

## **SOCIAL NETWORK PLATFORM FOR SECOND SCREEN MEDIA EXPERIENCES**

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### **ABSTRACT**

The advent of popular smartphones and tablets has incited engagement in social networks. Quite often social networking on a specific TV programme occurs whilst watching TV. As opposed to broadcasters, whom by definition, currently lack a return path – hence an individual relation with their viewers – the consumer himself becomes digital. The consumer thus establishes, through his digital footprint, a direct relation with international service providers. This implies a potential drawback of the broadcasting industry in the coming era. The severity of this impact will be larger than the digitisation of TV during the last decade. This paper presents a framework on how broadcasters can leverage recent evolutions. It furthermore outlines our own findings based upon two second screen apps launched in the context a mainstream live TV programme. In our firm belief, collaboration between broadcasters will entail compelling second screen app offers for the media consumer thus defying the fierce competition from emerging international players in the digital media market.

### **INTRODUCTION**

Within the framework of the innovation programme of the Flemish Government in the early years 2000, VRT acquired substantial experience in bringing TV in the living room through a computer platform. During a consumer trial, one hundred families were given a purpose-built PC to watch television and to execute interactive tasks. At the time, this revolutionary experiment was solely made economically viable through subsidized research programmes. As a result of the technical evolution and triggered by the success of smartphones and tablets, state-of-the-art browser experience on TV can now be offered at a reasonable price. Numerous initiatives, the most important ones currently being AppleTV, GoogleTV, Microsoft Mediaroom, Boxee, HbbTV and BBC's YouView arose from this. Although each product has distinct features, they all share the same objective of combining TV and Internet.

Starting from earlier acquired insights, the question arises whether offering interactivity from a browser on the TV-screen is the ideal approach. We strongly believe that interactivity stands a better chance on mobile devices used by the viewers whilst watching television. This is defined as second screen interactivity.

In order to bootstrap innovation in this area, VRT-medialab has developed “MediaSquare”, a digital meeting place for media customers and producers in Flanders. MediaSquare offers second screen apps which enable the media customer to interact with the programme. Furthermore, MediaSquare stimulates enhanced experience through second screen apps (such as taking part in a quiz or obtaining additional information on news

items) and recommends programmes through social network channels. This mechanism is further discussed in detail in the section on MediaSquare.

## **STATE OF THE ART**

### **The end of TV? - Not**

Despite the fact that the boost of Internet services prophesied “the end of television,” [1] [2] television has consolidated its position as a medium. Over the past ten years, the daily average of viewed minutes has remained fairly stable. Studies during the last quarter of 2010 [3] have shown that on average Americans watch 34 hours and 39 minutes of TV a week. In spite of the fundamental differences of the European TV market, the daily European viewing time remains practically unchanged. In the UK, television viewing has reached an all time high [4]. Moreover, the number of viewing hours shows an increasing trend. Many suspect a causal connection with the rise of social network sites such as Facebook and Twitter [5].

By posting reactions on a live television programme on Facebook, people draw attention to the programme and thus incite their online friends to tune into that particular programme. Watching TV is a social activity. We enjoy watching in groups and discussing with friends. Twitter and Facebook expand the intimate group of television watching beyond the living room to friends anywhere [6].

### **Broadcasting business models under pressure**

According to the main current broadcasting business models, advertisers provide (through media agencies) the funds for broadcasters and publishers to produce and distribute their content (big arrow with euro sign on the right of Figure 1 from Media Agencies to Broadcasters & Publishers - Local). Unlike commercial networks, public broadcasters are less dependant on advertising funding, since their income is mainly funded by taxpayers' money. In the context of this particular subject, we propose to make no distinction between public and commercial broadcasters since they both aspire the same objective.

