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**Olympic Mobile Application Succeeds:
A Case Study on Sotshi Arena**

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OLYMPIC MOBILE APPLICATION SUCCEEDS:
A CASE STUDY ON SOTSHI AREENA

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Summary

Tiina Länkinen: Olympic Mobile Application Succeeds: A Case Study on Sotshi Arena.

(Under the supervision of Kristine Toohey, Professor)

The aim of this study was to research the user response to a new kind of Olympic experience; mobile viewing of the Games in Finland through a public broadcast service titled Sotshi Arena in 2014. In addition, the historical and cultural development towards mobile sports audiences was studied. The data used were the responses of 4.773 individuals who took part in a post-survey of the Olympic production in Finnish public broadcasting company Yle.

In comparison to television broadcasts' watchers, the users of the mobile service Sotshi Arena were more critical in their feedback and less satisfied. Nevertheless the Sotshi Arena service was applauded by users. Sotshi Arena acted as a secondary, if inferior, screen to witness the Olympic Games. Thus viewers who only relied on television broadcasts were less satisfied with the overall Olympic production in Yle than those who had Sotshi Arena in their repertoire.

Even though Sotshi Arena received criticism concerning haste in its making, releasing the service helped viewers to enjoy the Games more fully. Vehement feedback about vast technical difficulties are overcome by the sheer possibility to follow events *whenever* and *wherever* a television is not available. Live sports are a very distinct television entity in their own because of the exceptional time sensitivity it demands. The question of *what* to watch was not necessarily that relevant, judging by the open feedback. But, as viewing habits are swiftly changing, audiences may well grow accustomed to individual sports content choices at the expense of national togetherness.

Keywords: Olympic, broadcasting, mobile application

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1. Introduction

1.1. The demands of a global mega event

The way many people watch the *Olympic Games* as a worldwide audience is changing. Families, friends and communities used to gather together in front of their televisions to support their national athletic heroes. This gathering has been difficult in those time zones where finals and other definitive sports moments take place early in the day or very late in the night.

For Finnish Olympic audience, raised to see its athletes excel in snowy and icy sports, the latest Olympic Games held major events in the afternoon hours, when employees were still at their offices and students in their schools.

Of course the media industry as a whole has witnessed the fragmentation in the consumption of television footage. For years it has been possible to record and delay one's viewing of a television event, with any device from the VCR to a digital recorder. Currently, the primary option is internet streaming. Video footage can be accessed without a television on a web-connected smartphone, tablet or desktop computer and streamed either live or later – whenever most suitable to oneself. Thus the smartphone and the tablet have become inevitable tools between an Olympic broadcaster and its audience.

This thesis analyzes a mobile application that was developed for the Winter Olympics of 2014, and mainly for the Finnish audience. Government-owned broadcasting company Yle published the Sotshi Areena app as an internationally ambitious pioneer in streaming Olympic events.

1.2. Sotshi Areena emerges

Sotshi Areena certainly has not been the only or the first mobile application for these Olympic Games by a news broadcaster. The Sochi 2014 Winter Olympics were not even the first “app Games”, as several media giants experimented with digital applications for London 2012. At that time, mobile media played an important role in bringing information to the worldwide audience with 3.500 hours of live coverage (Phan et al, 2012).

However, the Sochi Games was the first time global digital coverage has been more than television coverage in the history of Olympic Games (Kantar, 2014). For example, Yle had a Finnish-minded approach in its own app, with over 700 hours of live stream and emphasis on national competitors on any other content. Olympic rights holding broadcasters dedicated 60 000 hours to Sochi 2014 video footage on websites, mobile sites or apps – compared to approximately 48 000 television hours. 2.1 billion people watched at least one minute of the Sochi Olympics. That accounts for 46 percent of the world population (Kantar, 2014).

One might suppose that Winter Olympic Games are a lull between summer editions and as such, serve the needs of broadcasters to pilot innovations. On the contrary, in Finland, the Winter Olympics have always been a bigger television event than the Summer Olympics, judging by the number of viewers and considering the festival's roots in Nordic Games. In 2012, the peak day for the Finnish television audience had 2.4 million viewers watching the 15th day of the London Olympics. The broadcast had the 2nd biggest television audience of the whole year (Finnpanel, 2012). In 2014, 2.8 million viewers watched the 9th day of the Sochi Olympics, the peak day of the Games for the Finnish television audience – almost surpassing the year's most watched television coverage of the Independence Day Ball that dominates the chart year after year. (Finnpanel, 2015).

Yle considers the Sotshi Areena app a remarkable success. It was downloaded 425.000 times. Yle developed three different mobile platforms for it. Shortly after the Olympic Games, Yle did a survey on its website on customer consent, to learn more about the taxpayer experience of several production aspects, such as the reception of Sotshi Areena. In the survey, Yle asked which media did the respondent use to follow the Olympic Games and queried a grade for these different media based on the respondent's customer experience, among them for Sotshi Areena. The survey also had one open-ended question for any feedback about Yle's performance regarding the Winter Olympics.

