WP2: 2nd Screen, Social Media Vision and Challenges

D2.2.3: Market Opportunities and Challenges (Final Version)

Deliverable Lead: BDS
Contributing Partners: BDS, ALL
Delivery Date: 2016-10
Dissemination Level: Public

The purpose of this SAM deliverable D2.2.3 Market Opportunities and Challenges is to provide a description of the potential target market sectors and the prospective customers, in alignment with the SAM vision. The report identifies the current state of the market and its challenges and opportunities, the competitors and incumbents and characterises the market from the perspective of the use case partners.
Document Status

<table>
<thead>
<tr>
<th>Deliverable Lead</th>
<th>Barry Smith, BDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Reviewer 1</td>
<td>Eric Moons, TPVI</td>
</tr>
<tr>
<td>Internal Reviewer 2</td>
<td>Juanvi Vidagany Espert, TIE</td>
</tr>
<tr>
<td>Type</td>
<td>Deliverable</td>
</tr>
<tr>
<td>Work Package</td>
<td>WP2 – 2nd Screen, Social Media Vision and Challenges</td>
</tr>
<tr>
<td>ID</td>
<td>D2.2.3: Market Opportunities and Challenges</td>
</tr>
<tr>
<td>Due Date</td>
<td>10.2016</td>
</tr>
<tr>
<td>Delivery Date</td>
<td>11.2016</td>
</tr>
<tr>
<td>Status</td>
<td>Draft</td>
</tr>
</tbody>
</table>

Document History

| Versions                | V0.1: First Draft produced by Editor |
|                        | V0.2: Draft following initial partner input |
|                        | V0.3: Further draft following further partner input |
|                        | V0.4: Update of draft               |
|                        | V0.5: Update of draft               |
|                        | V0.6: Draft for First Review 30_10_16 |
|                        | V1.0: Final revision based on the comments from the review |
| Contributions           | BDS: Barry Smith - Document structure, Lead – Sections 2, 3 4 and 5 |
|                        | TIE: – Sections 2 and 3              |
|                        | DW: – Sections 2 and 3               |
|                        | UA: – Section 2                      |
|                        | TPV: – Sections 2 and 3              |
|                        | TALK: – Section 2                    |
|                        | ASC: – Sections 2 and 3              |
|                        | UOR: – Section 2                     |
|                        | NTUA: – Section 2                    |
|                        | ALL: SWOT Analysis Contributions     |

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

WEST10*
THE BDS GROUP

Bibliographic Data Services Limited, UK
Executive Summary

The purpose of this SAM deliverable D2.2.3 Market Opportunities and Challenges is to deliver the final description of the potential target market sectors and the prospective customers, in alignment with the SAM vision, which is organised around three main pillars: Content Syndication, Social Media and Multi-device Representation and now, in Y3, to a lesser degree, 2nd Screen.

Innovative technologies, new entrants, emerging business models and a burgeoning connected world has meant that the marketplace is dynamic and that SAM has needed to react to the market variations. Therefore, this deliverable is intended to be a snapshot at the end of Year 3 and will report potential market opportunities and threats to the future exploitation of SAM.

This document will help to elaborate the final goals of the project, based on an external view of the market whilst integrating requirements and constraints coming from the use case partners and to create the criteria for the exploitation strategies in WP9.
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

2 Market Environment .......................................................................................................................... 10
  2.1 Market Themes ............................................................................................................................. 10
    2.1.1 M&E and the 2nd Screen ........................................................................................................ 10
    2.1.2 Content Syndication .............................................................................................................. 14
    2.1.3 SmartTV and Connected Devices .......................................................................................... 15
    2.1.4 Social Media ......................................................................................................................... 15
    2.1.5 Dynamic Contextual Social Media Community Creation .................................................. 19
    2.1.6 Business Intelligence & Analytics ......................................................................................... 19
    2.1.7 Dialogue Speech Control Systems ....................................................................................... 20
    2.1.8 Sentiment Analysis & Social Mining ..................................................................................... 21
    2.1.9 Emerging Areas of Content Monetisation ............................................................................ 23
    2.1.10 2nd Screen Content Editing and Linking ............................................................................. 25
  2.2 SAM’s Position in the M&E Ecosystem ............................................................................................ 26
    2.2.1 Trends Relevant to SAM Which Are Transforming M&E .................................................... 26
  2.3 Living and Learning with Smart Devices ....................................................................................... 29
    2.3.1 Attitudes to the Use of Smart Devices in Education ............................................................. 29
    2.3.2 e-Learning and SAM ........................................................................................................... 33
    2.3.3 Validation of the e-Learning Experience .............................................................................. 35
  2.4 SAM: Europeana and Cultural Heritage ......................................................................................... 36

3 Stakeholder Viewpoints ..................................................................................................................... 41
  3.1 Broadcaster: Second Screen/Multiscreen Developments ............................................................. 41
    3.1.1 Overall status of the broadcast/media industry ..................................................................... 41
    3.1.2 Status of broadcaster related Second Screen services ........................................................ 42
    3.1.3 Second Screen and Multiscreen platforms and solution providers .................................... 43
    3.1.4 SAM Use and Post SAM ....................................................................................................... 44
  3.2 Content Providers .......................................................................................................................... 45
    3.2.1 Summary ............................................................................................................................... 45
    3.2.2 SAM Use ............................................................................................................................... 46
    3.2.3 Competition ........................................................................................................................... 47
    3.2.4 Post SAM ............................................................................................................................. 49
  3.3 SmartTV and Device Providers .................................................................................................... 49
    3.3.1 Summary ............................................................................................................................... 50
    3.3.2 SAM Use ............................................................................................................................... 50
    3.3.3 Competition ........................................................................................................................... 50
    3.3.4 Post SAM ............................................................................................................................. 51
  3.4 App Developers ............................................................................................................................ 51
    3.4.1 Summary ............................................................................................................................... 51
    3.4.2 SAM Use ............................................................................................................................... 52
    3.4.3 Competition ........................................................................................................................... 52
    3.4.4 Post SAM ............................................................................................................................. 52
  3.5 Service Provider ............................................................................................................................ 52
  An Updated SAM SWOT Analysis ...................................................................................................... 54
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

Today’s generation of Internet-connected devices has changed the way users are interacting with media, exchanging their role from passive and unidirectional to proactive and interactive. Under this new role, users are able to comment on or rate a TV show or film and search for related information regarding characters, facts or personalities. They do this both with friends and wider social communities through the so-called ‘2nd Screen’.

Another coupled phenomenon is ‘Content Syndication’ which is a field of marketing where digital content is created once and delivered to many different marketing channels (devices, social media channels, websites and stakeholders) together and so allowing efficient content control, delivery, and feedback.

However, the 2nd Screen phenomenon has grown in an unordered way. Tools are supplied by the media provider companies (e.g. as mobile or tablet apps) which limits outreach and, as a result, users are not stimulated and fed with relevant contextual syndicated information. European enterprises wishing to provide services have limited potential to receive feedback, which restricts the business intelligence that can be extracted and applied therefore to profit from and enrich this market.

SAM will change this disorder 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 ways of characterising, discovering and syndicating media assets interactively. Users will be able to consume and prosume digital assets from different syndicated sources and different synchronised devices (e.g. connected TVs), thus creating richer experiences around the original media assets.

SAM's innovative approach means that instead of users reaching out for the data, it is the data which reaches the user through the syndication approach and their 2nd Screen. This is based on the creation of dynamic social communities related to the user and digital asset context (e.g. profiles, preferences and devices connected). These are dynamic hangouts 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 community as well as enhance personalised knowledge and satisfaction.

1.2 Deliverable Purpose, Scope and Context

The purpose of this report, D2.2.3 Market Opportunities and Challenges, is to provide the final snapshot of the current marketplace to the project to help to confirm the requirements of the stakeholders and partners and players in the target markets to make sure that the end result for SAM will be an exploitable system.

This document provides information about:

- The general positioning of the SAM project in the current Media and Entertainment (M&E) ecosystem,
• Identified business and research/technological objectives,
• Updated stakeholder and partner perspectives,
• Agreed applicable preliminary exploitation usage scenarios
• Applicable market opportunities and challenges

This report provides high-level information and examples of the current market status of the M&E ecosystem, its players, and the challenges and opportunities that it presents for the project. The preliminary use case scenarios described in T8.1 have been altered and adapted due to the impact of market variations. This will be further expanded upon, acknowledging the need for a high-level, user-driven business basis on which and guide the commercial strategy and exploitation plans for SAM, linked to T9.1 (IPR, Exploitation and Sustainability).

1.3 Document Status and Target Audience

This document is listed in the DoW as ‘public’ since it provides an initial description the M&E ecosystem, with a focus on the current market sectors of importance to SAM. These are Content Syndication, Social Media and 2nd Screen and the opportunities and challenges faced by SMEs in that business ecosystem and so may be used by external parties to gain additional business insight.

Whilst the document is primarily aimed at the project partners, this public deliverable may also be useful for the wider business, academic and scientific community including other publicly funded projects, which may be interested in collaborative activities with the SAM project.

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 down into the following sections:

• **Section 1 (Introduction):** Comprises a general overview of the project, and an outline of the purpose, scope, context, status, and target audience of SAM

• **Section 2 (Market Environment):** Presents the current Marketplace and commercial themes of relevance for the SAM platform and its elements and describes SAM’s position in the M&E ecosystem and identifies competing platforms

• **Section 3 (Stakeholder Viewpoints):** Presents the perceived opportunities and challenges that SAM will face in the commercial world based on a SWOT analysis as well as providing a view of future potential enhancements

• **Section 4 (Conclusion):** Provides a high-level view of where SAM sits in the current M&E ecosystem and where it might best maximise its potential for commercial exploitation

Annexes:
• **Annex A: (M&E Companies Relevant to SAM):** Provides an updated list of companies operating in the same M&E space as SAM, identifying the number of new entrants, acquisitions and company closures

• **Annex B. (Sources of M&E Industry Reports):** There are no changes to the list of research sources reviewed to identify the market opportunities and challenges since D2.2.2

• **Annex C: (2nd Screen and Social TV Related Companies Similar to SAM):** Provides examples of companies in Europe identified as offering the nearest, similar services as those to be available via the SAM platform
2 Market Environment

The M&E ecosystem continues to undergo a digital revolution with a continued shift to digital formats across the M&E industry. Revenues continue to be generated by multiple methods shared in an open association with many market segments such as software/video game design, television, radio, and mobile and, particularly, movies, advertising and marketing and the industry seeks to maximise gain from direct dialogue with consumers via the Internet and, increasingly, multiple-device interaction.

SAM positions itself in the middle of the M&E ecosystem and seeks to capitalise on the opportunities presented by consumers who, using myriad of connected devices in an ‘always on’ environment, have broadly shifted away from engaging in traditional media newspapers, analogue TV and radio to online digital entertainment.

As many consumers switch over to the digital media sector and engage in more digital content, there has been a rise in the number of innovative, agile companies, including small media companies who have identified what the new digitally savvy consumer wants and exploited current gaps in the market. SAM will reduce barriers to entry for such new players bringing disruption to business ecosystems and so encourages new people with new ideas, new money, new tools and new technologies to participate and create new businesses in an ‘always on’ environment.

2.1 Market Themes

The following sections will report on the themes and related areas which are relevant to SAM from the point of view of the partners and stakeholders. Due to the complexity, depth, breadth, and volume of available information it is only possible to provide a snapshot of the market environment as at October 2016. The summary of the sections is then shown in Section 6 to compare SAM to the different Europe based platforms and apps and position it in an ecosystem for multi-media metadata marketplaces, including eLearning, linked content creation, multi-device delivery and social consumption within the SAM environment.

2.1.1 M&E and the 2nd Screen

From the launch of the SAM project in October 2013, the 2nd Screen market has had a tumultuous development in the run-up to October 2016 and the industry, which was split between hype and expectation in 2014, is demonstrably in the Trough of Disillusionment and the previously accepted meaning of ‘2nd Screen’ has evolved to encompass multi-screen via multiple smart devices.

The proliferation of devices into the market place is accelerating, with SmartTV, 4K TV, and 8K TV, tablets, smart devices and streaming devices driving continued growth in engagement and monetisation, opportunities around the 2nd Screen companion and viewing experience ecosystem, content creation and syndication and social media. Usage of laptops and smartphones continues to outpace that of STBs and SmartTVs in the connected living rooms of today. Consumers are increasingly creating content and concepts that become popular on YouTube or other multichannel networks, which have earned many individuals global (online) fame virtually overnight. Consumers also keep an estimated five devices or media applications running at any given time. Included in those...
five are the following media sources, pages, apps and devices described in this list of what consumers visit either via desktops or on their mobile:¹

Nielsen Insights 2016 and shows the changing pattern of engagement.² There is clear evidence that traditional linear and time-shifted TV has declined in recent months, in the USA, as more consumers are cutting the cord or opting never to sign up in the first place for TV packages filled with channels they don’t want, or have time to watch. Whilst many are turning to online streaming services like Netflix or Amazon for entertainment, the report indicates that consumers are moving away from TV to access entertainment, with increased use of PC, multi-media devices and games consoles, however it is clear that people are engaging more and more via the smartphone. See Figure 1.

Chart: “Hours and Minutes spent by Consumers on Media and Entertainment” Nielsen Insights 2016

![Monthly Time Spent by Medium Among Users](image)

**MONTHLY TIME SPENT BY MEDIUM AMONG USERS, (HH:MM)**

<table>
<thead>
<tr>
<th></th>
<th>Millennials</th>
<th>Generation X</th>
<th>Baby Boomers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live+DVR/Time-shifted TV</td>
<td>103:53</td>
<td>136:32</td>
<td>182:14</td>
</tr>
<tr>
<td>DVR/Time-shifted TV</td>
<td>20:29</td>
<td>25:37</td>
<td>28:38</td>
</tr>
<tr>
<td>AM/FM Radio</td>
<td>52:32</td>
<td>65:22</td>
<td>69:08</td>
</tr>
<tr>
<td>DVD/Blu-Ray Device</td>
<td>12:10</td>
<td>9:43</td>
<td>9:21</td>
</tr>
<tr>
<td>Multimedia Console</td>
<td>3:49</td>
<td>13:34</td>
<td>10:36</td>
</tr>
<tr>
<td>Internet on a PC</td>
<td>33:57</td>
<td>38:33</td>
<td>32:16</td>
</tr>
<tr>
<td>Video on a PC</td>
<td>15:24</td>
<td>12:14</td>
<td>8:30</td>
</tr>
<tr>
<td>App/Web on a Smartphone</td>
<td>54:03</td>
<td>51:52</td>
<td>38:17</td>
</tr>
<tr>
<td>Video on a Smartphone</td>
<td>230:09</td>
<td>1:154</td>
<td>1:101</td>
</tr>
</tbody>
</table>

Read as: In Q4 2015 Millennials spent 51 hours and 1 minute per month listening to AM/FM radio.
Source: Nielsen

Copyright © 2016 The Nielsen Company

**Figure 1: Monthly Time Spent by Medium Among Users**

A number of trends continue to define the M&E and 2nd Screen market in terms of consumer engagement and monetisation:

- **From 2nd Screen Hype to Disillusionment**: Despite the on-going popularity of general 2nd Screen activities by viewers while they watch TV, in 2015/2016 broadcasters and media companies remain reluctant to launch or continue their own 2nd Screen offerings and so dedicated 2nd Screen and/or social TV technology platforms have largely gone out of business. Both failure and merger and acquisition (M&A) led to the consolidation of the nascent ecosystem (see Annexes A and B) However, what is driving the market is the sheer proliferation of tablets and smartphones and consumers’ natural tendency to reach for them while watching “TV” as evidenced by continued consumer


engagement. In principal, three types of ‘2\textsuperscript{nd} Screen services remain in the market today:

- **Participation TV** involving large linear TV audiences viewing specific entertainment/quiz shows, sports events and TV debates. Programmes such as X Factor, Olympics, General Elections etc. often have their own companion mobile app into which participatory 2\textsuperscript{nd} Screen features such as quiz, voting or play-along can be integrated.