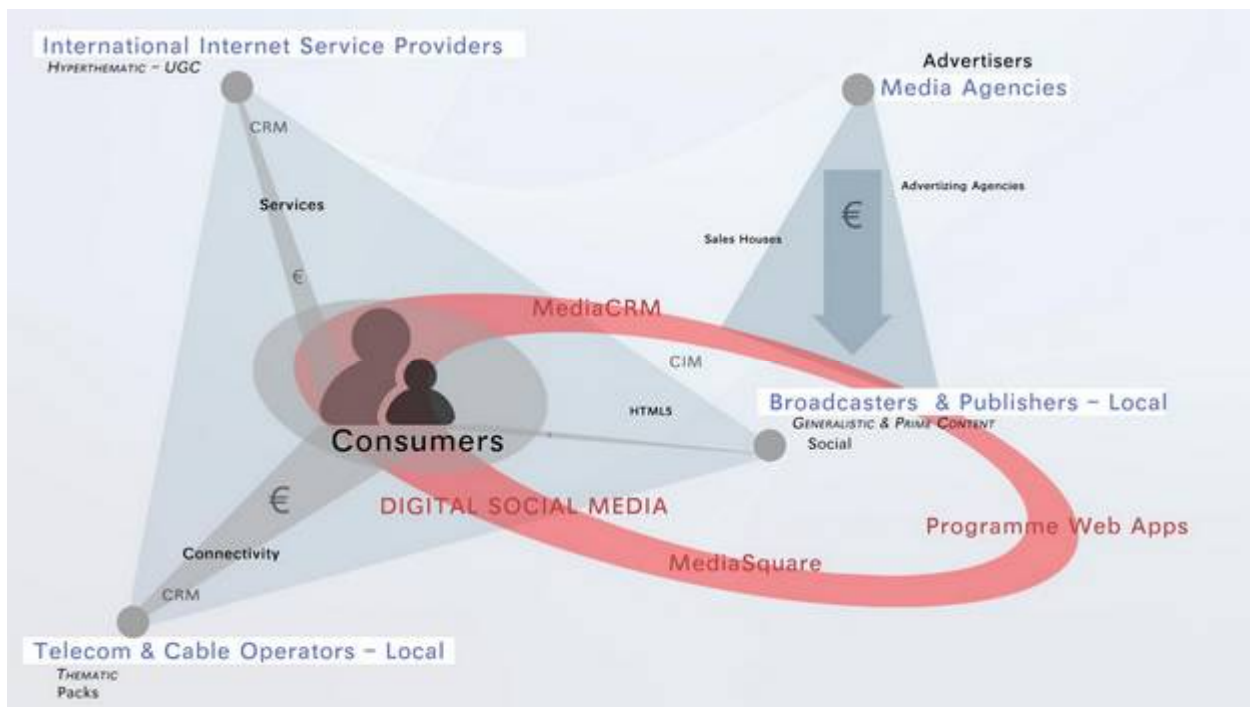


Figure 1: Digital content landscape.

Social media has enhanced the hype-effect of live-broadcasting, leading to exceptionally high ratings of some top productions [7]. In turn, those ratings guarantee fresh advertising budgets. In an attempt to expand the rating range even further, broadcasters are tempted to cooperate with international service providers renowned for their over the top services such as those from Google, Facebook, YouTube, Amazon and Netflix. Due to compelling content and services people spend more and more time on the Internet. These entertainment services are characterised by their (hyper)thematic content or are produced by the users themselves (user generated content - UGC) as opposed to the general content professionally produced by broadcasters and publishers.

Over the top media players (Figure 1, top left) often collect detailed information on users and customers from their platforms to be used for targeted advertising campaigns. Major Internet players such as Google and Facebook thus manage to attract an increasing share of the available advertising budget. According to a study [8], this year the online advertising share will increase with more than 4% (up to 18%). In the UK, advertisers are currently spending more money on the Internet than on television.

On the other hand, telecoms and cable operators (Figure 1, bottom left) offer the necessary connectivity by means of subscription to pay-packets thus ensuring a regular secured income. Although most of them are very profitable, these operators are enthusiastic to join the broadcasting business since they are prodded by their shareholders because of the perceived bright cash prospects. In fact, both players have their eyes on the advertisers' and broadcasters' growing cash flow. In the US, the print industry already underwent a cash flow revolution resulting in devastating consequences for the newspaper business [9].

## **Building a digital relationship with the viewer/listener**

In order to safeguard their advertising income, it is imperative for broadcasters and publishers to build up a direct relation on their prime content with their end users. (cfr red circle in Figure 1). This paper proposes the creation of a joint media platform focusing on digital interaction on prime-time content by means of second screen web apps thus increasing the attractiveness of live content. Live viewers represent a surplus value to advertisers and are essential for securing and preserving cable and satellite TV subscriptions. Social TV is an antidote to cord-cutting by making linear television a must-have [10]. By building such a platform, the MediaSquare project aims to establish a direct relationship with its digital end users. It helps the customer to interact with prime-time programmes and represents a digital launch base for interactive apps surrounding the programmes. MediaSquare can fully be subject to customer relation management (CRM). MediaCRM, the project exploring these CRM possibilities, introduces innovations in the areas of real-time statistics, audio recognition for automatic programme syncing, etc. More details can be found in [11].