1.3. The approach and objective

This thesis analyzes the Yle survey to point out how the Sotshi Areena app was received and used, and ultimately what was the customer experience through the use of a survey involving both closed and open ended responses (Miten Yle Urheilun onnistui olympiakisoissa, 2014). The responses are studied to pinpoint what were the service's highlights and flaws. The use of multiple media in the following of the Olympics will be statistically analyzed to find how Sotshi Areena backed the traditionally primary source of Olympic information, the television.

The open-ended responses will be analyzed through the use of thematic content analysis. Therefore, this thesis uses mixed methods to present its results.

In further development of apps for mega sports events, the broadcasters gain a better grasp on what to deliver when there have been analyzed experiences concerning the statistical need for a streaming app that supports television viewership. It is also easier to avoid pitfalls when earlier experiences have been put together in the survey respondents' words.

1.4. Limitations and generalizability

Limitations of this study lie of course in the questionnaire delivered in 2014. The Sotshi Areena app was only given a grade by respondents that can be measured against the grades they give to television content, website content or other Olympic media content. The open-ended feedback question did not specifically ask for experiences regarding Sotshi Areena, and therefore all accessible knowledge of customer experience is from the respondent's side. The survey has more than 4.700 respondents, but only a part of them gave any detailed reasoning for their Sotshi Areena grade in writing. Not all of the respondents were even familiar with Sotshi Areena.

The findings in this thesis are to some extent generalizable although it is a case study. The global movement from television domination to portable watching is undeniable (Lotz, 2014). There are many national broadcasters that still have not experimented with a mobile app for streaming Olympic events. Olympic rights holders have much to learn from each other, breaking the boundaries of broadcasting nations. The Finnish case of Sotshi Areena app is a fairly early example of what is to come in the next Games of Rio 2016 and Pyeongchang 2018 - and what is to follow with force.

2. The Landscape of Mobile Olympics – Brands and Terminology

First, it must be explained where the studied Sotshi Arena app lies in the context of Olympic broadcasting in Finland.

The Finnish broadcasting company Yle is a national, government-owned media institution with four television channels, several radio stations and a strong internet presence. Yle has always been the sole Olympic rights holder in Finland. Traditionally television channel Yle TV2 has hosted Olympic broadcasts. However, as the Olympic Games have gotten bigger and Yle has grown its television catalogue to four channels, there has been sprawl of live Olympic content to the other Yle-owned channels as well. Despite this, TV2 remains as the primary host of Olympic material.

Secondly, it is important to grasp the bigger picture outside Finland, as the conditions for national Olympic broadcasting stem from the International Olympic Committee.

The national and international frameworks are presented in the following two chapters.

2.1. Olympic content in Yle

Yle Urheilu, literally Yle Sports, is a division within Yle, dedicated to sports journalism. It is fully responsible of deciding on and delivering Olympic content during the Games. Most of Yle Urheilu's content is broadcast on the aforementioned channel TV2. The Olympic Games, both summer and winter, are naturally the biggest production effort of the division whereas the Fifa World Cup of soccer comes a very close second.

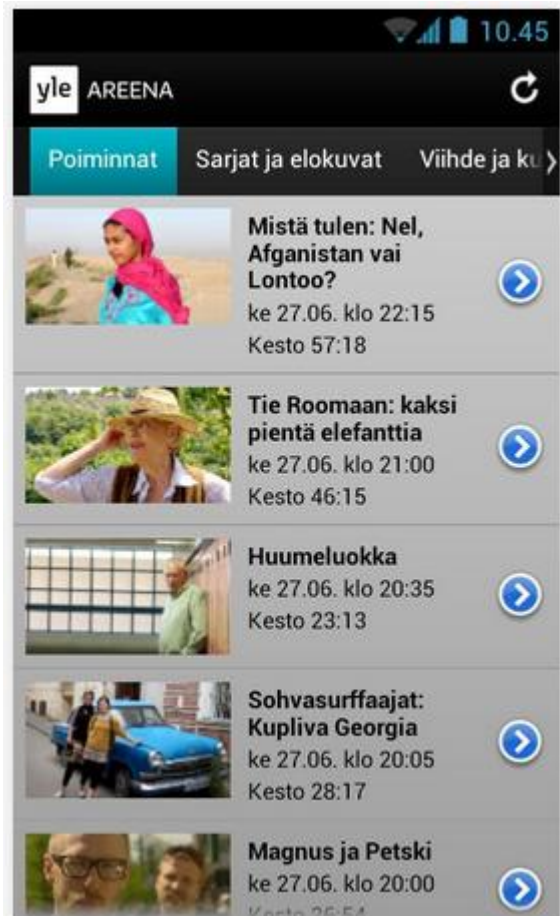


Figure 1. Yle Areena mobile application.

Yle Urheilu's website is Yle.fi/urheilu. During major events – Olympic Games, Fifa World Cup and Ice Hockey Championship tournaments – it becomes the most visited section of the Yle domain. Generally Yle.fi/uutiset (Yle News) has the heaviest traffic.