- **Device interaction** refers to the sending of content from the consumer's mobile device to the large, first screen TV device. This is a function offered by some OTT-Multiscreen solution providers and can also be achieved with stand-alone consumer devices (e.g. Google Chrome). Users can easily ‘flick’ and ‘fetch’ their own content from their mobile onto the main TV and swap between the devices as they move around.

- **Related content and social interaction** offered by broadcasters and media companies via branded, own 2nd Screen services on mobile devices. These are associated and/or synchronised with primary TV/Video watched on the First TV screen. Since 2014, this type of 2\textsuperscript{nd} Screen service has not been actively pursued by broadcasters and media companies as it is largely seen as a low priority as it brings little ROI. In 2016 there is a continued lack of such 2\textsuperscript{nd} Screen services from broadcasters and media which may provide an exploitation opportunity for SAM.

- **Social TV**: As a result of the lack of demand from broadcasters and media companies, the 2\textsuperscript{nd} Screen and social TV solution providers that emerged between 2011 and 2013 have now largely gone out of business, including those with large venture capital or other financial backing (e.g. Zeebox/Beamly). Remaining are a few platforms that enable participation TV formats related to linear TV entertainment, quiz or sport shows (e.g. PlayNow in the Netherlands). In addition, there are the general, user-initiated Social TV activities, which they conduct while they watch TV (e.g. using Facebook, Twitter, Instagram, Messaging Apps, Mobile Apps and Websites). In the latter case there is no direct relationship with a broadcaster or 2\textsuperscript{nd} Screen solution provider (apart from on-screen prompting and calls to actions for social-oriented programming formats).

- **The Physidigital Market**: Although the industry is moving toward digital production, distribution and consumption, many European countries still have a strong physical market. This translates into excellent opportunities for the M&E sectors that still produce books, CDs, consoles and DVDs, but the trends vary but still offer the opportunity for the SAM marketplace to supply rich content to companies to use to engage the consumer. Whilst some markets may continue to see growth in physical, digital is growing much faster. Some of these countries have more traditional retail where physical is traded online and offline, but increasingly consumers seek out smart phones and the content that comes with it. This has enabled SKY to provide a service where customers can get a movie straight to their TV, stream or download it to their mobile, tablet and laptop and receive the DVD direct to their home a few days later. At the joint SAM/MESA/BASE event in London, Luke Bradley-Jones, Director of TV and Content Products, Sky, said "Since its launch in 2014, Sky Store Buy & Keep has been well received by our customers, who have responded strongly to the convenience of digital ownership coupled with the familiarity of a physical copy. Sky is always looking for new opportunities for growth and I am looking forward to sharing some insight behind our performance to date and outlining the future potential that we see in the industry." However the music market has a short term demand for physical products,
which is demonstrated by the rise of streaming music sources such as Spotify, Deezer, Tidal and the recently launched Amazon Music Unlimited.

- **Monetisation:** In M&E, the strategy for success is shifting to seek the largest audiences possible for consumption, viewing or creating advertising and subscription revenues. There is now an imperative to create consumers who are ‘fans’ and who are active users united by shared ideas, interests, and experiences and who will return every day to brands, content and properties. Current fans recruit new fans and research shows fans spend more per capita and are less likely to churn. This is recognised across sports, ‘fan conventions’, other forms of entertainment.

- **Big Data Analytics:** Companies can know more about who their users are and what they want, when they want it and how they want it delivered. This enables companies to monetise products and experiences more effectively and more broadly through the ability to arrive at data-driven and observation-driven insights into consumer needs that uncover desirable new products and experiences, to identify cross-selling opportunities and reveal potential improvements in services and features that will translate into a more engaged user base and active fan community which is willing to spend more. Duncan Wynn, sales director at Sky Media, believes the use of data will take cross-platform campaigns to the next level in 2016, as marketers are “now able to understand this multiscreen behaviour like never before”.

- **TV Everywhere (TVE):** The current response of traditional TV players has not been adequate to halt the march of OTT. Over the last few years, the industry’s counteroffer has been “TV Everywhere” (TVE) — viewing of network content on any device for consumers with pay-TV subscriptions. However adoption of TVE has been disappointing, owing to low overall awareness, a lacklustre user experience, and authentication difficulties. Today, fewer than one in seven U.S. pay-TV households actively uses TVE.

- **OTT Services:** More and more people are choosing to stream video through over-the-top (OTT) services, that is, services that deliver film and television content via the Internet, without the need for traditional cable or satellite TV subscriptions. Today, 78 percent of U.S. consumers subscribe to at least one OTT service, according to PwC.

- **Streaming Services:** M&E companies are selling more and more of their content, libraries of movies and television shows as well as new originals, to streaming services such as Netflix, Amazon, and Hulu. Although these sales have driven short-term revenue gains for both studios and networks, they have also enabled OTT services to gain a firmer grasp on the end-user relationship, monetise viewership in more advertising-free and ad-light environments, and build their brands at the expense of the studios or networks supplying the shows.

- **The Rise of Mobile Advertising:** The U.S. mobile telecom provider Verizon has added a number of advertising-related businesses, including most of Microsoft’s ad-technology operations and an ad-technology company called Millennial Media that the telecom provider bought for $250 million. Verizon is interested in buying Yahoo’s ad and content businesses for the same reason it acquired AOL last year for $4.4 billion which is to build the revenue from digital advertising on mobile devices, as growth in the traditional telecom business slows. Data from eMarketer’s UK Media Consumption research shows that 49% of all UK adult media consumption is via digital channels, yet

---


4 [https://www.eventbrite.co.uk/pressreleases/eventbrite-fandoms-study-reveals-insights-into-con-attendees-spending-and-cosplay/](https://www.eventbrite.co.uk/pressreleases/eventbrite-fandoms-study-reveals-insights-into-con-attendees-spending-and-cosplay/)


only 46% of the UK’s £15.7bn total ad spend goes on digital, according to the Advertising Association/WARC Expenditure Report.\(^8\) The gap is even more pronounced with regard to mobile, which includes tablets and smartphones which highlights the potential for revenue growth.

- **Moment Marketing:** Given the rise of digital content consumption via smart devices, linking online with offline has become a key consideration for marketers. Dubbed ‘moment marketing’ by WARC\(^9\) this type of consumer engagement is set for growth with over two thirds (67%) of brands planning to spend more on digital campaigns triggered by offline events.\(^10\) TVTY’s report shows that brands plan to focus reactive marketing on a range of offline ‘triggers’ this year including popular TV shows (52%), sports events (48%), financial events (40%), TV advertising (38%) and changes in the weather (33%). Almost a quarter (24%) of respondents say they would use moment marketing on social media to counter-attack when a competitor brand’s ad is being aired on TV. The research also shows UK marketers already spend 23% of their digital budgets on moment marketing; Facebook is the most common channel cited by 73% of brands, followed by Twitter (65%) and Instagram (44%). Online video (43%) and search (40%) are also frequently used to deliver reactive marketing campaigns.

- **Consolidation:** AT&T’s proposed $85.4-billion takeover of Time Warner Inc. is a dramatic example yet of the shift in the balance of power in Hollywood from the big screen to the small screen. The rise of high-speed Internet and smartphones means that consumers are getting increasingly their entertainment not from the multiplex cinemas or traditional TV outlets but from the Internet and their mobile devices. AT&T Chief Executive Randall Stephenson, in announcing the deal, told reporters Saturday: “We believed premium content was always going to win, and it has been true when you think about the big screen, it has been true on the TV screen and we are seeing that it is also true on this mobile screen.”\(^11\)

- **Consumer Created Content:** Consumers are increasingly creating content and concepts that become popular on YouTube or other multichannel networks, which have earned many a creative novice global (online) fame overnight. Through pre-roll advertisements on clips to sponsored content or simply being paid directly to feature products in their videos so brands can get in front of their millions of followers, such creators have been able to make a very good living from YouTube. With 40 million subscribers, 26-year-old gamer PewDiePie recently topped Forbes’ list of YouTube’s highest-paid stars\(^12\), having earned $12m in a year. Zoella, a British beauty vlogger, launched a makeup line called Zoella Beauty, Michelle Phan recently raised $100m in funding for her make-up delivery service Ipsy, Lyndsey Stirling catapulted to online fame playing the violin while dancing whilst and she even appeared on America’s Got Talent.

### 2.1.2 Content Syndication

In the current economic climate and context, the most interesting area of a content syndication business for SAM partners is ‘through-channel marketing automation’ (TCMA). As defined by Sugata Sanyal in his recent article for Zinfi.com: “The entire purpose of through-channel marketing automation is to enable partners to create brand presence by

---


\(^9\) [https://www.warc.com/Blogs/Moment_marketing_is_where_the_magic_is_blog?id=2343](https://www.warc.com/Blogs/Moment_marketing_is_where_the_magic_is_blog?id=2343)

\(^10\) [https://www.tvty.tv/academy/tvty-moment-marketing-whitepaper-leaders-laggards/](https://www.tvty.tv/academy/tvty-moment-marketing-whitepaper-leaders-laggards/)


leveraging the vendor brand and associating it with their own brand, and then driving demand for a set of solutions that include offerings from the vendor."

During the last year, the following features were needed to be a part of any successful solution in this segment:

- Content syndication has to be SEO friendly
- It has to automate more than one of the following: email, social media, SMS, and digital ads
- It has to provide real-time monitoring of the sites visitors and provide real-time analytics
- Based on the collected data via the monitoring of users’ activities it has to allow dynamic segmentation of marketing campaign targets
- Based on the collected data via the monitoring of users’ activities it has to recommend specific actions over the clustered user groups.

Since the last big merge happened more than a year ago in this market (SharedVue’s acquisition by Zift\textsuperscript{13}) there were no such large movements detected. At the same time players such as, e.g. Taboola (https://www.taboola.com/), started offering solutions that fit into content syndication domain and they demonstrate features that are also a part of the SAM platform.

At the same time, SAM still has unique features such as personalisation of syndicated content, dynamic users’ communities, second screen creation, which are still not in the arsenal for the known commercial tools. Those aspects that are an integral part of SAM platform are starting to be shown in the market as clear decision criteria for the customer in a near future.

Since the last year and a publication of. “Through-Channel Marketing Automation Platforms, Q3 2015” by The Forrester Wave™, where TIE Kinetix – SAM Coordinator, showed as a strong performer\textsuperscript{14} there were no new updates released by the major analytical firms.

2.1.3 SmartTV and Connected Devices

TPVI reports that the market context of Connected and Smart TVs has not changed significantly with respect to the situation and prospects presented in D2.2.2. Trends in increasing importance of OTT and usage scenarios of auxiliary screens are being confirmed, while no significant new evolutions have emerged.

2.1.4 Social Media

Social Media has become an integral part of the everyday life of many people both in developed and developing markets.

The findings in the area of Social Media which were presented in D2.2.2 are still valid. Social Media platforms have a key role to play in the online and mobile market, and continue to grow and provide additional features to improve the user engagement and satisfy their needs. In the current report, the new trends in this domain are highlighted in order to better understand how SAM, or any other social media-enabled platform, can benefit from the social networks and be better positioned in the online, mobile and entertainment markets.

\textsuperscript{13} http://ziftsolutions.com/ziftsolutions-sharedvue/
Regarding the Social Media usage globally (figures on January 2016), the number of active Social Media users reaches 2,307 million (31% penetration), with 1,968 million active mobile social users. The annual growth of Social Media users continues apace (10% increase since January 2015), particularly in the number of mobile social users, which increased 17% last year (an additional 283 million users since January 2015).

Social networks are now well established, and there is a set of top 5 popular platforms which does not appear to change from year to year. According to a report in April 2016 by Statista, illustrated in Figure 2, the most popular social networks based on active users are:\(^\text{15}\)

- Facebook: 1,590 million users (18% market share)
- WhatsApp: 1,000 million users (11% market share)
- Facebook Messenger: 900 million users (10% market share)
- QQ: 853 million users (9% market share)
- WeChat: 697 million users (8% market share)

Figure 2: Leading Social Networks Worldwide (April 2016)
When comparing the popularity of social networks it is better to focus on active account usage and not just the number of user accounts.

Regarding the growing rate of social networks, the figures in 2016 reveal a decline of Twitter (with a 4% of market share and about 313 million users) compared to its immediate competitors: Facebook, Instagram and WhatsApp. Figure 3 shows these figures.

![Figure 3: Monthly Active Users of Twitter, Facebook, WhatsApp and Instagram](image)

With respect to engagement of leading social networks (time spent on the platform), Facebook effectively dominates the landscape, with Snapchat doing really well in terms of monthly minutes per visitor. See Figure 4.
To sum up, Social Media continues growing in terms of engagement and penetration, with a set of key actors that continue dominating the market and the confirmation in 2016 that Twitter touched the ceiling and is now halted.

2.1.5 Dynamic Contextual Social Media Community Creation

SAM proposes the automated, and timely, dynamic creation and management of Social Media communities related to content being viewed on a 1st Screen device. The authors are currently not aware of any system that provides such functionality related to 2nd Screen experiences. More broadly comparable functionalities such as ‘friend recommendations’ or ‘hashtag recommendations’ are important features for Social Media providers but are commonly directly integrated into the consumer-facing offerings of social media providers such as Facebook or Twitter. However, such functionalities cannot be directly compared with the ‘dynamic communities’ concept of SAM, because they are based on different types of input data and focus on recommending entities (e.g. friends, hashtags) instead of identifying groups of users.

Similarly, Social Media analytics tools and services can often provide insights into user communities using clustering techniques, but unlike the dynamic communities’ functionalities, findings from Social Media analytics tools are not usually directly fed back into a running system in the way the SAM dynamic communities’ features are. The following subsection provides a short overview over business intelligence and analytics features.

2.1.6 Business Intelligence & Analytics

Business Intelligence (BI) can be defined as the ability to take all organisation’s capabilities and convert them into digitalised knowledge, getting the right information to the right people, at the right time and through the right channel. When these opportunities have been recognised and a strategy has been implemented, they can theoretically provide the organisation with a competitive advantage in the market or within its industry.
BI technologies provide a view to historical and current business operations and even give clues for future optimisations. The best known features of business intelligence technologies are analytical processing, data mining, reporting, analytics, business process mining, event processing, benchmarking, text mining, predictive analytics and predictive analytics. One of the main goals of Business intelligence is to support better business decision making. BI technologies are used to mostly analyse internal, structured data and business processes.

The major recent transformations in the business intelligence market have been towards the analytics aspects of the field.

Earlier BI platforms generations are often less agile. Today BI platforms are scalable and robust, support and promote a single version of the truth, and minimise operational risk. However, these capabilities are complex and inflexible promoting a slow reaction to the constant customer changes in the business requirements. This lack of BI agility promotes some side effects of earlier generation BI systems: only a small percentage of enterprise data is leveraged for business insights and the majority of BI applications are still built by a shadow IT process.

Therefore, the big BI challenge today is to provide an Agile BI as an agile enterprise needs an agile BI platform and the most important objectives to take into account in order to achieve this goal are the following:

- **Empowering business users to be self-sufficient.** Core Agile BI requires capabilities that empower business users to be self-sufficient in their BI environment with little or no involvement from technology professionals. This involves development of more user-friendly user interfaces for interaction with BI backend.
- **Helping business users get more insights with effective data visualisations.** Today’s technologies are represented by an array of data analysis and visualisation options starting with familiar Microsoft Excel and ending with rich specialised web and desktop GUIs.
- **Giving BI professionals options to provide additional features such as BI platform features that can empower IT professionals to deploy BI platforms and applications and customise BI applications.**

Based on the Gartner’s Magic Quadrant for Business Intelligence and Analytics Platforms actualised for 2016\(^{16}\), it is possible to identify several most obvious leaders in the category: Microsoft, Qlik and Tableau Software. Whilst SAM features many BI features, it is not intended that it will compete within the BI market, rather that SAM will utilise the most appropriate tools for the SAM users.

