanto a la gran cantidad de información que puede aportar y de fuentes tan diversas sino por el manejo interactivo de esta información que supone por parte de los alumnos, con alumnos de su misma clase e incluso con alumnos de otros centros, lo que puede ofrecer un aula sin fronteras algún día.

Destacamos que SAM no solamente es una aplicación de fácil uso por lo intuitiva que es dando fácil acceso a los contenidos a todos los niveles, sino que ofrece una gran versatilidad por poner al alcance del profesorado la oportunidad de seleccionar dicho contenido para la preparación de unidades didácticas específicas.

No podemos olvidar el entusiasmo y el interés que ha despertado en todos nuestros alumnos la posibilidad de estar cooperando con profesionales de universidades y compañías de toda Europa en un proyecto de este calibre, asistiendo a conferencias on-line o realizando tests y encuestas donde es vital su opinión sobre un tema que tanto les atrae como la tecnología y los medios de comunicación.



Sueca a 10 de octubre del 2016

Indicative translation:

“I, Assumpta Meseguer Sisternes, a teacher of English at the school La Encarnacion de Sueca (Valencia) confirm the procedural conformity in relation to the validation activities and test of the project SAM.

The SAM related activities performed in the school have been completed under the control of the pedagogic board responsible for the students and in an environment created to ensure the anonymity of the participants and fulfilling the requirements of the LOPD (Ley Organica 15/1999, de 13 of December of Personal Data Protection).

The experience has been more than satisfactory and exceeded, by far, the expectations of both the teachers and the students. SAM demonstrated it is a very useful tool with a lot of potential, helping enriching and motivating the classes, not only because of the additional information that can be provided from different sources, but specially because of the interactive manipulation of this information by the students, interacting with students of the same class and also with students on other centres, creating the possibility of open (“non-frontiers”) schools in the future.

We want to highlight that SAM is not only an easy and intuitive application, giving access to different levels of information to the students, but also it is seen as a tool that can provide a lot of versatility as it puts into the teachers’ hands, the opportunity of easily create and reuse contents to prepare specific didactic units.

We don’t want to forget the great enthusiasm and interest that this initiative has awakened in all our students through the opportunity of cooperating with professionals from different universities and companies of around Europe, attending teleconference, contributing to the enquiries and participating in the testing where their opinion is vital about a project that they feel very attractive as it is technology and media.”

10.2 Colegio La Milagrosa de Cullera



Cullera a 25 de Octubre de 2016

Por la presente, yo Ximo Gonzalez, como professor del Colegio La Milagrosa de Cullera (Valencia) expreso la conformidad procedimental en relacion a las actividades de validación y test del proyecto SAM – Socialising Around Media. Las actividades relacionadas con SAM se han realizado bajo el control de los responsables pedagogicos de los alumnos participantes, en un entorno creado especialmente para asegurar el anonimato y observando los requerimientos de la LOPD (Ley Organica 15/1999, de 13 de diciembre de Protección de Datos de Caracter Personal).

SAM ha demostrado durante los test realizados que puede ser una herramienta muy útil en el terreno del entretenimiento, pero especialmente relacionado con las actividades pedagogicas, ya que permite a los alumnos interactuar libremente con los conceptos didacticos que se explican en los videos y profundizan e interactuar con ellos en un entorno seguro, permitiendo una experiencia personalizada para cada alumno.

Las pruebas de SAM han excedido las expectativas tanto del equipo directivo y pedagógico, como de los propios alumnos. Ha resultado una iniciativa muy motivadora para los alumnos, ya que han estado expuestos a temas muy atrayentes para ellos, especialmente nuevas tecnologías y dispositivos móviles. También ha sido muy importante para los alumnos vivir el proceso de evolución de la tecnología, y como los comentarios realizados en el primer test se han convertido en mejoras para el prototipo final.

Desde el colegio queremos agradecer al equipo de SAM la posibilidad de que nuestros alumnos y profesores haya podido interactuar con investigadores de toda Europa y participar activamente en una iniciativa tan enriquecedora.