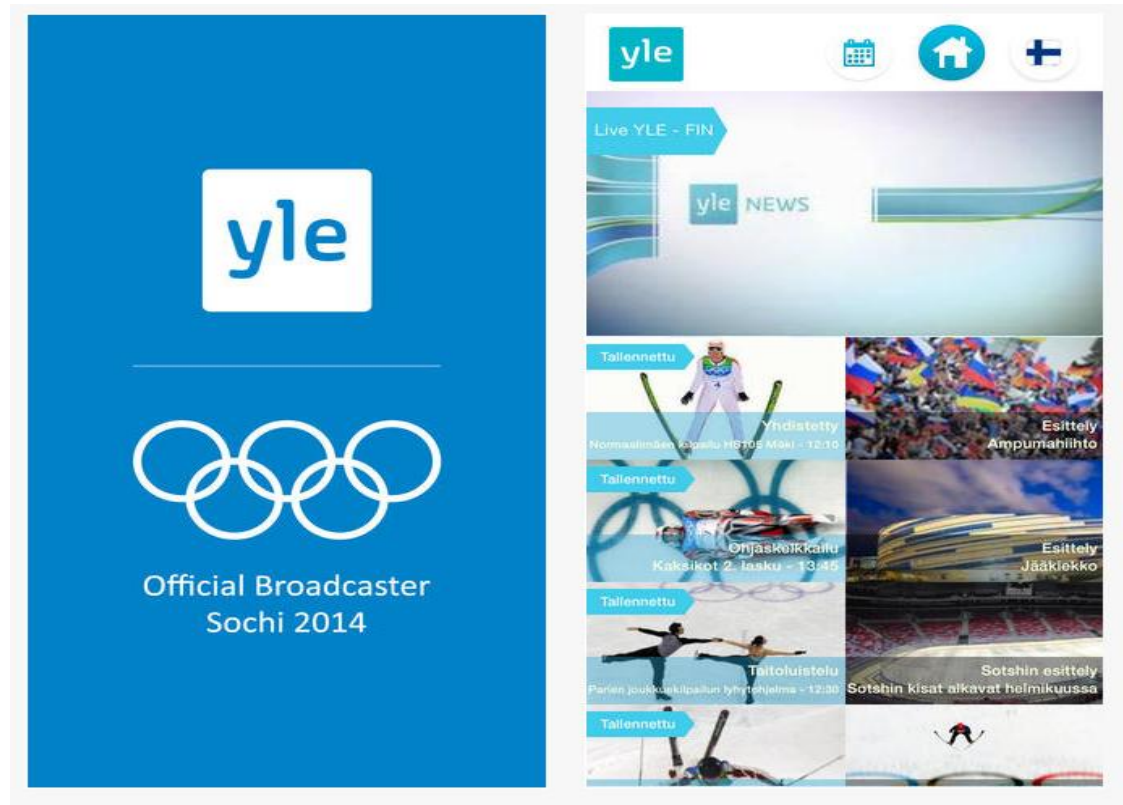


Figure 2. Left: The launch window of the Sochi Arena mobile application for iPhone. Right: The main screen of the app for iPhone. The user interface is similar for other mobile devices such as Android-powered smartphones.

Not all the sports or Olympic content in the Yle web domain is in Yle.fi/urheilu. Like many broadcasters around the world, Yle has a video streaming service with a strong brand. Yle's streaming service **Areena** hosts live streamings of all the television channels it owns and individual events such as sports tournaments and press conferences. Mostly, all of broadcast television series, motion pictures and sports events are uploaded in Areena and accessible there for delayed view. The Areena website is areena.yle.fi.

It was Areena's strong brand that was utilized when marketing an app for the Winter Olympics of 2014. Areena is available as a mobile app, simply named Areena. The Areena app has over one million downloads for Android devices, which is a remarkable penetration in a nation of 5.5 million Finns. But for the Olympics, Yle launched a new

individual app called **Sotshi Areena**, with the Finnish spelling of the neighbouring Russia's host city (Rämet, 2014).

Sotshi Areena was also a section within Areena's website. Some of the findings in this study relate to Sotshi Areena as a combination of the app and that website content.

When dealing solely with the application, it is explicitly stated in this study by using the term "Sotshi Areena app".

2.2. *Olympic Broadcasting Service and Olympic Video Player*

On the international level, the host broadcaster of the Olympic Games is the Olympic Broadcasting Services (OBS). It was founded by the International Olympic Committee in 2001 to deliver unbiased pictures and sounds of all Olympic Games worldwide, and to develop a consistent approach across Olympic operations and optimize resources to improve the efficiency of the broadcast operation. (OBS, 2014.)

For Sochi 2014, OBS brought forth an innovation called the Olympic Video Player (OVP). It was this technology that Yle utilized in its Sotshi Areena services. OVP was available in 95 countries and provided data, live streams,