**2.1.7 Dialogue Speech Control Systems**

Dialogue was previously reported as an area of growth in D2.2.1 and D2.2.2. All previous findings are still true and the latest indications in this direction is a number of consolidations and investments in smaller niche companies from major players on the market that have happened only in the last few months. This includes Google acquiring Api.ai\(^{17}\) in September as well as Samsung acquiring Viv\(^{18}\) in October.

\(^{16}\) https://www.gartner.com/doc/reprints?id=1-2XXET8P&ct=160204
\(^{17}\) https://api.ai/
\(^{18}\) http://viv.ai/
Other significant news in the voice sector is Spotify integration with Amazon and Sonos\(^{19}\) to include voice control in their home entertainment solutions and Microsoft having Cortana being a significant part in Windows 10 and included in their Hololens Mixed Reality solution where they even have a plan to introduce Cortana as a holographic character\(^{20}\).

Talkamatic’s response to the latest development is to offer the TDM core consisting of Generation and Dialogue Management facilities as plugins to Cortana, Amazon Alexa (Echo) etc.

### 2.1.8 Sentiment Analysis & Social Mining

Social Media is defined as a group of Internet-based applications that allow the creation and exchange of user-generated content, giving users an easy way to communicate with each other. Social Media Mining (or Social Mining) is the task of representing, analysing, and extracting information from Social Media. The primary goal of this data mining process is to effectively handle large-scale data in order to extract patterns and gain insightful statistics.

A group of technologies are closely related to Social Mining is Sentiment Analysis. This research field, also known as Opinion Mining, aims to automatically identify the feelings, emotions, or intents behind a given text using different text mining techniques. Quantifiable Sentiment Analysis has been facilitated by the ready availability of the immense and classifiable body of Social Media data in the Internet. In fact, Social Media has not only facilitated the development of Sentiment Analysis tools, it has actually necessitated it. For any given subject, there exists such a vast amount of information on the Internet as to make manual reviews and processing infeasible. In this context, Sentiment Analysis is becoming a key feature for any company working in the field of Social Mining, and there is a progressive trend to incorporate such technologies in their products.

The relevance of Social Mining is reflected in the number of companies working on mining data generated in Social Media that have arisen in the last years. The webpage Social Media Analysis\(^{21}\) provides a list of nearly 600 companies in the business of data mining on Social Media. In 2015, 32 companies in the area of Social Mining changed hands, a slight decrease with respect to the 39 changes in 2014 (see Figure 5). The logic underlying acquisitions continues from last year, with the majority representing portfolio plays, as more companies pursue software suite strategies. Some combinations saw smaller players in the same cities joining forces, while others represented a purchased entry into international markets.

![Acquisitions in Social Media Analysis](http://socialmediaanalysis.com/)

Source: SocialMediaAnalysis.com

---

\(^{19}\) [http://www.sonos.com/](http://www.sonos.com/)


\(^{21}\) [http://socialmediaanalysis.com/](http://socialmediaanalysis.com/)
Figure 5: Acquisitions in Social Media Analysis

Almost all of the deals in this market involved privately held companies. The highest deal of 2015 was Cision\textsuperscript{22}, paying $841 million to add PR Newswire\textsuperscript{23} to its expanding suite of tools for public relations and communications. The company also incorporated to its collection of tools Viralheat\textsuperscript{24}, another social media intelligence platform.

Sprinklr\textsuperscript{25} continued its acquisition strategy, adding NewBrand\textsuperscript{26} (location-based customer intelligence), Pluck\textsuperscript{27} (community platforms), Get Satisfaction\textsuperscript{28} (customer care), and Booshaka\textsuperscript{29} (audience segmentation) to its products set.

The investment firm that owns Marketwired and Sysomos\textsuperscript{30} separated the previously merged companies and gave Sysomos new purpose, launching a suite strategy with the addition of Expion\textsuperscript{31} (social media management) and gazeMetrix\textsuperscript{32} (image recognition).

Simply Measured bought Inside Social (conversion and attribution metrics) and DataRank\textsuperscript{33} (social media intelligence). Linkfluence\textsuperscript{34} expanded to Asia with ActSocial\textsuperscript{35} and Germany with MediaLysten.\textsuperscript{36} Spredfast\textsuperscript{37} went after social data integration expertise in Shoutlet.\textsuperscript{38}

Companies in the business of Social Mining reported taking in over $445 million in new investments in 2015.\textsuperscript{39} See Figure 1 for a detailed list of companies and investment obtained.

<table>
<thead>
<tr>
<th>Company</th>
<th>Investment</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affinio</td>
<td>$4 million</td>
<td>November 2015</td>
</tr>
<tr>
<td>Augure</td>
<td>$16 million</td>
<td>March 2015</td>
</tr>
<tr>
<td>Bottlenose</td>
<td>$13.5 million</td>
<td>February 2015</td>
</tr>
<tr>
<td>Brandwatch</td>
<td>$33 million</td>
<td>October 2015</td>
</tr>
<tr>
<td>Dataminr</td>
<td>$130 million</td>
<td>March 2015</td>
</tr>
<tr>
<td>Ditto</td>
<td>$4 million</td>
<td>August 2015</td>
</tr>
<tr>
<td>Falcon Social</td>
<td>$16 million</td>
<td>March 2015</td>
</tr>
</tbody>
</table>

\textsuperscript{22} http://cision.com/
\textsuperscript{23} http://www.prnewswire.com/
\textsuperscript{24} http://viralheat.com/
\textsuperscript{25} http://www.sprinklr.com/
\textsuperscript{26} http://www.newbrandanalytics.com/
\textsuperscript{27} http://www.pluck.com/
\textsuperscript{28} https://getsatisfaction.com/
\textsuperscript{29} https://www.booshaka.com/
\textsuperscript{30} http://www.sysomos.com/
\textsuperscript{31} http://expion.com/
\textsuperscript{32} http://www.gazemetrix.com/
\textsuperscript{33} https://www.datarank.com/
\textsuperscript{34} http://linkfluence.com/en/
\textsuperscript{35} http://www.actsocial.com/
\textsuperscript{36} http://www.mediamonitoring.de/
\textsuperscript{37} http://spredfast.com/
\textsuperscript{38} http://www.shoutlet.com/
**Figure 1: Investment in Social Media Analysis Companies in 2015**

All these deals, transactions and investments reflect the relevance and interest on Social Mining technologies in the current Internet ecosystem. SAM will be positioned in this area by combining Social Media and Sentiment Analysis to provide the possibility to enhance both users and content providers’ experience in the 2nd Screen ecosystem. Applications such as social conversation monitoring, consumer reviews and services analysis, and monitoring reputation, will be directly applied in the framework of SAM. Other applications such as social recommendations and competitive intelligence, which fall out of the scope of SAM, could be looked at in the future thanks to the technologies developed in the course of the project.

### 2.1.9 Emerging Areas of Content Monetisation

Until recently, there was a clear recipe for success in media and entertainment: multiple revenue streams, scarce distribution outlets, and distinct exploitation windows. To thrive in today’s (and tomorrow’s) environment, however, companies need to drive both innovation and efficiency, embracing new approaches to content development, distribution, operations, technology, and monetisation. In short, they need to adapt their strategies, capabilities, and operating models to address several key imperatives:

In their race to understand digital consumers, meet their needs and monetise their evolving demands and behaviours, companies across the M&E value chain have been applying innovation agility and acuity in breaking down the silos between segments and crossing traditional boundaries to compete in each other’s core area.

From traditional TV viewers, cable subscribers to millennials and ‘cord cutters’ multiscreen viewing services are resonating with consumers. For cable companies, ‘TV Everywhere’ largely started out as a defensive effort against services from the likes of Hulu, Netflix and
Amazon but now Multichannel Video Programming Distributors (MVPDs) are be proactive to reduce churn, recruit new viewers that don’t fit the traditional viewer demographics and increase revenue from their multiscreen offerings.

- Areas of potential for monetisation can be illustrated from the following examples:

  Some of the hottest-selling gifts in Q4 of 2015 were streaming video devices and smartphones. These developments foreshadowed the M&E industry’s rapid transition to a direct-to-consumer world, where most content will remain the same but the packaging and distribution changed significantly. Specifically, the expansion of digital technology, manifested in more ubiquitous fixed and wireless network connectivity enabling growing numbers of connected devices and new routes to the user, is altering the industry’s structure, driving new ways to produce, distribute, and monetise content across its landscape.

- Monetising TV services now includes using dynamic ad insertion (DAI), the use of special mobility charges or transactional charges (such as electronic sell through) and higher overall subscription fees.

- Comcast is working on an advertising-based digital video service, which is being called “Watchable” for now, that will work on its next gen X1 platform.

- In October 2016, Netflix reported over 86 million subscribers worldwide, including more than 47 million in the United States. Online video distributors such as Netflix, Amazon and HBO are creating premium content, and using it to drive subscriptions with the future potential for licensing it to traditional broadcast networks in some territories. Netflix is releasing an estimated 126 original series or films in 2016, more than any other network or cable channel.

- Walt Disney Co. introduced its first standalone streaming service, Disney Life - a video and music product in the U.K.

- Disney recently announced that it would buy a 33% stake in Major League Baseball’s BAMTech streaming media unit, which would serve as the foundation for a new OTT (offering for ESPN allowing consumers to subscribe to a stand-alone streaming ESPN service, without a pay TV subscription, similar to Time Warner's HBO Now.

- Disney continues to produce blockbuster film franchises in the Marvel, Pixar, and Star Wars universes to ensure that they deliver increasing revenues year after year.

- Content companies such as Lionsgate are going direct to consumers via online branded channels, iTunes, Amazon and mobile, bypassing established distributors.

- Outside the home, non-TV-based video offerings such as YouTube will continue to succeed because their content is built for remote smart devices favoured by younger people

- Traditional subscribers report that they tend to remain with their pay TV providers’ multiscreen options because they tie in with telephone, mobile and broadband services those providers already supply.

- US content firm Starz will become the latest premium cable network to launch a standalone OTT streaming service as Starz lost about 200,000 subscribers in Q3 2015.

- Advertisers are creating and distributing their own short-form content on platforms such as YouTube and Facebook.

---

40 http://files.shareholder.com/downloads/NFLX/2992434071x0x912075/700E14FD-12BE-4C3A-9283-9A975C7FE549/FINAL_Q3_Letter.pdf
41 http://www.lionsgate.com/channels
42 http://www.youtube.com/user/UKVolkswagen
• Social advertising continues to win marketing budgets – up 33.5% from last year to $23.68 billion predicted globally in 2015. Native advertising, or sponsored posts, continue to increase. BuzzFeed has been very successful with sponsored posts, charging publishers to post relevant content that dovetails with a brand message. The political site Talking Points Memo (TPM) turned native advertising into a $1 million business in the first year. TPM was able to quickly command high ad rates by having an engaged audience and targeting campaigns at a relevant readership.
• Facebook added 220 million monthly active users in the past year, bringing the total audience to 1.71 billion users. More than 90% of Facebook’s users are on mobile devices, where Facebook derives the bulk of its ad dollars.
• Facebook’s mobile advertising revenue accounted for 84% of Facebook’s $6.2 billion in advertising sales in the Q2 2016.
• Snapchat will seek to raise as much as $4 billion in its planned initial public offering, according to unconfirmed reports. The IPO could value Snapchat at about $25 billion to $35 billion.

The competitive advantage that diverse players are now pushing to achieve is moving beyond the consumer ‘experience’ to consumer ‘relevancy’. It is no longer sufficient to target a consumer segment with an experience designed loosely for a group of people. Instead, companies are looking to drill down to a personal level, engaging and capturing the interest, imagination and spending of a specific individual by delivering the message, the offer or the content that is contextually most relevant to them anytime, anyplace, anywhere to ensure a successful monetisation strategy.

2.1.10 2nd Screen Content Editing and Linking

More than two-thirds of TV viewers say they use devices while watching TV while performing largely unrelated tasks in front of a TV screen is fast becoming normal. However, when the content on both screens is linked for an advanced and curated viewing experience, which is when 2nd Screen becomes potentially exploitable.

Many new technologies have been developed and advanced around the multi-screen phenomenon. All of these technologies aim at very specific enhancements of the consumer experience (i.e. general information, social media delivery, polls and quizzes) but what all these have in common is the enhanced linkage of content between 1st and multi-screen. There is a big difference however between the enhancement of the (TV) viewing experience with additional content and the dynamic creation of the viewing experience. The SAM framework and tools produce a new way of creating and also linking content for the viewing experience. Asset descriptions and the respective linking and annotation mechanisms of SAM will establish the technical and technological foundations of a modern environment, for personalised and contextually aware Content Syndication to multi-device platforms supporting extensive Social Media integration and advanced business intelligence. The linking of content in SAM platform varies from simple entity linking to advanced media connection. In the linking platform abstract connection between media content is presented in order to help media providers to create more effortlessly 2nd screen experiences. These connection are delivered in many forms, from suggested media content depending on the specific experience providers want to produce, related content from Wikipedia pages to social media enhancements of the content. With the help

of semantic connections and enriched metadata creation the experience of linking content becomes more intellectual and easy to produce.

2.2 SAM’s Position in the M&E Ecosystem

This section positions the SAM project in terms of its context of the changing M&E landscape in order to identify not only the challenges but also the business opportunities which SAM presents to the main stakeholders. It provides a description of the current state of the target market sector and will be used as a guide to ensure that SAM develops a commercially viable system that is actually needed by the target audience and that has a niche in the market.

2.2.1 Trends Relevant to SAM Which Are Transforming M&E

The M&E industry is going through an unprecedented change driven by innovative technology, adoption of new devices, streaming media, high-bandwidth networks, Social Media platforms and consumer desire for rich content everywhere. Consumers now access, select, share, and consume compelling content delivered across traditional, digital, social, or any other channel they prefer. By 2017, at the completion of the SAM project, the Millennial generation will comprise the largest online audience and there are indications that they are impacting on the entertainment industry.

Kevin Westcott, principal and US Media and Entertainment Consulting leader, Deloitte Consulting LLP stated, “The on-the-go, always-connected consumer is driving cultural changes in content consumption that fundamentally impact how companies connect with and engage consumers. These behavioural changes combined with the shift towards mobile-based consumer experiences are disrupting traditional business models—while at the same time paving the way for newer opportunities for technology, media, and entertainment companies to adapt and evolve.”

Several key trends exemplify the ways SAM will help M&E companies maintain and increase revenues by providing rich and engaging experiences for the consumer as seen in the following sections.

2.2.1.1 Accessing Content on Any Device, Anytime, Anywhere

Consumers, especially Millennials are adopting a multi-platform, media consumption lifestyle where they expect to have the same high-quality user experience no matter how they’re accessing the content. However, in the USA, 18 - 24 year-olds are watching less traditional TV, due to increased consumption of OTT video. As a number of reports have been out suggesting that streaming video has supplanted linear TV as the dominant form of video consumption among youth: See Figure 7.
Figure 7: Video Viewing Among 18-34 Year-Olds by Device

A survey from Deloitte finds 19-25-year-olds estimating that they spend 39% of their TV content time watching streaming video as opposed to 29% watching live programming, with streaming (31%) also ahead of live viewing (28%) among 26-32-year-olds. New data suggests that streaming is at least partly to blame for Millennials' decisions to forego pay-TV.\(^{45}\)

2.2.1.2 Consumption of Media across Multiple Channels

Consumers no longer sit at home passively watching TV programmes; the traditional living room viewing experience is clearly evolving and will continue to do so over the next five years as VOD and OTT SVoD services are added to the sources of viewing content as Internet users increasingly have multichannel and an OTT SVoD services. For many, streaming video is becoming an integral part of the viewing lifestyle and no longer tied to their physical infrastructure, OTT offerings have the potential to offer huge opportunities for distributors to reach beyond their footprint, shaking up the entire pay TV model.