## **MEDIASQUARE PLATFORM**

In order to derive benefit from the full range of Internet tool chains these apps have been developed in HTML5. HTML5 ensures quick development of the apps and by-passes fees currently charged by stores offering access to their platform apps. The MediaSquare platform is discussed in detail in this section.

In our opinion good content is fundamental for the future of television. People want to experience media together, either physically present in the same space or virtually connected through the Internet. So-called “second screens” such as smartphones and tablets, are on the up and play a decisive role in our society. Interactive apps for smartphones and tablets enable direct contact with the consumer. These apps allow us to examine the consumers’ media interaction as well as his favourite programmes, enabling us to offer a tailored supply. That way, both programme makers and advertisers acquire a wealth of information on the media consumer.

This vision is the basic principle of the MediaSquare project. This platform starts off with the programme guide and in a single glance indicates which programmes have triggered social activity. MediaSquare’s intended purpose is to create a platform where media users can enter into dialogue with each other as well as with the programme makers: the so-called social programme guide. The importance of live programmes is significantly determined by the extent of enthusiasm of the viewer as well as by the social activity the programme triggers at that very moment. This importance is then reflected in the visual presentation of the social programme guide.

MediaSquare offers the user ample opportunities such as information on the latest radio- and television programmes and the opportunity to chat with other users, to share content through social networks and to actively participate in a quiz. Starting from the programme guide, the user can switch to the page of a specific programme. On this page, the user is able to track the social activity with regard to this programme as well as the interactive programme-apps of the programme itself. The section “Use cases” outlines two examples of how an actual app is linked to an existing TV programme.

The launching platform shortens the distance between “call to action” and the use of the app since it by-passes the app stores. By means of an application programming interface

(API), these programme apps can communicate with the generic section of the platform. To this end the investments and operational costs for generic services, such as account management, are spread among all programmes. In turn, this cost-management lowers the programme maker's threshold to invest in innovative second screen apps.

The preference for one umbrella platform, available to the entire media sector, has been well thought-out. The main asset of a cross-channel platform consists in the single sign-on. In addition, by means of networking effects the platform can expand to a launch base for interactivity.

## USE CASES

### The diabetes test

On Wednesday 29 December 2010, prime-time television viewers were able to try out an interactive second screen app during the *één* programme "Ook getest op mensen". The VRT channel *één* is the leading public TV channel in Flanders with a market share varying between 30 and 40%. This second screen app, available from a browser, assessed the risks for (type-2) diabetes by means of a few easy questions. During the television programme sixteen people from the audience each had a tablet-PC at their disposal (cfr Figure 2). Viewers could do the test at home through their browser ([www.een.be/ogom](http://www.een.be/ogom)) on a desktop PC, laptop, smartphone or tablet. Prior to the actual television programme, television viewers were incited to participate in the diabetes test by means of a promotional trailer on television. The same URL appeared on screen at the start of the programme as the television host made an appeal for everybody to participate in the test.



Figure 2: Sixteen people do the diabetes test on a tablet-PC.

A previous interactive online test assessing the risk of diabetes, instructed by the Flemish Diabetes Society, had been implemented in Flash technology. This technology, however, is not compatible with certain types of smartphones and tablets. Since the test required implementation as second screen app on various types of smartphones and tablets, VRT-medialab developed a new version of the test in HTML5.

A total of 55,000 tests was executed of which 14% before the start of the programme, 61% (30,307) during the programme and 25% after the programme (cfr Figure 3). A little under 10% of all persons executed the test on a smartphone or tablet-PC. Apple iPad accounted for 3%, Apple iPhone for 4%, Apple iPod for 1% and the remaining 1% were Android devices. Both results of the test audience and the viewers at home were processed real-time and aired at the end of the item on diabetes during the programme. The test persons and the participating viewers were able to compare their own scores with those of other participants. Furthermore, they received tips and tricks on how to reduce the risks of diabetes.

Figure 3 shows data on the number of tests executed before, during and at the end of the show. The red curve illustrates the number of tests per minute and the blue curve illustrates the number of cumulative tests.