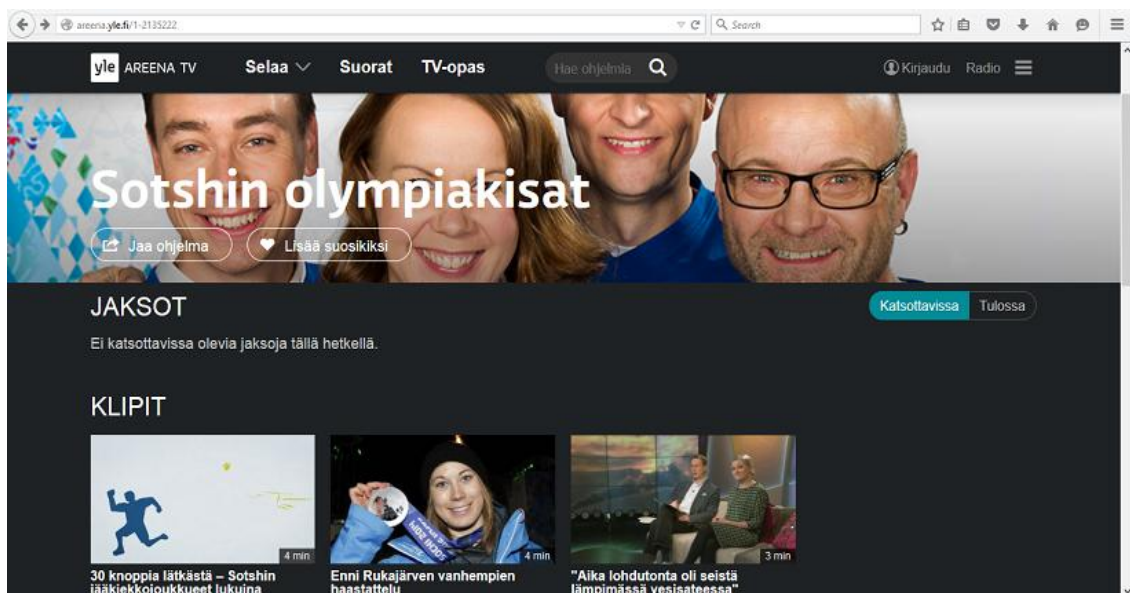


Figure 3. Sotshi Areena for tabletop browsers existed within the Areena website, which is a well-known brand among Finnish consumers.

on-demand video and a news channel. Olympic Video Player is a white-label product; produced by one company and rebranded by its partners to seem unique in the partner company's market area (OBS, 2015).

Thus, within the Olympic organization and the Olympic rights holders' paradigm it is known that the application is the OBS-founded OVP. For a national broadcaster's audience it is marketed as something more specialized; in this case as a Sotshi Areena for the Finnish people.

Yle was the only European provider of OVP. The other 94 countries experimenting with OVP were African, Caribbean and Arabic completed with limited access in Russia's Sochi. It is safe to say that Finland was the only OVP nation where the Winter Olympic Games gain remarkable penetration in broadcast audiences.

3. Literature review

3.1. Delegation of Olympic Broadcasting

“The Olympic Games are a communication phenomenon that is initially produced in a city, but then reproduced in multiple places throughout the world.” (Nicholson, 2007, pp. xvi.)

There have been many changes the first modern Olympic Games in Athens 1896 - with just 12 journalists - to London 2012, where the Olympics which were projected to be seen by 3.6 billion viewers for at least one minute. At the time of the Athens Games 1896 and for several following Olympics, interest in the games was purely informative. Television's appearance is considered the major turning point, where – as researchers Llinés and Bélen Moreno (1998) describe – "it was clear that the Olympic Games, besides being an interesting event from a news point of view, had huge potential as mass entertainment" (p. 21).

"The modern Olympic Games and the audiovisual media have had a very close relationship throughout their history. On the one hand, the restoration of the Olympic Games at the end of the last century coincided with the advent of movies. This means that moving pictures have been available at practically all the games." (Llinés & Bélen Moreno, 1998, p. 15.)

Berlin 1936 were the first Olympics covered on television. Television broadcasting began with closed circuit live coverage of the Games with very limited reception: the live footage could be only seen in 21 public auditoriums in Germany (Guttman, 1992, pp. 70). By Rome 1960 – the scene of the first continuous live broadcast of the Olympics – as many as 102 hours of live television were broadcast, and a large chunk of this was viewable live in 18 European countries.

Twelve years later the Olympic broadcasting reached all the five continents as the world watched the Munich Games 1972. The next Games in Montreal 1976 finally had all the events covered on television (Llines & Bélen Moreno, 1998).

The growing audience of the Olympics and the nature of the television narrative has led to debate concerning the shift from information value to entertainment value. This debate culminated at the Melbourne Games 1956. International broadcasters were then asked to pay for broadcasting rights, so that they would acquire access to the entertaining content of the prestigious athletic festival. From the broadcasters' point of view the horizon was completely different; they felt they need not pay for pictures of the Games, because they were above all "news", and as news an entity of respect without a financial cost (Guttman, 1992). The squabble over the broadcasting rights led to boycotts as television and newsreel organizations of Great Britain, the United States, Canada, Europe and Australia itself stayed out (Llines & Bélen Moreno, 1998).

By the next Olympics of Rome 1960, the tensions had cooled down and the idea of a charge for the broadcasting rights was more acceptable. Today, the International Olympic Committee gains most of its revenue from these rights, while television companies consider the Olympic Games a significantly major event to possess the rights of, if not the largest of all.

Each country lives the Olympics differently and this element swiftly became clear to the needs of national broadcasters. It was exactly for this reason that the Rome Games in 1960 introduced a television pool system that facilitated the individual tasks of foreign networks. Companies like the BBC, NHK or CBS were able to use their own video recording to customize coverage for British, Japanese and American audiences respectively (Llinés & Bélen Moreno,1998).