The Leichtman Research Group (LRG)\(^{47}\) finds in a new survey that 3 in 4 TV households in the US now have a DVR, subscribe to Netflix, or use video-on-demand (VOD) services from a cable or telco provider, up from 70% last year. Other related findings include:

- 66% of households with annual household incomes >$75,000 have a DVR -- compared to 33% with incomes <$30,000
- 25% of current non-DVR households previously had a DVR at home
- 59% of all cable subscribers have ever used VOD -- compared to 46% in 2009, and 10% in 2004
- 63% of digital cable subscribers, and 58% of Telco video subscribers, used on-Demand in the past month

\(^{46}\) http://www.marketingcharts.com/television/svod-services-have-big-impact-on-millennials-decisions-to-forego-pay-tv-71130/

27 / 72
• 36% of pay-TV subscribers get Netflix -- compared to 48% of non-subscribers
• 36% of Netflix subscribers stream video daily, and 72% weekly -- up from 10% daily, and 43% weekly in 2010
• 32% of pay-TV subscribers with Netflix stream Netflix daily -- compared to 53% of non-subscribers with Netflix
• Last year, 70% of households had a DVR, or Netflix, or used on-Demand

Nielsen’s most recent “Total Audience Report” indicates that Americans aged 18-24 watched a weekly average of 15 hours and 5 minutes of traditional TV during Q2 2016. That represents a year-over-year decline of roughly 1 hour and 20 minutes per week. In other words, 18-24-year-olds as a group went from watching about 2 hours and 20 minutes per day during the second quarter of 2015 to about 2 hours and 10 minutes per day during Q2 of 2016.

Consumers view, listen to, follow, and actively engage with the content being delivered without regard to the medium, company, or channel delivering it. SAM will help companies to extend their brands, content, and audience engagements across multiple channels, through Content Syndication, 2nd Screen and Social Media. SAM’s Business Intelligence components will provide business users with analytics to support real-time decision making with respect to programming, marketing (including digital marketing and Social Media), Public Relations PR, and ad sales.

2.2.1.3 How Millennials may be Changing Entertainment

In 2016 nearly half of Americans subscribe to streaming media services and many Millennials the influence of online reviews and social media eclipses TV advertising whilst two-thirds of millennials value interactions with friends on social media as much as time spent in-person.

According to Deloitte’s 10th “Digital Democracy Survey:

• More than half of all consumers and three-quarters of millennials watch movies and TV shows via streaming on at least a monthly basis
• Millennials aged 26-32 who currently pay for streaming video have an average of three subscriptions
• Millennials aged 14-25 value their streaming video subscriptions more than pay TV subscriptions
• Over one-third of baby boomers aged 50-68 (35 percent) who binge watch TV do so once a week, and average four episodes per sitting
• Over half (53 percent) of US consumers who binge watch choose television dramas
• The percentage of streaming subscribers who ranked the service among their top three most valued subscriptions has tripled in the last three years (61 percent today, up from 17 percent in 2012)
• Nearly three in four millennials aged 19-32 are more influenced in their buying decisions by social media recommendations than TV ads

• Of millennials aged 19-25, 71 percent indicated that their buying decisions are influenced by online reviews from people they do not know, which is higher than the number who are influenced by TV ads
• More than one-third of consumers under age 50 and nearly half of millennials say their buying decisions are influenced by an endorsement from an online personality
• Social media sites have surpassed television as the most popular source of news for millennials
• Two-thirds of millennials say they value their time interacting with friends on social media sites as much as their time spent in-person
• Eighty-five percent of US consumers are currently on social media and 58 percent check their social networks daily
• More than 90 percent of US consumers are now multitasking while watching TV
• Millennials admitted to engaging in an average of four additional activities while watching TV, primarily surfing the Internet, using social networks, and text messaging
• Thirty-three percent of all consumers typically browse the web while watching TV
• Fewer than one-quarter of consumers’ multitasking activities are directly related to the program being watched, indicating that second screen activities have yet to realise their full potential

“The proliferation of online content shows no signs of slowing down and the consumer appetite to consume content is equally voracious,” said Gerald Belson, vice chairman and US Media and Entertainment Sector leader, Deloitte Consulting LLP. “The survey data indicates that consumers are more willing than ever to invest in services to watch whenever, wherever, and on whatever device they choose.”

2.3 Living and Learning with Smart Devices

The use of smart devices in education is a hot topic and many advocates believe that smart devices could transform the learning experience by engaging students and extending and personalising learning. This section examines attitudes to e-Learning, explain how SAM will make a contribution and how SAM was evaluated in two Spanish schools in a representative school environment. This is reported in detail in D8.3.2.

2.3.1 Attitudes to the Use of Smart Devices in Education

e-Learning is considered to be sound, effective, and time and cost saving approach of learning and e-Learning tools and technologies have been helping students to broaden their knowledge for some time now. However, there are still problems in e-Learning such as time limitation, low-bandwidth network, fixed location, stickiness of students to their computers. To be able to tackle and solve such problems, scholars now focus on mobile learning. The focus on mobile learning has increased after the recent advancements in ICT, notably mobile technology. With mobile learning, students are not limited to time, fixed location, stickiness to their computers, etc. On the contrary, the education is available anywhere at any time). That is to say, the learning is becoming ubiquitous. The need for learning through mobile devices increases as more and more students use their mobile devices to get the necessary information and knowledge. It is essential for students to manage their time to utilise the available learning resources at maximum, particularly in the fast growing technological era.
There are a number of trends in e-Learning, most of which are relevant for SAM:

- **Mobile Learning**: A majority of young people use their smartphone more than laptops or computers, which gives the market of e-Learning a new branch to grow on. There are many e-Learning tools in the market that are either specifically for smartphone usage or can be used both on computers and mobiles. The greatest advantage of mobile learning lies in its effectiveness and convenience. Having an e-Learning tool right in a pocket, to be used whenever and wherever, and being able to access information and records easily has become an important aspect of mobile learning.

- **Personalised E-Learning**: Personal interests and preferences matter a lot, therefore, if a system offers the chance to choose your own preferences rather than imposing a set structure, it becomes easier to learn as well as being less stressful. Personalised e-Learning puts the student in charge of his/her learning management. Setting their own goals, moving at their own pace and building communication with the teachers makes up the basis for personalised learning.

- **Micro Learning**: Micro learning is a big aspect of learning management systems. Breaking content into small segments for easier understanding is becoming a huge part of online training. Making learning shorter, sharper and easier to digest is the purpose of micro learning. The attention span of today’s generation is about 90 seconds and so to cater for this, micro learning keeps the interest of the learner by dividing it into fragments.

- **Social Media Learning**: SAM, like Facebook gives the option of creating open and closed groups and this can be instrumental for instructors to post relevant material on the group, have educational discussions and answer queries for the students. Professionals are starting to notice the benefits of using social media as an e-Learning tool. A poll by GlobalWebIndex shows that users spend around 28 percent of their online time on social media. This number is expected to grow as shown in Deloitte’s “Millennial Survey 2014” and by 2025, 75 percent of the global workforce will be Millennials, favouring social media learning.

- **Gamification**: Mixing work and play is the basis of gamification in e-Learning. The vendors of learning management systems understand the importance of applying the gaming mechanics to learning processes making it easy for the users to learn and retain the knowledge for a longer time. The motivation to reach higher levels to get more points, the satisfaction in beating your opponents and earning rewards can be applied to learning and a healthy environment is created where the users participate and compete while learning.

- **Virtual Reality and Augmented Reality (VR/AR)**: Every learner has a unique pace to learn and reacts differently to different environments and educators and students alike are seeking an ever-expanding immersive landscape, where students engage with teachers and each other in transformative experiences through a wide spectrum of interactive resources. VR/AR are believed by many to provide the next big step forward in education as educators will be able to capture the attention of their students like never before and get them more actively involved in the classroom. Using VR and AR technology will not only make learning more interesting and exciting to students but it will also increase retention because it engages them in a way which textbooks simply cannot compete with. Several

49 https://www.linkedin.com/pulse/20141122070344-30938497-next-generation-learning-chunking-and-micro-learning

companies are currently working on innovations in this space and the results seen so far indicate a positive sign of things to come.

- Big Data: Big Data can be evaluated for insights that determine the root cause of problems, help identify risks and ultimately lead to better decisions and strategic moves. For an e-Learning tool, it means that problem students can be identified, progress of students can be monitored and a better system can be implemented according to the ease and requirements of the students and instructors.

- Video-Based Learning: Most of pupils are visual learners and so videos can provide an excellent resource for e-Learning. Using videos as a learning management system ensures the option for a learner to study at their own pace.

Video-Based Learning is especially relevant for SAM Video use continues to grow in education. It is both growing in volume (the amount of video produced and watched), as well as in the number of use cases where video is being used. As we become increasingly accustomed to using video in every aspect of our daily lives, students and educators expect to encounter video in every step of the educational process, and recognise the importance of digital and video literacy for success beyond the school. Video has the power to improve learning outcomes, helping increase knowledge transfer and improving outcomes on assignments and exams. But educational institutions are also using it beyond the classroom, to increase student and instructor retention, streamline admissions, and build communities.

To get better insight into how video is perceived and used across educational institutions today, as well as the latest thoughts on digital/video literacy, best practices, and future use cases, Kaltura undertook its third annual online survey during April 2016. Here are some highlights:

**On video in the classroom:**
- 86% of respondents say that their organisation includes teachers actively using video in the classroom.
- 72% are using video for student assignments, and 10% of respondents say more than half of students actively create video.
- Flipped classrooms are becoming a widely used form of pedagogy (53%).

**On using video outside the classroom:**
- 87% of respondents agree that online learning will grow in importance and acceptance, an increase of 4% over last year.
- Video is used in a wide range of use cases, including: recording campus events for on-demand viewing (59%), marketing and communications (55%), and even as part of the admissions process (30%).
- 74% of institutions use webcasting for various purposes, an increase from 2015, including teaching (51%), broadcasting live events (47%), and training (39%).
- Compared to last year, a majority of use cases show display growth.

**On digital literacy:**

---

52 © Kaltura, Inc., 2016. All rights reserved. The State of Video in Education 2016: A Kaltura Report 3
• Students and teaching staff are rated as having ‘good’ or ‘very good’ digital literacy by most respondents.
• However, these rates have fallen since 2015, as 72% of teachers are perceived to have either “good” or “very good” digital literacy levels (81% in 2015), compared to 84% of students (88% in 2015).
• This may reflect “changing goalposts” as our criteria for what counts as “very good” rises faster than students or faculty can keep up.
• 96% of respondents feel it is important to continue to raise the level of digital literacy in their institution, a figure that remains constant year-on-year.

On the source of videos used in class:
• Unsurprisingly, video content from free online resources is the most widely used (77%).
• Frequent use of licensed content is down slightly from 2015 (from 46% to 41%).
• School generated content is increasingly important, with 37% of respondents reporting the frequent use of teacher-generated materials.
• This reflects the ease of content creation, and the positive impact of video literacy level rates.

On integrating video into the Learning Management System:
• For the first time this year, more than half (52%) of our higher education respondents are using a video solution integrated into their Learning Management System (LMS) - (e.g., Blackboard, Moodle, Canvas, Brightspace, etc.)
• When those who use the built-in video tools are included, 60% of all respondents say their institution is using video in the LMS environment.

On how to make video more effective for education:
• Educators are excited about new features that are becoming common for video such as captioning (rated as useful by 97%) and in-video quizzing (96% considered it useful).
• The most anticipated new development is graded quizzes inside videos, with 41% predicting the greatest impact for this technology.
• Video broadcast from mobile phones and videos that branch to other videos based on in-video actions are also predicted to be high impact.

On why video is so useful for education:
• 93% of respondents believe that video has a positive impact on student satisfaction and 88% agree that it boosts student achievement levels.
• 86% think video helps with professional development and collaboration between educators.
• 85% believe that the use of video as part of their resources toolkit increases teacher satisfaction.

European schools are taking an increasing interest in engaging students with mobile learning during and beyond the school day and in ‘bring your own device’ (BYOD) models, parents more than ever could be key partners in contributing to this new frontier in learning. This will be examined further in T8.3 Use Case: Social Consumption, the final set of 2nd Screen experiences to be employed in the user trials with Spanish pupils. The
validation scenario involves multi-device Content Syndication based on the 1\textsuperscript{st} Screen experience and 2\textsuperscript{nd} Screen devices such as tablets and smartphones, being presented according to the educational parameters set in either the content (e.g. related to brand integrity) or the context.

2.3.2 e-Learning and SAM

The Y2 report D2.2.2 provided a good overview and a projection for the future of the eLearning sector with relationship to the SAM platform and the latest trends are still remain the same, namely:

- Students will choose with whom they study not where, meaning the content delivery (form, personalisation, language, etc.) becomes of the utmost importance
- Courses will be available from everywhere and at any time (e.g., via mobile/tablet devices) in the right format tailored for the device, context, and users’ model (learning history, style, and achievements, demographics, etc.)
- Solutions should be delivered as a service (SaaS model) for all groups of users including students as well as large corporations and SMEs, which are switching to SaaS learning management systems from in-house solutions
- MOOCs (Massive Open Online Courses, an abbreviation that covers all of the currently available computer-aided learning facilities) will soon need a Sales Channel to penetrate the B2B market.

Since the previous report, gamification has finally made its way from the promising but still less accessible technology to the standard feature of most of the innovative eLearning providers. Below is an example (Figure 8) of a web-site of a company that tries to cover all the current trends in the eLearning market and might be considered as a potential partner for exploration of SAM platform in this sector.
Figure 8: A screenshot of http://learnnovators.com/, eLearning provider

We can see in Figure 9 that the eLearning market is growing globally and platforms such as Coursera and Udacity are actively exploring these market opportunities providing Cloud self-service points for providers and consumers of the educational content.
Although the predictions by “Ambient Insight” show that the classical eLearning will lose about 7% of the market in the coming 5 years SAM consortium believes that the SAM has a unique selling point for this market covering two major needs for any modern eLearning solution, namely integration and personalisation along with the ability to deliver a content to various platforms including mobile, which demonstrates a stable growths (up to 7% that makes over $37 billion by 2020).

Another key driver for many industries including eLearning is a BigData, i.e. decision support based on the large amount of diverse data that was not possible even a few years back. SAM platform provides all the facilities to store various types of data in the Cloud Store (one of the SAM infrastructural components) and use this data for exploration, analysis, and visualisation (please, see the details in the deliverables about storage and business intelligence components of SAM).

The optimism of SAM consortium connected to this market is backed up by the experience in participation in the events such as IBC2016 where a large portion of SAM booth visitors was connected to eLearning industry. The SAM platform was also tested at the K12 level in Spain and the overall impression was positive (please, check WP 8 deliverables for more details). There are also on-going negotiations with the University of Monterey (Mexico) regarding post-project exploitation of the SAM platform for eLearning courses.

2.3.3 Validation of the e-Learning Experience

As discussed in the previous version of this deliverable D2.2.2, a unique aspect of SAM is its suitability for the e-Learning sector. Specific 2nd screen experiences with educational
related content and safe, closed social interaction can be created in and for the learning environment.