Ximo González Gutiérrez

Indicative translation:

“I, Ximo Gonzalez, as teacher of the La Cullera School (Valencia), hereby express the procedural conformity in relation to the SAM validation and test activities. The activities were carried out under the control of the responsible participants, in an environment especially created to ensure anonymity and observing the requirements of the LOPD (Organic Law 15/1999, of December 13, Protection of Personal Data).

During the tests, SAM has demonstrated that it can be a very useful tool in the field of entertainment information, but especially related pedagogical activities, as it allows students to interact freely with the didactic concepts explained in the videos and deepen and interact with them, in a safe environment, allowing a personalised experience for each item.

The SAM tests have exceeded the expectations of both the management and pedagogical team and the students themselves. It has been a very motivating initiative for the students, since they have been exposed to very interesting and engaging subjects for them, especially new technologies and mobile devices. It has also been very important for students to actively participate in the live process of the evolution of technology, as the comments made in the first test have become improvements for the final prototype.

From the school, we want to thank the SAM team for the opportunity that has enabled our students and teachers to interact with researchers from all over Europe and participate actively in such an enriching initiative.”

11 Appendix C: Review of KPIs

11.1 Production Scenario KPIs

KPI	Title	Evaluation
P.1	Efficiency of Asset Preparation	The KPI requires that a core asset can be prepared in either twice the running time of the asset or 30 minutes. While this KPI refers to the primary asset only, in practice it is possible to both import an asset and create a basic 2 nd Screen experience for it within such a time frame.
P.2	Efficiency of Assets Search	Achieved on the full database used for the project
P.3	Usefulness of Asset Handling	Achieved for 2 nd Screen experience creation, not achieved for asset importing and metadata editing
P.4	Ease of Use of Asset Handling	Achieved for 2 nd Screen experience creation, not achieved for asset importing and metadata editing
P.5	Intuitiveness of Asset Preparation Process	Not achieved as measured through metadata editing evaluation; user feedback is that steps should be automated
P.6	Timeliness of Availability of Assets after Publication	Achieved
P.7	Efficiency of Feedback and Analytics Reporting to Asset Owners	Required technical features achieved, data can be updated in near real-time if required

11.2 Prosumption Scenario KPIs

KPI	Title	Evaluation
C.1	Timeliness of Notifications for Related Content	Specific functionality was not implemented (not core functionality), so not evaluated; achieved for Social Media update notifications
C.2	Timeliness of Availability of the 2 nd Screen Experience	Achieved as verified in testing and demonstrated in user evaluations in technically adverse environment (network load and availability)
C.3	Timeliness of Dashboard Content Synchronisation	Achieved as verified in testing and demonstrated in user evaluations in technically adverse environment (network load and availability)
C.4	Utility of Voice Interaction	Achieved in technical testing (but note responses to user evaluation concerning integration of voice functionalities)
C.5	Effectiveness of Notifications and/or Recommendations	Specific functionality was not implemented (not core functionality), so not evaluated
C.6	Efficiency of the Analysis of User Behaviour and Profiling	Achieved as measured through user evaluations in Prosumption Scenario trials
C.7	Effectiveness of the Creation of Social Communities	Not achieved with 56.98% agree or strongly agree vs. 75% expected to at least "somewhat agree" (n.b. that the original questionnaire design envisioned a 7-point Likert scale, while a 5-point Likert Scale was used in the trials)
C.8	Ease of Use of 2 nd Screen	Achieved as measured through user evaluations in

	Experience	Prosumption Scenario trials
C.9	Usefulness of 2 nd Screen Experience	Achieved as measured through user evaluations in Prosumption Scenario trials
C.10	Enjoyability of 2 nd Screen Experience	Achieved as measured through user evaluations in Prosumption Scenario trials

11.3 Cross-Cutting KPIs

KPI	Title	Evaluation
T.1	Error Prevention	Achieved for Prosumption Scenario, not tested for Production Scenario
T.2	Support of Recognition Rather Than Recall	Achieved in the Prosumption Scenario, not fully achieved in the Production Scenario
T.3	Support multiple types of assets	Achieved, representative video, image and text formats can be shown
T.4	Definition and enforcement of access policies to assets	Systems for access control and for brand and consumer protection are available