The importance of the participation of the television audience is explicitly stated in the official Olympic code: the current guideline of the International Olympic Committee states the maximization of spectator participation in the Games (IOC, 2013). Thus the IOC is careful to grant broadcast rights to public broadcast companies rather than those who would air the events on pay-TV. Nevertheless, this rule of thumb may be neglected in cases where the public broadcaster is overwhelmed by the price tag of the rights. In

Sweden, Sochi Winter Games 2014 were the first Olympics aired on a pay channel (SVD, 2013).

3.2. Yle's role as Olympic broadcaster

Finland was very interested in covering the Olympics in the radio from very early on, but understood relatively slowly the entertainment value of television. In the radio-dominated era of the 1930s, Finland sent six officers to report the Berlin Olympics. Only the United States sent more people (Virtapohja, 1998).

When Helsinki hosted the Summer Olympics 1962, the Games not even televised in Finland. The two previous Games of Berlin 1936 and London 1948 had been broadcast to the public mainly in the area of the host city. This is not the case in Helsinki: Finland did not have yet started its public television service, and there were no international television links to other parts of Europe. No live television coverage was thus available in the Helsinki Games (Rennen, 2007).

It was four years later when a notable businessman Kalevi Piha publicly lashed at the nation's slow progress television-wise. In Salmi, Piha argues that "Finland is amongst the only countries with Albania and Portugal, that at the moment experiments with television on an amateur level" (1992, p. 35). The view of the Finnish Broadcasting Company at the time was, according to the Chief Einar Sundström, that it is best to "hurry calmly" and "let the more wealthy countries pay for the costly mistakes yet to be made in the field of television" (Salmi, 1992, p. 35).

But soon was the time for public television broadcast in Finland, that quickly adapted to the taste of sports. The first live broadcast took place in 1958 and was the beloved track and field Games between rival neighbouring countries, Finland and Sweden, held since 1925 and still organized annually (Pänkäläinen, 1998). The first Olympics on Finnish Television were in Rome 1960. The Games also mark the start of sports as television entertainment in Finland.

Spectators of local games evolved to an audience of top athletic events and moved from watching events at the stadium benches to the home television set (Huippu-urheilutyöryhmän muistio, 2004). It is of interest to compare 'the Home Games' in Helsinki 62 years ago and the latest Olympic Games in Sochi 2014. The amount of broadcast content hours from Helsinki 1952 to Sochi 2014 grew from 640 to over 1,000

(Yle Urheilu, 2014). One might assume the growth would be more significant in numbers, as there are so many more disciplines in the Games and so many more channels of broadcasting in use; while Helsinki Games were only available to the Finnish audience via radio, the Sochi Games were also aired on three different television channels operated by the Finnish Broadcasting Company. There is one key factor to take into account here: The Helsinki Games took place on home turf and were thus respected with hours and hours of special radio content well ahead of the Games actually beginning (Wickström, 2002). Curiously, the Finnish Broadcasting Company aired even fewer hours of the London Summer Olympics 2012 than of the Helsinki Games more than half a century ago. The 2014 Sochi Olympic Winter Games produced over double the hours than London 2012 on Finnish public television and radio, despite of having just a third of the amount of events. That is, of course, because of the love of Nordic sports amongst the Finns.

While some of the most valued sports content has been handed over to the Finnish pay-TV companies, the Olympic Games remain in the government-owned Yle's realm. The Ministry of Communications listed all sports events of major national importance in 2007 and among the seven events, the Olympic Games are mentioned first and foremost. Although the World Championships of Ice Hockey are mentioned as well, Yle decided to give these broadcasts away as too costly. Ice Hockey Championships have been shown on a Finnish commercial channel and partly on pay-TV since 2012.

Yle has always had the sole broadcasting rights to the Olympics in Finland. Many governments consider national or international sports events as such a major factor of unification that they want to secure broadcasting them; to spend public money to buy the rights. In words of researcher Matthew Nicholson, governments regard sports events as "merit goods":

"Governments intervene where merit goods are concerned to ensure that a wide public distribution of the product is achieved, in order to maximize the number of people able to receive a social benefit from the product or activity." (Nicholson, 2007, pp. 79.)

3.3. Live competition as television entity

For most traditional television content genres, the television set – understood as a mass medium offering programs that reached a broad audience and spoke to the culture as a whole – is no longer the norm (Lotz, 2014). Media researcher Amanda D. Lotz categorizes television genres in the so-called post-network era into three individual groups. *Prized content* is completely a post-network phenomenon – an opportunity to experience television independently from externally determined flow. This has been made possible by leaping technology – mostly the quality of current broadband-delivered video. For example, choosing to watch *Arrested Development* on Netflix on a Wednesday morning fractures the monolithic television experience – it is sought out beyond “what is on” television. Another of Lotz's categories is *linear content*; watching motivated by companionship or distraction but with less intention than the prized content.

The third entity is *live competition*. Even though singing and other talent shows have become a remarkable part of this category, the bulk of it is formed by sports. As with prized content, TV sport is sought-after content that audiences place a high value on. However, this category is distinctively and exceptionally time sensitive for its full enjoyment (Lotz, 2014).