The SAM prosumption scenario is a near-realistic consumption and interaction scenario in a school setting, involving pupils from Spanish schools who are involved in the project in order to provide an end user evaluation. Four end user trials in the last year of the project entailed targeted 2nd Screen experiences, which were tailored to this interactive learning environment in two Spanish schools, also taking into consideration the suitability of the content. Also see chapter 3 in D8.3.2 for a description of the trials and D8.4.2 for evaluation results.

The material for these evaluation trials was selected and prepared by SAM user partners. In a real educational setting SAM could be used by teachers or any type of educator to produce any required educational 2nd Screen experience using any selected video, with respective related content. Primary videos can be sourced from own educational content pools or be provided by specialised and/or factual content media companies. Social interaction and content rules, user analytics as well as user account management help teachers and educators to manage the learning experience and adjust it to their requirements.

In addition to the rich, participative nature of the SAM 2nd screen experience, a unique aspect of SAM in the context of education is the controlled, safe social interaction. The end user trials have demonstrated how SAM 2nd screen experiences function in a classroom environment and how they enable messaging/chats in social communities between learners and, of course, between learners and their teachers..

2.4 SAM: Europeana and Cultural Heritage

Digital technology has already transformed many of the consumers’ day-to-day cultural experiences as social media has made discovering new content and cultural outlets easier than ever before. This may be as simple as seeking out a film, book, game or a song recommended online or enjoying favourite music which is instantly accessible and shared on smart devices. It could be watching a blog or video of an event before setting out for an exhibition to armed with knowledge from online content and a pre-booked entry slot to avoid the queues. While it is clear that these changes are still in the early stages, in many respects, the world of culture has been at the forefront of what is today commonly known as ‘digital transformation’.

SAM is well placed to exploit these changes as Media Assets are among the main entities of the SAM Platform with the asset related functionality playing a key role in the realisation of the overall SAM features and vision. This functionality refers to various interdependent processes across the asset lifecycle, from importing media content into SAM and its semantic annotation, to the creation of asset compositions and their social aware syndication to end users. This required that SAM should be semantically and socially enabled, dynamic and, at the same time, with an efficient schema for the description and representation of media assets. To this end the SAM schema is extendable and compliant with the popular and widely adopted approaches available nowadays in order to simplify the asset importing process. This will thereby allow for the effective exploitation of assets through syndication of the contents in the SAM Marketplace and link to entities such as Europeana and Linked Heritage.

The SAM approach has been to build on top of well-established media representation standards, which may be extended to accommodate the specific functional and technical
requirements of the SAM environment. Analysis of state-of-the-art in this domain concluded that the main specification candidate for the foundation of the asset description in SAM was the Europeana Data Model (EDM) together with ontologies from Schema.org. According to Europeana, EDM is “a more developed data model that brings more meaningful links to Europe’s cultural heritage data”. Data from partners or external information resources with references to persons, places, subjects, etc., with the SAM platform will be able to connect to other initiatives and institutions. This can result in sharing enriched content, adding to it and thereby generating more content in ways that no single provider could achieve alone, which is one of SAM’s foundation principles.

Europeana is of great relevance to the library sector, utilising library standard metadata within the Europeana Data Model (EDM) to ensure a data-rich resource which is compatible with other standards and schema. The provenance of the data embedded in EDM is important to the aggregators, contributors and users of Europeana. EDM attempts “to transcend the respective perspectives of the various communities constituting Europeana, such as museums, archives, audio-visual collections and libraries... adopting an open, cross-domain Semantic Web-based framework that can accommodate particular community standards...”. The new cataloguing standard, Resource Description and Access (RDA), is one such standard that can be accommodated in Europeana’s data model which also supports schema including MARC21 and Dublin Core.

The use of RDA was described in details in D2.2.2: 2.5 2.5 SAM: Europeana and Cultural Heritage p43. Further Figure 17 p46 illustrated an example of potential exploitation for SAM described how, the digitised image of the Mona Lisa available on Europeana, could have a linked data cloud as an example of the types of entities and relationships which can be linked using WEMI:

While we accept that culture is not a ‘product’ like any other, behaviour and expectations show that the cultural and creative industries have to respond to a number of new demands as consumers seek greater service, support, and reassurance in a world characterised by abundance and diversity of content, formats, devices, distributors, players, and more. Consumers constantly seek recommendations to ensure they don’t miss out on a cultural experience. See Figure 10

---

It is in such an environment where there is a desire and requirement for personalised recommendations that SAM’s innovative approach is valuable, meaning that instead of users reaching out for the data, it is the data which reaches the consumer through the syndication approach and their smart device. This enables the creation of dynamic social communities related to the user the ‘cultural context’, digital asset context (e.g. profiles, preferences and devices connected) and location, enabling the culture sector to enhance the consumer experience. Cultural centres could become dynamic hangouts where people share interests, socialise and build virtual communities with SAM will enabling syndication of comments, ratings, facts, recommendations and new information that will enrich and energise the community as well as enhance personalised knowledge and satisfaction.

As shown in Figure 11 below.
Lastly, for a large number of consumers, the consumption of cultural goods and services only makes sense as a shared phenomenon, with the experience feeling much more powerful when passed on. This is the essence of today’s ‘social culture’.

- 81% of young Europeans share – or would like to share – their opinion online after seeing a live performance or going to the cinema.
- 86% of young Americans share – or would like to share – content online and express their opinion on social networks following a cultural experience.

SAM can help cultural institutions to find methods of providing a complete experience, experience process that both satisfies the consumer and makes optimal use of digital tools. This can be done during the three key phases of the consumer experience at a cultural venue, and ensure a fluid and coherent transition between the ‘pre-visit’ stage and the ‘post-visit’ stage.

- Before, to facilitate access on a practical level and prepare the public for the works and content they will see (information on the latest museum news, forthcoming performances, the broader context of exhibitions, etc.)
- During, to enrich the experience and make it easier to understand, as well as fun and engaging (commentaries, music, augmented reality, etc.)
- After, to prolong the experience with additional content that can be consulted and shared.

Using the example of the Mona Lisa in D2.2.2, the linked data cloud illustrated the types of entities and relationships which could be deployed through SAM to be commercially exploited by organisations holding cultural heritage linked-data.
The entities and relationships of the Mona Lisa could be presented on 2\textsuperscript{nd} Screen devices:

- As a virtual guide to the Musée du Louvre and its collections
- Providing a resource identifying where to stream, download or buy legal copies of the film or soundtrack
- Linking to booksellers where the novels and related academic or travel books could be bought
- Linking to relevant social media pages including the Twitter page of the Musée du Louvre
- Via a virtual reality guide app to Paris created from the data by an app development company

This not only adds value to bibliographic records and enriches the information for cultural heritage, but also has a potential for positive economic impacts for SMEs in the media sector through cost-effective, easily accessible and commercially valuable meaningful linked data for end-users.
3 Stakeholder Viewpoints

The objective of the following sections is to take advantage of the stakeholders’ experience, expertise and industry knowledge and to elicit ideas, thoughts and goals and to identify the key benefits that the features of SAM will provide.

Each stakeholder point of view follows a similar structure as they broadly define their area of interest, describe how they believe SAM will be of commercial benefit to them and their sector, identify the competitors that SAM will face and pinpoint the opportunities, trends and scenarios which might be expected when SAM results are commercialised in 2017.

This was consolidated in D2.2.2 in a comprehensive SWOT Analysis of the internal and external environment and this formed an important part of the strategic planning process applicable to SAM.

The individual stakeholders’ carried out a SWOT analysis assess any major changes which may affect SAM’s development and exploitation by identifying the potential opportunities and challenges and help in matching SAM’s resources and capabilities to the competitive ecosystems in which it will operate from 2017.

The results of changes to the SWOT are highlighted in section 3.6 An Updated SAM SWOT Analysis.

3.1 Broadcaster: Second Screen/Multiscreen Developments

This chapter summarises the current status of Second Screen and Multiscreen developments from the broadcaster perspective for 2015/2016. It is based on updated research, following the provision of information one year ago for D2.2.2. The chapter also highlights changes related to the assumptions made for the period after project completion and the SWOT table that defines SAM’s Strengths, Weaknesses, Opportunities and Threats. As in the previous deliverables, the market information in this chapter is used to inform SAM’s overall technology exploitation planning as well as DW’s internal, content related exploitation strategy.

In summary, the detailed developments described in D2.2.2 covering 2014/2015 have largely continued in the same direction. This year, pressure on the broadcast and media industry related to digital disruption and transformation has intensified, also impacting on Second Screen services (see chapter 3.1.1). Despite the on-going popularity of general Second Screen activities by viewers while they watch TV, in 2015/2016 broadcasters and media companies remain reluctant to launch or continue their own Second Screen offering (see chapter 3.1.2). While dedicated Second Screen and/or Social TV technology platforms have largely gone out of business, a new breed of Multiscreen TV service provider has experienced significant growth over the last year. These are Over-The-Top-TV (OTT) and Multiscreen service providers who offer end-to-end solutions for any content owner, media company or broadcaster. They are now potential candidates for supplying Second Screen and Social TV solutions for their broadcast/content customers. A new type of solution provider has emerged in 2016 using interactive TV graphics for related content provision on both the first and second screen (see chapter 3.1.3).

3.1.1 Overall status of the broadcast/media industry
In 2015 and 2016 traditional broadcast and media content providers are focused on addressing three main challenges, which are – alongside other developments – crucial for their future positioning, if not survival in the digital media age.

- Over-The-Top-TV (OTT) content delivery systems and video consumer services across digital devices, ensuring a seamless and attractive user experience as well as content security and monetisation (also referred to as TV Everywhere, OTT and Multiscreen markets)

- Continued digital-only content, service and delivery innovation across all platforms, media and genre. This is required to adapt to changes in digital storytelling, new digital consumption habits, end user demands and distribution platform requirements (e.g. Facebook, Twitter, Instagram, YouTube and Messaging Apps).

- Launching Virtual Reality and 360-Degree-Video products, serving a new medium: storytelling, video production and multi-channel delivery, including user experience related to VR headsets.

Traditional broadcasters are currently under pressure, due to the ever increasing speed and intensity of global digital media developments, changing business models and new competitive market entrants. They are prioritising development and innovation activities towards “must have” and digital transformation projects. Budgets are going to new initiatives that ensure relevance and survival in the digital age, which can be as simple as extending digital video products and delivery. In many cases there is a lack of funds and strategic requirement for other “nice to have” developments or experiments. This is likely to be one possible reason for their reluctance to provide Second Screen services (see below).

3.1.2 Status of broadcaster related Second Screen services

In principal there are three types of Second Screen services in the market today (see below).

They are additional to general, user-driven Second Screen activities conducted while they watch TV (e.g. using Facebook, Twitter, Instagram, Messaging Apps, Mobile Apps and Websites). In the latter case there is no direct relationship with a broadcaster or Second Screen solution provider. Apart from on-screen prompting and calls to actions for social-oriented programming formats. During 2015/2016, this parallel activity has remained at the same level (approximately 40-90%), if not increased. Only a small proportion of this activity is related to the TV programme currently watched.

Due to the above there is a continued strategic need for broadcasters and media companies to address this problem by offering “own” Second Screen services in relation to programming, where they control, direct and monetise the viewers’ activities on mobile devices. Nevertheless, in 2015/2016, broadcasters and media companies are still reluctant to launch or continue existing Second Screen offerings.

Type 1) Participation TV involving large linear TV audiences (e.g. selected entertainment/quiz shows, sports events and TV debates.). Such programmes often have their own companion mobile app into which participatory Second Screen features such as
quiz, voting or play-along can be integrated. Alternatively, specialised participatory TV platforms (e.g. PlayNow) provide the mobile interface.

Type 2) Device interaction refers to the sending of content from the consumer's mobile device to the large, first screen TV device. This is a function offered by some OTT-Multiscreen solution providers and can also be achieved with stand-alone consumer devices (e.g. Google Chrome). Users can easily "flick" their own content onto the main TV if desired (video content they bought, home videos, photos, etc.).

Type 3) Related content and social interaction offered by broadcasters and media companies via branded, own Second Screen services on mobile devices. These are associated and/or synchronised with primary TV/Video watched on the First TV screen.

Since 2014, the 3rd type of Second Screen service has not been actively pursued by broadcasters and media companies. The provision of related content and/or social interaction on a Second Screen via specialised systems and consumer apps is likely to be regarded as a "nice to have" activity with low priority (see chapter 3.1.1). In 2015 and 2016 there is a continued lack of such Second Screen services from broadcasters and media companies. Previously launched services have been discontinued. This indicates that the overall business model is not viable, i.e. one or more of the problems below apply:

- Complexity of service provision due to very high fragmentation of First and 2\textsuperscript{nd} Screen devices and operating systems
- Lack of suitable solution providers
- High cost versus low commercial or public value gain
- The disruption of First Screen content impacts on advertising revenue models
- There is limited consumer demand for using a broadcaster-provided service/app for accessing related content and/or social TV services
- Consumers regard related content as disruptive while viewing TV
- The content/service innovation budgets are now spent in other areas with higher priority

3.1.3 Second Screen and Multiscreen platforms and solution providers

As a result of the lack of demand from broadcasters and media companies, the Second Screen and social TV solution providers that emerged between 2011 and 2013 have now largely gone out of business, including those with large venture capital or other financial backing (e.g. Zeebox/Beamly). Remaining are a few platforms that enable participation TV formats related to linear TV entertainment, quiz or sport shows (e.g. PlayNow in the Netherlands).

As an exception to the rule, a new second screen platform has emerged in 2016, which is taking a different technical approach. The Norwegian company Sixty has launched the EasyLive service. It links related content to overlay TV graphics, using a back-end production platform provided by an existing broadcast technology provider (Ross Video). While the user watches the First Screen, on a second mobile screen he/she can “tap” on the TV graphics in order to request additional information, related videos or camera angles. Unlike previous Second Screen offerings the primary video content remains largely undisturbed, which was a key consideration for this service.
While dedicated Second Screen and/or social TV platforms have gone out of business, a new breed of Multiscreen TV service provider has experienced significant growth over the last year: OTT-Multiscreen service providers who provide end-to-end solutions for content owners, media companies and broadcasters. Their service solution guarantees the secure delivery (and monetisation) of video content and streaming TV on every required connected device.

The growth in this segment is due to the fact that more and more time is now spent on non-traditional television devices and a large proportion of Over-The-Top-TV (OTT) viewers expect to access content on four or more devices. Following Netflix and other early OTT services, the number of global video service providers has grown rapidly (e.g. NBC Universal, Spotify, Fox, Disney, Telefonica and HBO). Media companies and broadcasters are now eager to launch their own OTT services. This has led to global opportunities for OTT-Multiscreen service providers. They serve existing video service providers and new entrant content owners or broadcasters.

As they have increasing control over multiscreen device management, mobile app design, primary content delivery and related metadata they are candidates for future Second Screen or social TV solutions, in cooperation with their broadcast and content customers. Due to the lack of demand for such services at present from broadcasters and media companies (see above) they do not usually offer this feature. However, some of them point out that they can offer this function in case there is demand from their customers and that they are open to review new types of functions/services.

On the media provider’s side they enable complex end-to-end workflows, based on an in-depth understanding of the fragmented device world. On the consumer’s side they focus on an improved, seamless user experience on all devices (content browsing, discovery and recommendation). For this reason, they also provide user experience expertise and TV app design/creation. Their platforms are flexible, often cloud-based, in order to adapt to rapid market changes, enabling the integration of emerging technologies and devices across the end-to-end workflow. These solutions also entail business functions such as user analytics, rights control and monetisation via advertising or subscription. Metadata plays a key role across the end-to-end workflow, but also for value added business functions. Some providers offer more novel functions, e.g. a Bluetooth enabled remote with a customisable notification system.