During the show the servers of [een.be](http://een.be) suffered from performance problems because 700 persons entered an incorrect URL. As a result, the number of tests decreased 21 minutes after the start of the show. This decline is clearly visible in Figure 5.

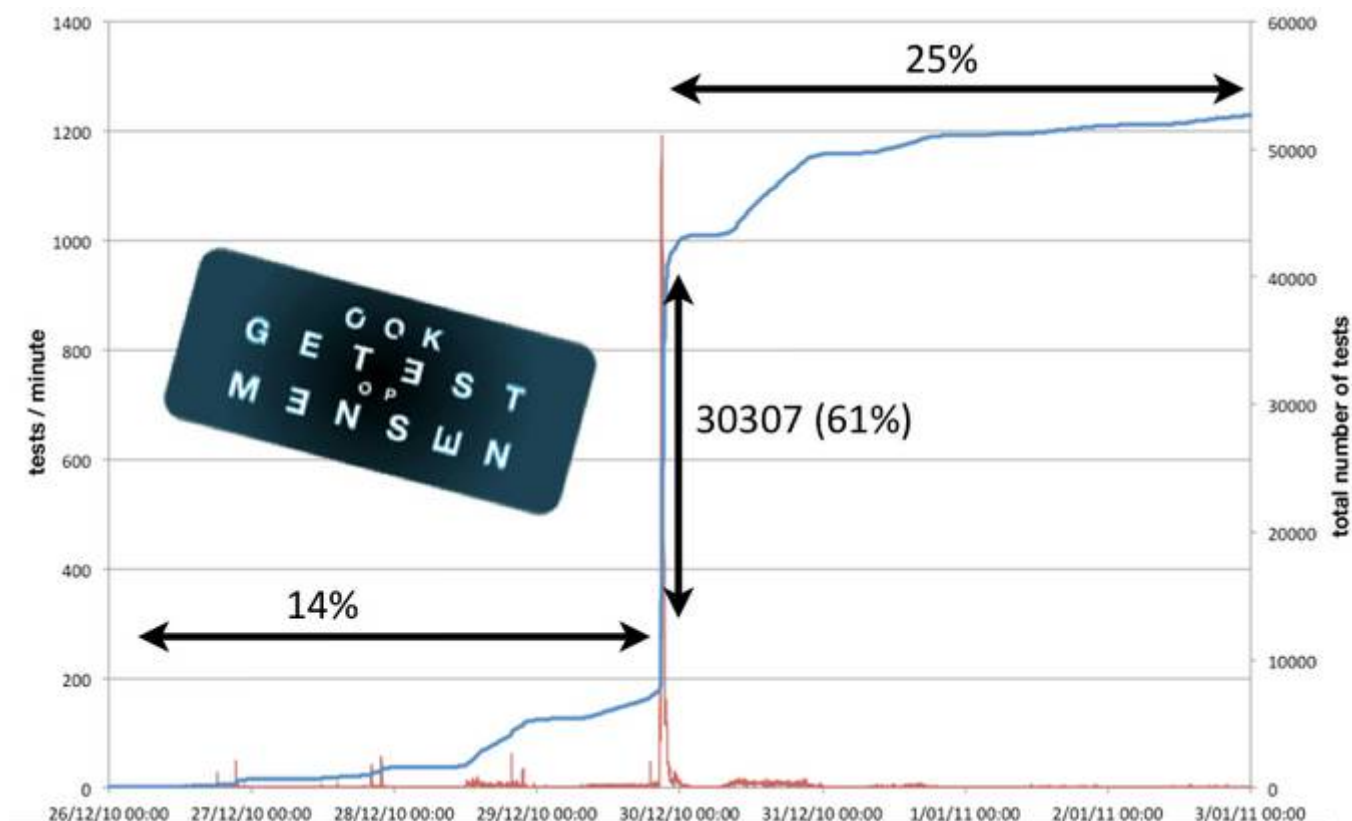


Figure 3: Number of diabetes tests before, during and at the end of the programme and number of test results submitted per minute

### The eyewitness test: a photofit picture

VRT-medialab also developed a test for a show of “Ook getest op mensen” dedicated to eyewitnesses. This test could, just like the diabetes test, be downloaded as second screen app on a smartphone or tablet-PC and was available online. The show presenting the test was broadcast on Wednesday 9 March 2011 and can be downloaded from [www.ogomface.appspot.com](http://www.ogomface.appspot.com). Figure 4 shows the eyewitness test in a browser on a tablet and a smartphone with a touch interface (left) and in a browser on a mouse-operated laptop or desktop (right).