Audiences are moving away from television's linear origins, with the exception of live sports.

“Live sports events are both regular and planned. Despite this regularity, it is often impossible to schedule one's life around events, and the nature of contests gives live viewing salience regardless of tools that now allow viewers the convenience of recording and viewing these events at a later time.” (Lotz, 2014, pp. 82).

3.4 *The app age*

Although the literature is plentiful regarding post-network era television and televised sports, it focuses heavily on the tabletop experience of video streamers. Truly portable, mobile consumption of televised sports is fairly new to research. However, the popular term of “viewers” seems to fully apply to this new breed of sports audiences.

Originally worded by Dan Harries, “viewser” is a popular contraction of the terms “viewer” and “user” that has gained circulation in relation to interactive media (Zanker, 2011).

The 2010 Winter Olympic Games in Vancouver were widely available for tabletop streaming, but mobile audiences are not even mentioned in the official broadcast report (IOC, 2010). Elsewhere in the sports world, mainly in the United States, early mobile developments caught the eye of media research. Victoria E. Johnson (2010) writes that

“while watching sport television *on* television, the fan can feel part of broad community, and with the mobile technology in hand he is simultaneously addressed as an *individual* with specifically tailored a la carte requests.” (Johnson, 2010, pp. 131.)

The time for mobile consumption was ripe for the summer Olympics of London in 2012. They have been called the app Olympics, as various applications were developed for mobile devices in different media institutions. It is easy to see why the institutions made these costly technological investments for a major sports event. In the past, sports viewing has been a significant driver for consumers to experiment new technology: In surveys, audiences have timed their television set purchases to upcoming sports mega events, as image quality is distinctive for live sports in comparison to Lotz's prized content and linear viewing (Lotz, 2014; Johnson, 2010).

The big pioneers in 2012 were NBC, Reuters and the London Olympic Games organization committee with their iPad applications. Four wide-spread apps were analyzed by Wichita State University's Software Usability Research Laboratory (SURL): NBC Olympics, NBC Live Extra, Reuters, and the London 2012 Results. SURL used and evaluated the Olympic Apps by keeping a daily log of usage time for each of them and corresponding thoughts on likes and dislikes. In a post-survey,

perceptions of “viewers” were gathered on five dimensions; aesthetics, multipurpose content, execution and error, ease of use, and usefulness.

Although the overall best app of the summer Olympics was deemed by SURL to be the London 2012 Results, however it lost to NBC Live Extra in the usefulness category "primarily due to [the latter's] real-time coverage of all events" (Phan et al., 2012). It was the only app in SURL's review with such a feature. "Extra app was especially useful for watching the more obscure sports that television viewers would rarely see on television (e.g., trials for sports like handball and pentathlon)" (Phan et al., 2012). SURL saw Live Extra's flaws in technical difficulties and annoying, repeated advertisements.

Ultimately SURL suggests that future sporting event apps pay attention first of all to the main navigation, so it stands out from the rest of the content and the app is user-friendly from the very first exposure. "First impressions may dictate whether the app is used again" (Phan et al., 2012). The review also points out that the medal results are "extremely important" to the Olympic Games and thus should be included in an Olympic app, portrayed flexibly by country, athlete and by sport.

3.5. The applications for Sochi 2014

The above suggestions were most probably the major lessons that broadcasters had taken into account when preparing for the Winter Olympics of 2014. According to the IOC, rights holders delivered content on a total of 75 apps. The Olympic Broadcasting Services (OBS) delivered the Olympic Video Player (OVP) for both live streaming and delayed view, with Games statistics.

Finland's Yle utilised OBS's OVP app in its Sotshi Areena. The Finnish app contributed significantly to the 37.5 million video views recorded in a nation of 5.5 million people. In comparison, populous Germany generated approximately 20 million video views online. The United Kingdom's broadcaster BBC recorded 20 million video views as well. Four years earlier in Vancouver, the numbers were shy of two million for Finland and 11 million for UK. The video views include app usage and streaming via a website either with a mobile device or with a desktop or laptop computer. The IOC reports interference with a whopping 7.200 illegal streaming services during the Winter Olympics of 2014 (IOC, 2014).

It is not necessarily surprising that the digital consumption of the Olympics grew rapidly in Finland once the technical difficulties in app development were overcome. Finland has always been a winter sports nation. On top of that, Finland has been proud of its high-technology industry.

4. Inside Sotshi Areena

4.1. Content

On top of live streams and on-demand events, Sotshi Areena offered video clips with highlights of the Olympic Games. The live stream could be used flexibly: a user could begin with any time stamp even when the event was still running. If a user wanted to replay any moment of live stream, he/she was able to (Katso kaikki Sotshin kisalähetykset suorina, 2014).

Sotshi Areena was a free of charge service. Its geographical limitations were the borders of Finland – as Yle is the Finnish Olympic rights holder, the app was disabled to work abroad. The app's navigation was designed to clearly illustrate which content was live and which was recorded. All live broadcasts were divided to the left-hand section in the main navigation, including the events happening right then and the events coming up later that day. All past events and video clips were accessible through links on the right-hand section of the main navigation, under each discipline.