### 3.1.4 SAM Use and Post SAM

The initial chapter for this deliverable series in D2.2.1 detailed the ways in which television broadcasters could use the entire SAM platform or technology components: “Developing own branded Second Screen offerings with a view to improve the viewer’s experience of TV content, facilitating new revenues, controlling multiscreen viewing behaviour, competing with social TV apps, obtaining social feedback and promoting TV programmes.” The principal strategic background described in D2.2.1 for broadcasters being interested in SAM solutions still applies, based on the continued need to address active multiscreen viewing behaviour. The competition from Social TV apps is now largely limited to Facebook and Twitter, but since this year also social platforms such as Instagram and Messaging Apps.
In practical market terms, what has changed and still applies in 2015/2016 is the lack of interest TV companies and broadcasters have shown in the development of their own Second Screen services related to specific TV programmes or video content. Potential reasons have been listed in chapter 3.1.2 and also the previous deliverable D2.2.2.

Also in this year it remains highly uncertain if and when:

- TV channels and broadcasters will regain confidence in providing dedicated Second Screen offerings beyond Participation TV for selected programmes
- A working business model can be found that supports low-cost dedicated services/apps from TV Channels and Broadcasters as a continued, sustainable service.

The statement from the previous year still applies: “Future developments will largely depend on Second Screen solutions that reduce the production/delivery cost, are easy to access by TV viewers and are attractive enough to be considered while users are pursuing their general, diverse multiscreen activities while watching TV.” It remains to be seen whether the new breed of OTT-Multiscreen service providers (see chapter 3.1.3) can fill this gap alongside potential new market entrants into this sector (e.g. Easy Live from Sixty).

### 3.2 Content Providers

The following subsections describe any changes to the market from the Content Provider’s point of view since D2.2.2 in November 2015. The stakeholder of the Content Provider is introduced and its use of SAM is described. Also, the competitors of SAM Content Providers are shown, as well as an evaluation of SAM against possible competitors from the point of view of the Content Providers. In summary, the change of the Content Providers market after SAM will be outlined in the coming sections.

#### 3.2.1 Summary

Accurate and up-to-date information linked to Home Entertainment (HE) products and digital content is essential for the value chain and for search and discovery tools. Content Providers such as broadcasters, film studios, music labels and publishers rely on correct metadata to ensure their customers find what they are looking for, whilst information suppliers and retailers, such as IMDb, Amazon, HMV, Netflix etc. rely on accurate metadata and unique identifiers to allow links to the correct products and pages. Entertainment information and content for entertainment products used by major online retailers, wholesalers, retail outlets, specialist sites, library systems, trade organisations and leading trade publications, is aggregated by companies such as BDS from many different data feeds and tens of thousands of prime-source content providers such as publishers, film studios, games developers and music companies. Extended content is now being added to this information including images, sound and video clips, screenshots, descriptions, contents pages and artist biographies but this is reliant on quality metadata. Working with a trusted metadata supplier and industry trade and standards organisations it is therefore essential to ensure that a consistent approach to the unique identification of assets and creation of deeply linked rich content is based on authority control, cooperative cataloguing, data normalisation and ‘name disambiguation’.
3.2.2 SAM Use

Within the M&E ecosystem new technologies have exposed the difficulties caused by the current poor state of content metadata collection, curation and standardisation. Through SAM, SME content providers will be able to link to their metadata on demand rather than unwieldy and expensive data feeds. This will, in turn, increase sales opportunities, to clients who want to increase internal efficiency and reduce costs, produce revenue enhancements through rich consumer experiences, and create intelligent and engaging connected experiences for consumers.

West10 continues to work to enrich and enhance its metadata to engage the consumer by linking products from different categories and adding rich content for film/DVD/TV, music, games and books such as artist biographies, trivia and quizzes. Through SAM this will be extended to be semantically linked across the M&E ecosystem, so for example BDS assets for a topic such as ‘Jurassic World’ can be characterised and semantically linked to create a data cluster. See Figure 12

Figure 12: Example of a BDS Data Cluster for Jurassic World

This can then be extended to sources external to BDS: Figure 13
Figure 13: Example of Relevant External Content for Jurassic World

The potential of the SAM platform for providing the user or consumer with access to rich entertainment content syndicated in a social context will create an opportunity to offer a real differentiation strategy with innovative, useful and exciting tools that will make engagements with TV, film, music and games, making discovering experiences more interesting, convenient and personalised. Facebook, for example, uses entertainment metadata to improve the search and discovery process across its network. SAM understands the power of metadata for connecting to conversations and targeting specific interests, and semantic search tools will allow users to search for interests such as “TV shows my friends are watching”, and gather results based on answers collected from their social connections’ shares on the network. Connecting consumers to content means more engagement and commitment and through SAM West10 content metadata can take consumers across that entertainment ecosystem allowing purchase points along the way increasing the opportunities for real revenue generation.

3.2.3 Competition

The market for the provision of Home Entertainment metadata continues to be dominated globally by two large American corporations: Rovi Inc. (now Tivo) and Tribune Media. Tribune Media Company acquired Gracenote in 2014 and integrated it with Tribune Media Services (TMS) under the Gracenote brand. Both companies share a dominant position.

http://pr.tivo.com/news
However, anecdotal evidence reports that their metadata licensing fees are a barrier for SMEs and both companies have technologies, which compete with many start-up companies. Whilst there are also a number of smaller content providers who tend to work in niche areas such as cinema and TV listings, events listings, the gaming market, and celebrity news. In addition, wholesalers of physical products provide skeleton ‘trade data’ for the supply chain, but not the rich data that will engage the consumer.

- **Rovi/Tivo**: Rovi acquired DVR-maker TiVo in September 2016, in a $1.1 billion deal and adopted the TiVo brand as the name for the new company. It has been reported that the acquisition is mostly about patents as Rovi’s acquisition of TiVo, with its innovative products and substantial intellectual property portfolio, strengthens Rovi’s position as a global leader in media discovery, metadata, analytics, and IP licensing enabling it to extend services across platforms and to a customer base that includes traditional, over-the-top and emerging players across the globe. products, instead, they rely on their intellectual property. For example, TiVo's Time Warp patent, which allows users to fast-forward through adverts on recorded TV. Between them, the two companies have more than 6,000 issued and pending patents in the digital entertainment world. However, as the Rovi services are based on proprietary data and technology, many innovative companies needing metadata and technologies to supplement their own feel that there is a conflict of interest when working with Rovi given that it has been involved in a number of legal disputes about technology patents.

- **Gracenote**: US-based Gracenote is a division of Tribune Media Company which owns and operates a sizable portfolio of television and digital properties which bring entertainment, news and sports content to local and national audiences. The company operates five business verticals: Music, Video, Sports, Automotive and Video Personalisation and has grown through acquisition. Gracenote provides TV listings and schedules for approximately 85 countries and 35 languages as well as TV and Movie data and related-imagery information for six million TV shows and movies however the metadata is supported by standardised TMS IDs for TV shows, movies and celebrities which restricts search to linear TV, OTT and VOD libraries which subscribe to Gracenote. Gracenote Sports provides live scores, play-by-play data, historical results and records, schedules, player profiles and athlete biographies for 4,500 leagues and competitions such as the NFL, MLB, NBA, NHL, Premier League, F1, Bundesliga, Tour de France, Wimbledon and the Olympics. As it is a provider of both metadata and technologies, many companies with innovative competing technologies feel unable to work with Gracenote metadata.

- **Press Association (PA)**: PA is a UK and Ireland content provider. It continues to provide celebrity news, interviews, entertainment reviews, red carpet premiers and weekly lists of DVD releases/charts, cinema listings and TV listings but lacks presence in the commercial entertainment supply chain as the data lacks product focus, industry identifiers and can’t easily be used for commercial retail exploitation.

- **Webedia**: France based Webedia was founded in 2008 and joined the French investment company Fimalac, in May 2013. It operated 20 websites (including Allociné, PurePeople, Puretrend, jeuuxvideo.com, 750g.com and EasyVoyage) and generating more than 22 million unique visitors per month in France and 80 million internationally, Webedia is the largest digital media group in France. It acquired US-based West World Media (see D2.2.2 p56) which operates in more than 50 countries and syndicates film showtimes, listings and film-related data as well as event listings for music, sports, live theatre, art and special events. It also provides entertainment venue and marketing services. The company does not provide commercial supply chain identifiers and has no retail presence. It doesn’t supply any other entertainment information.
• **Linked Open Data (LOD) Services**: Free and publicly available, LOD services such as Freebase (owned by Metaweb), Wikidata, FactForge etc. are promoted as providing an easy point of entry for would-be consumers of linked data and providing a wealth of information. However such sources are not suitable for commercial use as they are not necessarily up-to-date or correct, as they are community fostered.

### 3.2.4 Post SAM

Handheld and mobile devices now play a key role in delivering a broad range of entertainment content more and more viewers are reaching for their phones and tablets to enjoy both TV content and movies. At the same time, the level of engagement is also evolving with a growing number of consumers looking to use their tablets and phones to search, comment, recommend and share as part of the entertainment experience. With the proliferation of new technologies, connected devices and a more discerning consumer seeking richer experiences, the importance of standardised, normalised, name-authority controlled metadata is now recognised as essential for the delivery of the best experiences. The M&E industry's need for quality, linked data will enable the SAM project to benefit from entering the market as a trusted third party at a time when it can serve successful, established and sustainable companies, as well as the innovative companies who need rich M&E data. When the SAM results are commercialised in 2017 the following features will be key for commercialisation both across Europe and globally:

- The provision of translations of the data into multiple languages through automated translation components would create a new revenue stream and facilitate the sales of content metadata throughout Europe.
- Whilst the initial metadata is based on UK product information, proposed future enhancement are to create a pan-European database of cultural products by linking to European content providers and contact has been established with The European Metadata Group57.
- SAM currently derives its Social Media input solely as shared information sent through the SAM Platform and so an opportunity for improvement would be to be able to access filtered comments from the major Social Media networks.
- Automatic summarisation which is able to analyse social communities and identify and then aggregate trends will improve the potential for revenue creation through reviews, ratings and recommendations in SAM user communities.
- An exploitable future developments for SAM, would be to create a digital assets repository based on a core metadata standard for the digital value chain with EIDR and other trade identifiers as the key links. This would create an efficient value chain for digital assets which can also be exploited as a revenue stream.

### 3.3 SmartTV and Device Providers

The following subsections describe any changes to the market from the SAM SmartTV and Device Provider’s point of view since D2.2.2. Also, the competitors of SAM SmartTV and Device Providers’ are shown, as well as an evaluation of SAM against possible competitors from the point of view of the SmartTV and Device Providers. In summary, the change of the SmartTV and Device Providers market after SAM will be outlined in the coming sections.

3.3.1 Summary
The SAM ecosystem (see Section 2.2) caters to different types of user devices, including televisions, tablets, smartphones intercommunicating to offer seamless operation and user experience.

The deployment barriers are kept low by relying on standard technologies that have wide market presence and acceptance. Usage models like screen casting are becoming more prevalent, creating the right context for users to have right expectations towards interoperations of Smart TVs and 2nd screens.

The setup also capitalises on steady evolutions in the multi-screen ecosystems, including the growing usage of casting functions and the trend of large content providers to make use of these multi-screen capabilities, as illustrated by Netflix’s introduction of supplemental content on handheld device, such as behind-the-scenes information about the actors or other trivia.

It is important for device (and for TPVI in particular for television) manufacturers to make sure they act as enablers for these usage trends. Their devices must be at the leading edge of interoperability capabilities, via performant platforms but also via adequate support (and even drive) for APIs, protocols and standards.

At the same time, Smart TV ecosystems, be it linked to particular manufacturers who serve the gamut of devices, or to more open setups building on partnerships or beneficial synergies between suppliers, are emerging as virtual envelopes that strive to ensure satisfying user experiences when combining said features and services.

Below is an updated list of the current, important smartphone and tablet manufacturers (however this is ever-changing as more and more brands enter the tablet and smartphone market):

- Samsung Electronics, HQ South-Korea
- HTC, HQ Taiwan
- Apple, HQ US
- LG Group, HQ South-Korea
- Sony Corporation, HQ Japan
- Huawei, HQ China
- Acer, HQ Taiwan
- Xiaomi, HQ China

3.3.2 SAM Use
The current instantiation of the SAM functionality in a TV is via mechanisms that try to reduce deployment barriers. In a TV, SAM is enabled via a combination of Android app and standardised communication and data distribution protocols like HTML5. So though device capabilities are inherently not much of a barrier (given Android and a modern browser), market advantage can be gained by providing (branded) functions and apps e.g. via preferred SmartTV channels.

3.3.3 Competition
Competition is evolving in different domains: device manufacturers (TVs and other display based devices suitable for viewing of video content), Smart TV like services enabling
device manufacturers to offer a platform and infrastructure that capitalise on TV
capabilities, and content providers that offer apps that link their content to the consumer
user experience via connected devices and server based interactions.

Smart TV manufacturers have enabled their televisions to handle state-of-the-art
standards in Internet connectivity and web based applications. Going a step further, some
manufacturers – including TPVI – have integrated TV capabilities in an Android platform,
thus leveraging the strengths and capabilities of this ubiquitous platform. While this lowers
the level of complexity and of acceptance of associated technologies, it also opens up the
competitive market to alternatives providers.

As such, differentiation then becomes a matter of speed to market and of quality of
provided service. SAM can be a vehicle for this differentiation.

For TPVI, its ongoing transformation from supplier of Philips branded TVs to its further
integration in the TPV Technology company means that both the Smart TV device
capabilities and the Smart TV backend and service ecosystem as evolved in the Philips
realm are bound to be positioned much more widely in the context of the full TPV customer
portfolio, enhancing their appeal and market presence.

3.3.4 Post SAM

Realisations of project SAM are showcasing possible achievements making use of TV
infrastructure and capabilities when interconnecting these with (web based, Android or
other) interactive apps. The experience gained by TPVI in making its devices operate in
these environments is a valuable asset when outlining its roadmap of Smart TV services,
capabilities and offerings. These factors are being taken into account.

In this respect, SAM shall be seen as an enabler and catalyst for new and emerging
models of both interoperability of devices and distribution and valorisation of content and
(meta)data.

3.4 App Developers

The following subsections describe any changes to the market from the app developer’s
point of view since D2.2.2 in November 2015. Also, the competitors of SAM for app
developers are shown, as well as an evaluation of SAM against possible competitors from
the point of view of the app developers. In summary, the change of the app developers
market after SAM will be outlined in the coming sections.

3.4.1 Summary

App developers are third party companies who specialise in the field of mobile software
creation and/or development and either market the app themselves or, more likely, act as
a consultancy for a party interested in having some kind of software or app designed for
them. Examples would be specialised media-related apps, such as an app created for a
new blockbuster movie (a new ‘James Bond’ or ‘Transformers’ movie etc.) or public TV
shows with a big audience (‘The Eurovision Song Contest’, ‘Germany’s Next Superstar’
e tc.) that need to have a unique look and feel or additional features to keep the user
engaged.
3.4.2 SAM Use

There are no major changes to report regarding the use of SAM regarding app developers since the second version of this deliverable, D2.2.2.

3.4.3 Competition

Since the second deliverable D2.2.2 no direct competitors are available which retrieves its data from a similar platform like SAM, but there are many mobile and other applications available which provide related content to video and TV platforms. For example Amazon’s X-Ray provides additional information like actors bios, background information and information from IMDb when pausing the video. Second screen applications for many TV shows are available, which provide additional information and some also interaction with other viewers or the TV show itself. What these applications all have in common is they have been created for each TV show uniquely and are not reusable in the way like the SAM platform and its components.