Once again, members from the audience (16 people this time) had a tablet-PC at their disposal. Viewers at home and in the studio were shown a brief glance of an individual. Based on this extremely short visual experience, viewers were requested to reconstruct the image thus verifying the reliability of eyewitness perception. By means of websockets the composition of the photofit picture by the 16 test persons was visualised on a video wall in real-time. This enables the viewers to grasp the use of the app and the composing of the photofit picture. The image created by the viewers at home was processed in real-time as well. The day after the show 32,336 people had sent in a photofit picture. The

composition process, online or as second screen app, was similar to the results as described in the first use case.

Although there was no prior announcement of the test, the response was twice as high in comparison to the diabetes test. However, spread out over a larger time frame, in average 2,500 photofit pictures were sent in per minute. The HTML5 web app for the eyewitness test was hosted on [Google App Engine](#). During peak moments over 500 requests per minute were processed thus actively powering up more than 30 virtual Google servers. The app was booted from a purpose-built version of the [een.be](#) webpage. The actual channel website remained static with the sole purpose of directing visitors to the second screen app.



Figure 4: Eyewitness test on a tablet and smartphone (left) and on a laptop or desktop (right).



Figure 5: Comparison of the number of results per minute of the diabetes and the eyewitness tests.

## **Use cases: conclusion**

Figure 5 compares the number of tests executed for both use cases. The red curve shows the evolution of the diabetes test and the blue curve illustrates the one of the eyewitness test. One immediately notices the explicit drop of the red curve at the start of the programme. This drop relates to the scaling limit of Google App Engine. This limit is incorporated in order to avoid unexpected costs in case of a possible “denial of service”-attack. During the diabetes test the scaling limit was reached after seven minutes. Since the overload was anticipated, hosting could further be scaled out ten minutes after the start of the show. Since then, Google App Engine has removed this scaling limit, hence the blue curve indicating that the hosting platform effectively dealt with the submits generated during the eyewitness test.

The ratings of the programme “Ook getest op mensen” frequently scored more than 1 million viewers. Interactivity enforces the “live” sensation of the viewer and consequently carries the world of a programme. Therefore it is a challenge for programme makers and broadcasters to enhance interactivity by means of second screens apps and a television programme.

## **CONCLUSION**

In times of a turbulent media market, we advise broadcasters and publishers to develop a direct relationship with their customers thus ensuring them a favourable market position. We have developed a platform which simplifies digital interaction of generalist content. This launching platform offers a clear picture of the existing digital activity on programmes and articles.

Network-effects will be stronger in the platform’s cross-programme network than in the totality of individual programme-networks. In order to underpin this thesis, two second screen apps were launched with a top-ten live programme of a generalist channel. The use of innovative Internet technology (platform hosting in the cloud, HTML5, websockets) is conducive to economic feasibility in order to reach the large public. This evolution is enhanced by the accessibility and omnipresence of tablets and smartphones.

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## REFERENCES

- [1] Gartner, J. 2000. It's the End of TV As We Know It. Wired Magazine. January, 2000.
- [2] Rose, F. 2004. The End of TV as We Know It. Wired Magazine. December, 2004.
- [3] Nielsen, Corp. 2011. State of the Media Trends in TV Viewing—2011 TV Upfronts, April, 2011.
- [4] Screendigest, 2011. Television viewing reaches all-time high in the UK. February, 2011.
- [5] Ehrlich, B. 2011. Does Twitter Drive TV Viewership? May, 2011.
- [6] Wohn, D. Y. and Na, E.K. 2011. Tweeting about TV: Sharing television viewing experiences via social media message streams. First Monday. March, 2011.
- [7] Bergman, C. 2010 Social media lifts TV show ratings 10 percent. Lost Remote. December, 2010.
- [8] Zenithoptimedia. 2011. Zenithoptimedia Adspend forecast update. April, 2011.
- [9] Varian, H., Newspaper economics: online and offline. March, 2010.
- [10] Seeking Alpha. 2010. Why Internet Won't Kill the Video Sub. First Monday. March, 2011.
- [11] De Sutter, R. and Nachtergaele, L. 2011. Realizing CRM in the Media by using the Second Screen. Scheduled for publication in EBU Tech-I. June, 2011.