When viewing a previously recorded event, a user was able to find a certain athlete's performance by finding his/her national flag on the time slider. These flags were also used to stamp goals in ice hockey matches. This feature, as later explained, resulted to more uproar than applause in customer feedback.

4.2. Promotion and Marketing

The unprecedented Olympic app was widely promoted in Yle's televised sports news, in radio broadcasts and on the website Yle.fi/urheiluu. When the app was released on 31st of January 2014, an extremely detailed user manual was posted on the website to help smartphone newcomers and others with the navigation. A week later when the opening ceremony of the Olympic Games was held, the app had already been downloaded 65.000 times. This early success was mentioned in the news throughout the Ylesphere in the company's television, radio and website news, which in turn accelerated public interest toward Sotshi Areena (Ylen Sotshi Areena kasvattaa suosiotaan, 2014; Kokko & Rämets, 2014).

When promoting the application, many of its versatile benefits were highlighted. Sotshi Areena streamed over 700 hours of live content – all of the television material available.

Most of it had both Finnish and Swedish commentary. The viewers could also opt for English commentary or to silence any commentary. Also, the user could delay watching of a live feed and start from the beginning whenever it best suited. Top events were offered as journalistically edited video clips.

For many, one of the main perks of downloading the app might have been the full timetable of the Winter Olympics. The app also included live updates of the results.

Sotshi Areena was offered on iOS, Android and Windows Phone 8 platforms. Although globally the Windows platform has a miniscule market share, in 2014 the Nokia Windows phones had a 55 percent market share in Finnish business handsets (Gartner, 2014). Thus it made sense for a public service to hand out the application to all significant user platforms including Nokia Windows (currently Microsoft Windows.).

4.3. Response in numbers

As Sotshi Areena was a service specifically ordered from Olympic Broadcasting Service, its usage data has been measured in a different way from Yle's video service Areena. Thus, it is not fully reliable to compare numbers of views of viewers between the app and the video service website.

From 31st January to 23rd February, the Sotshi Areena app was downloaded 423.000 times. The Android version had 190.000 downloads, the iOS version 145.000 downloads, and the Windows Phone version 83.000 downloads (Kokko & Rämets, 2014).

Sotshi Areena's videos had 38 million views. Here it must be emphasized that not all of the videos were viewed inside the app . Sotshi Areena was also a website accessible via desktop, which has its share of these views. In spring 2014, over a third of all usage of Yle.fi content concerned either smartphones or tablets (Kokko & Rämets, 2014).

Nevertheless, the combined time of views was 1,4 million hours. The most-watched single event was men's ice hockey match between Finland and Austria – the first game of the Finnish team. That video was viewed 900.000 times (Kokko & Rämets, 2014).

The Winter Olympics of 2014 broke records on mobile devices and desktops. During the Olympics, Yle.fi had a week of over five million unique visitors. That had never

happened before. The contents of the sports section Yle.fi/urheilu and video service Areena accounted for over two million unique visitors.

Especially, web traffic during the afternoon hours multiplied after the Olympic Games began. During the Finnish team's ice hockey matches, live streams were viewed simultaneously over 100.000 times. The unexpected popularity of the live streams even knocked out networks in workplaces. Municipalities pleaded that bandwidths were preserved and employees rather watched the Olympics on the televisions of their offices.

By far, the busiest day was 19th February 2014, a Wednesday. On that day team Finland had two major television moments. Iivo Niskanen and Sami Jauhojärvi won Finland's sole gold medals in the cross-country skiing team sprint. Later in the day the men's ice hockey team confronted Russia in the semi-final, but lost, missing the chance for gold.

Compared to the London Summer Olympics of 2012, daily usage of Yle sports content grew remarkably. Its web traffic doubled from 2012 Olympics to 2014 Olympics. On average, Yle.fi/urheilu had daily 342.000 unique visitors during the whole Winter Olympics. During London that number was 169.000, when taking into account only the busiest timeframe from 3rd to 12th August, which held all the athletics events. That is growth of 102 percent (Kokko & Rämetsä, 2014).

In 2014, from 1st January until 5th February - the day before opening ceremony - Yle.fi/urheilu gathered daily 118.000 unique visitors on average. This was nearly tripled by the Olympics.

On average, a visitor spent 11 minutes browsing content related to the Olympics. That marks 15 percent growth compared to other content on the sports section Yle.fi/urheilu.

On Friday 21st February, Finland's men's ice hockey team played for bronze against Sweden. The match took place early in the afternoon. Combining Yle.fi/urheilu and video service Areena, visits to those sites between 2 and 3 p.m. grew five-fold compared to an average non-Olympic day.

Mobile devices have changed the way the public follows Olympics. The London Summer Olympics had as many desktop visits to Yle.fi/urheilu as there were visits with mobile devices during the Winter Olympics two years later.

5. Methodology

Both the quantitative and the qualitative aspects of the Sotshi Arena survey are of interest in this case study. As the material covered here is quite limited in scope, it is reasonable to analyze it with a mixed methods approach. The nature of the data with its numeric and open-ended responses also justifies this approach (Moore & McCabe, 2006).