3.4.4 Post SAM

There are no major changes to report regarding the time after the SAM project regarding app developers since the second version of this deliverable, D2.2.2, although additional to the last version of this deliverable, the focus on providing information for on-demand videos in an educational context has strengthened.

3.5 Service Provider

The following subsections describe any changes to the market from the SaaS Providers’ point of view since D2.2.2 in December 2015.

Service providers are defined in SAM the DoW as: “An entity that provides organisations or individuals with commercial services, usually in the context of a third party or outsourced supplier usually in telecommunications, application service suppliers, storage service suppliers (Cloud) or Internet service supplier, or in the case of the SAM Platform for users, both end users and business users.”

Software as a Service (SaaS) is a licensing and delivery model in which software is licensed on a subscription basis from a centrally hosted platform and it has become a common delivery model for many business applications. The benefits of such approach are commonly known in the industry and described in the previous deliverables of this series.

Service Providers will register through the SAM Marketplace to sell their services. SAM can expose as individual services parts of its infrastructure, for instance for contextualisation, semantic analysis, content distribution, etc., which although not the main goal, may be exploited through the individual partners exploitation and so this area will focus on third party service provided through SAM.

Software companies that provide services such as payment means providers - shopping cart providers, recommendation providers, etc. - can be linked to SAM content or facilities, and their services can be registered at the SAM Marketplace component level and linked to specific Assets in the SAM Linker component. For these companies, SAM can provide access to a wider range of uses (apart from the original ones) with the advantage that the services can be provided in the correct end user context, facilitating its usage and conversion rates (e.g. in the case of a ‘Buy’ button service).
During the project timeframe, SAM consortium implemented some of the services as proof-of-concepts, i.e. not at the industry level of quality. Thus, in a post-SAM commercial environment, the a number of services, especially the ones, implemented by academic partners need to be refactored and commercially maintained by the appropriate institutions, which will inherit the rights and obligations associated with the particular components. For more information on this topic, please, refer to the deliverables of D9.1.* series, particularly D9.1.3.
**An Updated SAM SWOT Analysis**

This SWOT Analysis has been updated with significant changes since October 2015 and provides the view at month 37 of the SAM project. Figure 14

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Suitability for on-demand video content enhancement</td>
<td>• 2nd Screen platforms have not launched in 2015/16 and are unlikely to launch indicating lack of interest</td>
</tr>
<tr>
<td>• Uses EDM and schema.org to create standardised data allowing interoperability with cultural organisations</td>
<td>• The decline in SocialTV apps may remove a potential area of exploitation</td>
</tr>
<tr>
<td>• SAM has features such as personalisation of syndicated content, creation of dynamic users’ communities linked to the creation of experiences for the second screen</td>
<td>• Opportunities for the exploitation of the platform as a whole have decreased</td>
</tr>
<tr>
<td>• Suitability for educational environments and related video content distribution options</td>
<td>• Topical and factual interest communities in addition to programme communities</td>
</tr>
<tr>
<td>• Data characterisation offers language translation capabilities</td>
<td>• Strong related content capability, including deeper and more diverse related content</td>
</tr>
<tr>
<td>• Universal, open widget-based consumer interface</td>
<td>• Dynamic push delivery</td>
</tr>
<tr>
<td>• Dynamic community building capability and respective consumer recommendation</td>
<td>• The core metadata is standardised, normalised and curated</td>
</tr>
<tr>
<td>• Topical and factual interest communities in addition to programme communities</td>
<td>• Metadata based editorial creation of offerings for a 2nd Screen</td>
</tr>
<tr>
<td>• Strong related content capability, including deeper and more diverse related content</td>
<td>• Metadata based e-commerce monetisation</td>
</tr>
<tr>
<td>• Dynamic push delivery</td>
<td>• Open approach for metadata distribution and monetisation</td>
</tr>
<tr>
<td>• The core metadata is standardised, normalised and curated</td>
<td>• A platform that fits in different media sectors (TV, radio) and that fosters user retention by the broadcasters</td>
</tr>
<tr>
<td>• Metadata based editorial creation of offerings for a 2nd Screen</td>
<td>• Enhanced experience for the users</td>
</tr>
<tr>
<td>• Metadata based e-commerce monetisation</td>
<td>• A base for a development platform for offerings to a 2nd Screen</td>
</tr>
<tr>
<td>• Open approach for metadata distribution and monetisation</td>
<td>• Follows technical approaches of</td>
</tr>
<tr>
<td>• A platform that fits in different media sectors (TV, radio) and that fosters user retention by the broadcasters</td>
<td></td>
</tr>
</tbody>
</table>
forthcoming standards (e.g. HbbTV)
• Improves the definition of context by considering the feelings of the users
• Federated approach can help in the platform commercialisation
• User-friendly view of data
• Offers standardised, normalised, name-authority controlled metadata
• Interfaces easily with other metadata sources
• Offers quality visualisation
• Supports configurable view
• Offers a functionality which is currently not available in any SmartTV, as such it provides added value to the consumer
• New dimension of social experience by dynamic creation of social communities
• Creates an innovative way of interacting with TV
• Multiscreen interaction delivered by SAM becomes a necessity in the world of SmartTVs
• Syndication of data based on the user’s activities.
• Easy to integrate
• Usable on different platforms
• Information sources in one place
• A plug-and-play solution, easy to test out and measure the risks against, and most likely not more expensive than other services providing content and services
• A single platform to get all the content from so no need to handle multiple sellers.
• Provides open solutions where other services needs to be deployed natively in the 2nd Screen App
• Social media is a hot topic for business, brands, organisations and companies like it a lot
• Sources of information (social media) are mostly free
• Automatic analysis that requires little human effort
• Cutting edge technologies that are not present in most direct competitors of
SAM
- Key tool for Business Intelligence, provides clear competitive advantage
- Immediacy, since data streams are automatically processed and do not depend on human supervision
- Suitability for on-demand video content enhancement
- Uses EDM and schema.org to create standardised data allowing interoperability with cultural organisations

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The requirement in the market for data to link to multiple sources of extended content remains strong</td>
<td>• The 2nd Screen hype has failed to live up to the expectations</td>
</tr>
<tr>
<td>• Growth in the content syndication business for ‘through-channel marketing automation’ (TCMA)</td>
<td>• Television broadcasters may oppose SAM in case they regard the platform as a threat to retaining control of 2nd Screen experiences related to their programming</td>
</tr>
<tr>
<td>• The growing requirements for interactive educational experiences</td>
<td>• OTT-Multiscreen providers may launch their own 2nd Screen service solutions for interested customers</td>
</tr>
<tr>
<td>• Increased interest in creation of a repository of data about academic books, journals and papers</td>
<td>• Lack of vibrant market for SAM platform due to limited demand from broadcasters and media companies to establish 2nd Screen services</td>
</tr>
<tr>
<td>• Ability to interface with Linked Heritage Data and Europeana which is a growing area commercialisation</td>
<td>• Providing content solutions to new applications and services market with high commercial potential</td>
</tr>
<tr>
<td>• The use of EDM will enable the sale of SAM data into the Travel &amp; Culture applications and services market with high commercial potential</td>
<td>• Offering solutions for diverse types of extended content offerings for television broadcasters, beyond live interaction TV</td>
</tr>
<tr>
<td>• Responding to the need for opt-in, personalised and dynamic push offerings to a 2nd Screen</td>
<td>• Addressing the factual content market (deep/topical content and communities)</td>
</tr>
<tr>
<td>• Filling the gap for content metadata solutions for offerings for a 2nd Screen</td>
<td>• Addressing the emerging on-demand television/video market</td>
</tr>
<tr>
<td>• Addressing the 2nd Screen hype has failed to live up to the expectations</td>
<td>• Providing content solutions to new applications and services market with high commercial potential</td>
</tr>
<tr>
<td>• The growing requirements for interactive educational experiences</td>
<td>• Offering solutions for diverse types of extended content offerings for television broadcasters, beyond live interaction TV</td>
</tr>
<tr>
<td>• Increased interest in creation of a repository of data about academic books, journals and papers</td>
<td>• Addressing the factual content market (deep/topical content and communities)</td>
</tr>
<tr>
<td>• Ability to interface with Linked Heritage Data and Europeana which is a growing area commercialisation</td>
<td>• Addressing the emerging on-demand television/video market</td>
</tr>
<tr>
<td>• The use of EDM will enable the sale of SAM data into the Travel &amp; Culture applications and services market with high commercial potential</td>
<td>• Providing content solutions to new applications and services market with high commercial potential</td>
</tr>
<tr>
<td>Types of platforms offering clickable ‘On-Air Graphics’ e.g. Ease Live[^58]</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>• Providing solutions to OTT-Multiscreen providers who aim to provide Business-To-Business 2nd Screen Services to their content customers</td>
<td></td>
</tr>
<tr>
<td>• Growth of topical and factual interest communities in addition to programme communities</td>
<td></td>
</tr>
<tr>
<td>• Offering solutions for diverse types of offerings from television broadcasters 2nd Screen</td>
<td></td>
</tr>
<tr>
<td>• Responding to the need for opt-in, personalised and dynamic 2nd Screen push offerings</td>
<td></td>
</tr>
<tr>
<td>• Filling the gap for content metadata solutions for 2nd Screen offerings</td>
<td></td>
</tr>
<tr>
<td>• Providing data cleansing and enhancement services to range of retailers, entertainment companies and content providers</td>
<td></td>
</tr>
<tr>
<td>• Addressing the emerging factual 2nd Screen market (deep/topical content and communities)</td>
<td></td>
</tr>
<tr>
<td>• Addressing the emerging on-demand television/video market</td>
<td></td>
</tr>
<tr>
<td>• Powering the emerging, comprehensive first-party companion services from television broadcasters</td>
<td></td>
</tr>
<tr>
<td>• Collaboration with commercial companies or Research projects to enhance the reach of the platform</td>
<td></td>
</tr>
<tr>
<td>• Three big markets, Content Syndication, 2nd Screen/Multi-screen and Social Media all converge in the approaches of SAM</td>
<td></td>
</tr>
<tr>
<td>• There are platforms in the market that provide partial solutions, but don’t covers all the spectrum and possibilities of SAM</td>
<td></td>
</tr>
<tr>
<td>• Multi-channel approach through SAM which can be used not only for building experiences for a 2nd Screen, but can provide metadata for different uses.</td>
<td></td>
</tr>
<tr>
<td>• Providing new possibilities for</td>
<td></td>
</tr>
</tbody>
</table>

[^58]: http://www.sixty.no/ease-live
customer oriented advertisements

- New marketing flexibility and opportunities.
- Attracting a broader audience of App developers
- Synergies with new companies can lead to new opportunities and new use cases, e.g. to incorporate ACR or other synchronisation technologies.
- Could be the one-stop solution for all kinds of content-related software, as it can be like an AppStore for content.
- The services surrounding the content can make it extremely easy to embed the content into all kinds of apps that other stakeholders might want to have created.
- A good set of services and services providers will increase the interest of further Content Providers towards SAM, as it will facilitate the production of more interesting and engaging user experiences around the published media
- Potential barriers for 2nd Screen partners caused by proprietary technologies are absent in SAM
- SAM is able to link to multiple sources of data and can offer cohesive branded experience across platforms as the interface will be optimised to leverage the strengths and mitigate the weaknesses of each type of device. The fractious nature of the market has meant that maintaining brand consistency across all platforms in style and functionality is a complex task.
- Providing an open-source, multi-device platform rather than a closed proprietary platform
- Technologies can be applied to many tasks beyond SAM
- Can be accessed as a standalone service and be applied to any task requiring subjective information
- Supports brand management, identifying possible concerns about a company or content
- Supports targeting niche market and audiences based on the opinion of users on your brand or contents

Figure 14 Updated SAM SWOT Analysis

The SWOT analysis continues to provide evidence that the partners consider that the Strength and Opportunities outweigh the Weaknesses and Threats (Challenges) and the SWOT identifies that there is great potential for success for SAM, as it remains central in the convergence of three large markets:

- Multi-device Representation and 2nd Screen: Delivery of multi-media related content into multiple devices allowing maximum use and commercial exploitation
- Content Syndication: Creation and distribution of rich, engaging, context related content for enrichment and maximum use
- Social Media: Contextually related groups, dynamically created to maximise user adhesion providing ratings, reviews and recommendations to the user

The partners continue to believe that SAM will provide a solution for European SMEs that will make them more competitive and provide increased revenue opportunities in key areas based on the three main pillars of SAM.

3.6 Comparison of SAM Rivals

The research found a number of companies based in Europe offering similar features or services and each company was researched and analysed and the features of the particular service were placed in a comparison table. To provide an easy visualisation, the available features, functions and themes of each system are highlighted with Red representing ‘Lacks’ and Green the ‘Offers’. See Figure 15.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Contentwis</th>
<th>Couchfunk</th>
<th>Horizon</th>
<th>Leankr</th>
<th>Monterosa</th>
<th>SAM</th>
<th>Tellybug</th>
<th>Tivin</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Screen Apps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Screen Platform</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asset Marketplace</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brand and Consumer Protection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Intelligence Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content &amp; Services Marketplace</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content Composition &amp; Enhancement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content Detection and Matching</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content Syndication Service</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross Media Links</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Aggregation from Multiple Sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Standardisation Procedures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dialogue Speech Recognition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The initial report, regarding the monitoring of the market uncovered a number of companies which were relevant to SAM's market of already offering similar features as those to be found in the SAM platform. In the updated Annex A of D2.2.2, it was seen that of the ‘M&E Companies Relevant to SAM’, 29 had closed down and 6 had either closed down and/or been acquired. Similarly in the Annex C it was highlighted that of 40 deemed to be ‘2nd Screen and Social TV Related Companies Similar to SAM’, 11 had closed down within the previous twelve months.

At Y3 the figures show the further closure of companies reflecting the decline of companies purely dedicated to 2nd Screen or Social TV. Of companies identified as ‘M&E Companies Relevant to SAM’, a further 18 have closed down, 5 have been acquired, with 7 companies still active in the marketplace in some way. Of the companies identified as, ‘2nd Screen and Social TV Related Companies Similar to SAM’, a further 2 have closed, 1 shows no evidence of operations, whilst 7 are still operating after either being acquired or changing their business models to adapt to market conditions.

The market activity related to 2nd Screen services from broadcasters and TV channels as well as social TV services via stand-alone Social TV apps has slowed down and so the companies were researched once again and compared with SAM once again and their status updated as below:

- **Contentwise**: Update – Since October 2015 Contentwise has continued to develop its content personalisation system. It has been selected as a finalist in the DigitalTV ‘Content Discovery Technology Award category’ and continues to acquire new clients and partners such as ADB, Alpha Network, MultiMedia Polska and Alticast.

- **Couchfunk**: Update – Uses a combination of web, TV, Social Media and self-produced content to create a one-stop shop for users to discover the most relevant content for them and also to directly watch live TV channels on their mobile devices.
through TV App Live. The company has moved into Sports Entertainment focussed on the German Bundesliga.

- **Horizon**: Update – Not available in UK, currently Ireland only. Horizon Go requires a Virgin Media Digital TV subscription and a Virgin Media broadband subscription. Integrated apps accessible through TV and other screens including YouTube, Facebook and Wikitrivia.

- **Leankr**: Update – Whilst the website is still live there are no new press stories since October 2014 and no updates regarding client acquisition and no evidence that the company is operating.

- **Monterosa**: Update – Since 2015 Monterosa continues to provide fan interaction products for entertain and sports, their website states they have had nearly 20 million interactions in 2016.

- **Tellybug**: Update – Have won awards for their apps for ‘The Voice’ and ‘The X Factor’. In August 2016 Tellybug produced the festival app for the Edinburgh International Television Festival.

- **Tivin**: Update – Second screen Tivin is a platform of services and applications for second screen powered by Vetrya SpA. a company widely involved in the digital industry, media, mobile, advertising, internet and television and Tivin remains part of its solutions portfolio with features including live events and targeted advertising. Through the 2nd Screen users are also able to access additional cameras for sports events.

Careful consideration of the current services being offered in the marketplace continues to show that no other company is able to offer the ‘one-stop-shop’ approach proposed in SAM and this continues to be the case. SAM remains unique in that it supports content providers, broadcasters, information brokers, 1st Screen manufacturers, 2nd Screen services and end users in the emerging multi-screen consumption and multi-device world. An additional area for potential exploitation has also been uncovered, that of e-Learning where SAM will be able to exploit its content and technologies.

Most companies analysed still provide 2nd Screen resources which are proprietary and cannot be shared in a generic way by other apps or platforms, and links or relationships with the content of these are not possible. However, SAM will deliver on the promise of open and standardised formats for the description of media assets and a framework for their configuration and use that could be used by third party software companies to easily build 2nd Screen, social and education orientated apps.

SAM continues to be unique in being able to offer all of the advantages and benefits laid out in D2.2.2: 3.6: Comparison of SAM Rivals p64.

The SWOT analysis and comparison of the European competitors shows that SAM remains positioned for commercial success in the M&E marketplace. SAM will provide a solution for European SMEs to make them more competitive and provide increased revenue opportunities in key areas based on the three main pillars of SAM:

- Multi-device Representation and 2nd Screen: Delivery of multi-media related content into multiple devices allowing maximum use and commercial exploitation

- Content Syndication: Creation and distribution of rich, engaging, context related content for enrichment and maximum use
• Social Media: Contextually related groups, dynamically created to maximise user adhesion providing ratings, reviews and recommendations to the user
4 Conclusion

The SWOT analysis and comparison of the European competitors in this deliverable show that SAM remains well positioned for commercial success in the M&E marketplace. Furthermore SAM will be positioned to provide a solution for European SMEs that will make them more competitive and provide increased revenue opportunities in key areas based on the three main pillars of SAM.

The Strategy&PWC report “2015: A video space odyssey – Value shifts in the TV and video ecosystem” in the section, “Signposts of an emerging landscape”, identified a number of areas which are relevant to SAM:

“We believe that there are a number of important signposts that can guide all players as they craft their strategies for future growth.

• In most markets, the supply of distribution will outgrow the supply of high-quality content.

• Reach — the ability to capture the largest potential audience possible — will remain a critical success factor.

• Combining reach with consumer insight and interactivity will unlock real value for advertisers.

• Providing a seamless user experience across devices and video formats will become an important differentiator in the consumer market.

• Alliances and partnerships will be critical to success.”

The opportunities and challenges identified in the deliverable also highlights changes related to the assumptions made for the period after project completion and the market information in this report will used to inform SAM’s overall technology exploitation planning, potential market areas for exploitation in key areas, as well as individual partners’ internal, content related exploitation strategies.

This year, pressure on the M&E industry through digital disruption and transformation has intensified and this has had a negative impact on 2nd Screen services. Despite the ongoing popularity of ‘general’ 2nd Screen activities by viewers while they watch TV, broadcasters and media companies have been reluctant to launch or continue their own 2nd Screen offering and most dedicated 2nd Screen and/or social TV technology platforms have largely gone out of business. However, Over-The-Top-TV (OTT) and Multiscreen service providers who offer end-to-end solutions for any content owner, media company or broadcaster have experienced significant growth over the last year. They can become potential prospects for SAM to supply 2nd Screen and social TV solutions for their broadcast/content customers. See 3.1 for more detail.

Accurate and up-to-date information linked to entertainment products and digital content is essential for the value chain and for search and discovery tools. Content Providers such as broadcasters, film studios, music labels and publishers continue rely third parties to create accurate metadata to ensure their customers find what they are looking for, whilst information suppliers and retailers rely on accurate metadata and unique identifiers to allow links to the correct products and pages. The M&E industry’s increasing need for

quality, linked data will enable the SAM project to benefit from entering the market as a trusted third party at a time when it can serve successful, established and sustainable companies, as well as the innovative companies who need rich linked data and related social media recommendations, ratings and reviews. See 3.2 for more detail.

A potential area of business, which has been identified for content syndication through SAM, is TCMA. The purpose of which is to enable partners to create brand presence by leveraging a major vendor brand and associating it with their own brand, and then driving demand for a set of solutions that include offerings from the vendor. SAM has unique features such as personalisation of syndicated content, dynamic users’ communities, second screen creation, which are still not in the arsenal for the known commercial TCMA tools and could become part of the decision criteria for companies in a near future. See 2.1.2 for more detail.

The SAM validation held in two Spanish schools demonstrated that schools throughout Europe are taking an increasing interest in engaging students with mobile learning during and beyond the school day exploiting ‘bring your own device’ (BYOD) models. The positive feedback from the schools confirmed e-Learning as a potential area of exploitation of SAM. Assumpta Meseguer Sisternes, the organising teacher at the school La Encarnacion de Sueca (Valencia) stated, “The experience has been more than satisfactory and exceeded, by far, the expectations of both the teachers and the students. 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.” This provides a great deal of encouragement and indicates that education and eLearning provides a potential area for SAM exploitation. See 2.4.2, 2.43 and D8.3.2.

Of course, making precise predictions in this report on the ultimate success of the SAM platform is impossible and the vision for the project is not an exact science. There is little doubt that, subject to the vagaries of the M&E marketplace, success will differ greatly from region to region and market to market, but the report does indicate the trends and directions which are taking hold across the TV and media ecosystem, the consumer demand for exciting, engaging experiences through richer content, the growth of content syndication and the growing digital literacy of young people, which is impacting on education.
# Annex A: M&E Companies Relevant to SAM

This table provides an update on the updated status of the companies deemed to be relevant to SAM in October 2016. It highlights the new entrants, acquisitions and closures which have occurred in the preceding twelve months.

<table>
<thead>
<tr>
<th>Company</th>
<th>Website</th>
<th>Product</th>
</tr>
</thead>
</table>
| ACTV8.me    | ACTV8.me   | **Update – ACTV8.me now has three elements:**  
1. Advertising platform allowing the instant transfer of offers and content from the TV to the consumer’s mobile device  
2. Development of original television series with leading television production companies in the USA.  
3. A contextual digital mobile wallet which uses consumer proximity to send offers to the device. The offers are stored within the Digital Wallet which sits inside of Apple Wallet and Google Wallet. |
| Aereo       | Aereo.com  | Live TV streaming service  
**Update – Acquired by TiVo, TiVo purchased the assets, including the customer list, of Aereo TV after the company declared bankruptcy.**  
Closed down |
| Arktan      | Arktan.com | Real-time social conversations platform  
**Update - Acquired by** |
<table>
<thead>
<tr>
<th>Platform</th>
<th>URL</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Janrain</td>
<td>Janrain on December 16, 2014 – redirects to <a href="http://www.janrain.com">www.janrain.com</a></td>
<td></td>
</tr>
<tr>
<td>Bipop</td>
<td>Bipop.it</td>
<td>Community platform and marketing tools</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Update - “Bipop.it” no longer available. No information on Google. Closed down</strong></td>
</tr>
<tr>
<td>Blinkbox</td>
<td>Blinkbox.com</td>
<td>UK based online service for video, music and books</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Update – Acquired by Tesco and then bought by Talk Talk as part of the acquisition of Tesco broadband and fixed telephone customers. Now TalkTalk TV store:</strong> <a href="http://www.talktalktvstore.co.uk">www.talktalktvstore.co.uk</a></td>
</tr>
<tr>
<td>Chatterbox</td>
<td>Chatterbox.mobi</td>
<td>2nd Screen app in Asia</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Update – Doesn’t allow you onto the website. Error 403 Forbidden. Closed down</strong></td>
</tr>
<tr>
<td>Civolution/Nexguard.com/</td>
<td>Civolution.com/Nexguard.com/</td>
<td>Automatic content recognition and management. <strong>Update – Kudelski Group acquired Civolution’s market leading NexGuard Forensic Watermarking business supporting content tracking solutions for pre-release, digital cinema, pay TV and streaming.</strong></td>
</tr>
<tr>
<td>Fanhattan</td>
<td>Fanhattan.com</td>
<td>Social programme guide for TV and movies</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Update – Now “www.fan.tv”</strong></td>
</tr>
<tr>
<td>iBubblr</td>
<td>iBubblr.com</td>
<td>Conversation and curation platform</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Update – URL no longer works, social media pages</strong></td>
</tr>
<tr>
<td><strong>Numote</strong></td>
<td>Numote.com</td>
<td>2nd Screen platform</td>
</tr>
<tr>
<td><strong>OneTwoSee</strong></td>
<td>OneTwoSee.com</td>
<td>2nd Screen platform</td>
</tr>
<tr>
<td><strong>OneUp Games</strong></td>
<td>1up.me</td>
<td>2nd Screen gaming apps for sports</td>
</tr>
<tr>
<td><strong>Philo (LocalResponse)</strong></td>
<td>PlayPhilo.com</td>
<td>TV check-in app (folded into LocalResponse)</td>
</tr>
<tr>
<td><strong>PlayUp</strong></td>
<td>iPlayup.com</td>
<td>2nd Screen sports experience with live hangouts</td>
</tr>
<tr>
<td><strong>Rovi</strong></td>
<td>Rovi.com</td>
<td>Metadata, recommendation, analytics, advertising solutions</td>
</tr>
<tr>
<td><strong>ScribbleLive</strong></td>
<td>ScribbleLive.com</td>
<td>Real-time social conversation platform</td>
</tr>
<tr>
<td><strong>ScreenTribe</strong></td>
<td>ScreenTribe.com</td>
<td>Social TV community and loyalty program</td>
</tr>
<tr>
<td><strong>Sofanatics</strong></td>
<td>Sofanatics.com</td>
<td>2nd Screen service for sports fans</td>
</tr>
<tr>
<td><strong>Tapcast</strong></td>
<td>Tapcast.tv</td>
<td>2nd Screen platform</td>
</tr>
<tr>
<td>Service</td>
<td>Website</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Telescope</td>
<td>Telescope.tv</td>
<td>Audience interaction platform</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Update – Now working with leading franchises powering over 2 billion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>interactions very year</td>
</tr>
<tr>
<td>Telfie</td>
<td>Telfie.com/</td>
<td>Update – GetGlue closed down and was acquired by the Dutch Company Voice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of TV and launched in late 2016 as Telfie, a social network for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>entertainment that lets users share their favourite TV shows and movies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>through social media accounts with just one click.</td>
</tr>
<tr>
<td>Tunerfish (Comcast)</td>
<td>Tunerfish.com</td>
<td>TV check-in app and community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Redirects to “<a href="https://see.it/tunerfish/%E2%80%9D">https://see.it/tunerfish/”</a></td>
</tr>
<tr>
<td>TVBuzz</td>
<td>TVBuzz.nl</td>
<td>Social programming guide (owned by UPC)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Update – Couldn’t get onto website. Closed down</td>
</tr>
<tr>
<td>TV Dinner</td>
<td>TV-Dinner.com</td>
<td>2nd Screen social gaming app</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Update – Closed down</td>
</tr>
<tr>
<td>TVPlus</td>
<td>TVPlus.com</td>
<td>2nd Screen platform</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Update – Closed down</td>
</tr>
<tr>
<td>TweetTV</td>
<td>TweetTV.com</td>
<td>Social programme guide and community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Update – Closed down</td>
</tr>
<tr>
<td>Two-Screen</td>
<td>two-screen.tv</td>
<td>2nd Screen app developer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Update – Closed down</td>
</tr>
<tr>
<td>Umami</td>
<td>Umami.com</td>
<td>2nd Screen platform (closed down)</td>
</tr>
<tr>
<td>Platform</td>
<td>Website</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>Yap.TV</td>
<td>Yap.tv</td>
<td>2nd Screen platform and social programme guide</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Update – Closed down</strong></td>
</tr>
<tr>
<td>YouToo</td>
<td>YouToo.com</td>
<td>Live reality TV network</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Update – Navigates to “youtooamerica.com”</strong></td>
</tr>
</tbody>
</table>
Annex B. Sources of M&E Industry Reports

No new sources have been added since D2.2.2.
Annex C: 2nd Screen and Social TV-Related Companies Similar to SAM

This table provides the updated status of the 2nd Screen and Social TV related companies deemed to be similar to SAM in October 2016 and it highlights the company developments and any closures, which have occurred since October 2015.

<table>
<thead>
<tr>
<th>Company</th>
<th>Website</th>
<th>2 Screen Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>BridgeMediatech</td>
<td>BridgeMediatech.com</td>
<td>Based in Spain, the 2nd Screen platform provides contextualised communication to viewers, including advertising based on their viewing habits. Update – Uses audio-recognition software to sync screens. The site doesn’t mention any clients or partners.</td>
</tr>
<tr>
<td>Contentwise</td>
<td>Contentwise.tv</td>
<td>Continues to develop services. Content personalisation system offering recommendations and predictive browsing for broadcast, cable, satellite, IPTV, OTT and video streaming companies. Update – Features editorial tools to control content and analytics for monitoring. Customers adopting to use Contentwise: - Maxdome, Mediaset, Sky Italia etc.</td>
</tr>
<tr>
<td>Fan TV (formerly Fanhattan)</td>
<td>Fan.tv</td>
<td>US-based Social programme guide for TV and movies Update - Fanhattan rebranded as Fan TV and created a new device with touch remote to bring the service to the TV screen. FanTV now available for business through an API</td>
</tr>
<tr>
<td>Horizon Go (formerly TVBuzz)</td>
<td>TVBuzz.nl/horizon.tv</td>
<td>Netherlands-based social programming guide (owned by UPC) offering users the ability to watch a selection of channels over any connected device (smartphones, tablets, TV). Update – Not available in UK. Currently Ireland only. Is accessible with a Virgin Media account. Integrated apps accessible through TV and other screens including YouTube, Facebook and Wikitrivia. The platform also includes news, weather and traffic apps.</td>
</tr>
<tr>
<td>HyperTV</td>
<td>HyperTVX.com</td>
<td>2nd Screen platform, which has contextual awareness of the user environment (location, time of day etc.) and uses that information to provide a personalised experience (targeted</td>
</tr>
<tr>
<td>Platform</td>
<td>Website</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>iBubblr</td>
<td>iBubblr.com</td>
<td>Social conversation and curation platform providing interaction with friends about TV programming.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Update</strong> – Site closed – Domain listed in the marketplace.</td>
</tr>
<tr>
<td>Leankr</td>
<td>Leankr.com</td>
<td>Bouygues Telecom is said to be currently testing in the B.tv Leankr recommendation solution. No evidence of activity on Leankr site</td>
</tr>
<tr>
<td>Monterosa</td>
<td>Monterosa.co.uk</td>
<td><strong>Update</strong> – Provides interactive apps for sports, entertainment etc. states they have had nearly 20 million user interactions this year.</td>
</tr>
<tr>
<td>Thismoment</td>
<td>Thismoment.com</td>
<td>Social marketing platform which allows brands to curate all user-generated Social Media posts related to their products and create targeted media to be shared around the web. Has raised more than $50 million so far working with companies such as Levi’s, Coca-Cola, Kia and Gillette.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Update</strong> – Now provide cloud service to “create playlists” i.e. videos, photos UGC and send it to customers and use analytics tool to track and refine.</td>
</tr>
<tr>
<td>TVPlus</td>
<td>TVPlus.com</td>
<td>US-based social TV and 2nd Screen platform which delivers synchronised content experiences to TV programming. Can also deliver scene-by-scene time-based metadata relating to characters, music, products etc.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Update</strong> – Closed down</td>
</tr>
</tbody>
</table>