The open-ended responses of the survey are analyzed using content analysis (Krippendorff, 2012). Content analysis allows the researcher to draw meaning from the literally formed responses in the material, and thus helps to answer the research question of how exactly Sotshi Arena was received in its audience. With the tools of content analysis, the open-ended responses were gathered into sub-groups relevant to the research question. This allowed the material to be present in a way where extraneous feedback given in the survey can be discarded as irrelevant to the research question. For example, this study does not research audience contempt with Olympic reporters, although a significant part of the respondents gave feedback straight to them by using the survey form.

Alasuutari (1994) observes that qualitative and quantitative research methods can be seen as a continuum in a certain regard, not as opposites that shut the other out of analysis. Qualitative and quantitative analysis are different tools to produce observations that make sense of the research material. If there is a very limited amount of participants to be studied, it would be best to focus in the qualitative methods, but with larger amounts – such as thousands of survey responses – clear quantitative connections are more suitable clues to build research conclusions. The qualitatively researched material is not only used as entities that are absolutely stated in the material. Throughout the process, this material is combed through in the search for meanings and ultimately, the "resolve of the riddle" (Alasuutari, 1994).

Content analysis is a quantitatively oriented technique by which standardized measurements are applied to metrically defined units and these are used to characterize and compare documents. Its use has been popular in cultural studies and mass communications research. Manning and Cullum-Swan (1994) argue that a text can always be rendered in another code – another voice can be heard, a new viewpoint

illuminated. Content analysis has developed a systematic evaluative technique to sort through documentaries analytically.

Documents are products of a system within which they are defined and made meaningful. The critic's task is to place the writing, the text, and its readings into alternative contexts or fields, or to recode the text (Manning & Cullum-Swan, 1994). A finding in content analysis may be convincingly related to more abstract values (Fiske, 1994).

With the data collected, the researcher seeks indices of saturation, such as repetition in the information obtained and confirmation of previously collected data. He or she looks for negative cases to enrich the emergent model and to explain all variations and diverse patterns. Adequacy is attained when sufficient data have been collected that saturation occurs and variation is both accounted for and understood (Morse, 1994).

5.1. Statistical Analysis

The respondents were organized into groups based on demographic variables and whether or not they were Sotshi Areena users. The given grades were organized and their means and standard deviations examined. The significance of grade variation between respondent groups was analyzed with independent-samples t-tests.

The difference is highly significant if p value is 0.001 or less. The difference can also be significant ($p=0.01$ or greater than 0.001), almost significant ($p=0.05$ or greater than 0.01) or statistically does not reach significance ($p>0.1$ or greater than 0.05) (Heikkilä, 2008).

5.2. Data justification

There are several channels of feedback to choose from when analyzing the audience experience of Sochi 2014 delivered by Yle on mobile devices. Possibly the most fruitful would be Yle's feedback e-mail accounts. Unfortunately for research but fortunately for swift correctional reactions, there are at least three different accounts with thousands and thousands of e-mails to sort through. On top of the general feedback account – gathering everything from drama series' plot sentiments to airing times frustrations – there is the individual feedback account of Yle Sports. Furthermore, Yle News receives relatively numerous feedback e-mails concerning Yle Sports. Covering all these e-mail

responses and finding the ones referring to Sotshi Areena would be cumbersome and time-consuming for a study like this.

Another approach might have been the user reviews on different application marketplaces such as Google Play and App Store. This would allow to completely focus on Olympic feedback referring to mobile services and specifically on the application versions of Sotshi Areena. The downside is that converting these reviews from Google Play to spreadsheet for analysis would be excruciatingly cumbersome – there are over 3.000 reviews. Curiously, in the App Store, at least currently in 2015, there are no written reviews available. Overall, the application reviews in marketplaces tend to be very short (e.g. “pretty good” or “quite a lag with my phone”).

The strength of the post-survey conducted by Yle lies in its format. All the data has been collected automatically into a spreadsheet for simple analysis. The post-survey material is ideal in mirroring the audience response of mobile Olympic experience to the more traditional ways of following the Games. The questionnaire focuses on numeral feedback. As such, it persuades respondents to top their feedback off with written elaborations. Thus Yle has received quite lengthy responses, and as it turns out, they frequently revolve around Sotshi Areena. The amount of responses indicates that a saturation point will be achieved to make solid claims about the audience response.

There are some limitations to a study administered online, mirroring satisfaction between experiences online and experiences with other media. Findings may suggest stronger reactions – very low or very high grades – for online media, as an online execution of the survey might persuade the internet- and mobile-minded more than consumers of traditional media. Also, web surveys suffer from non-response bias in the same way as postal surveys (Hill & Alexander, 2006).

5.3. Post-survey of Yle's Olympic performance

Yle Urheilu queried how the audience felt about the company's performance in delivering the Olympics with an online post-survey. It was posted on Yle.fi/urheilu on 22nd January 2014, a day before the closing ceremony. Most of the 4.773 responses by the audience were given within a week. The survey form is still currently open in the Olympics sub-section in Yle.fi/urheilu for whoever happens to stumble upon it between Olympic Games' high seasons. Therefore only a small fraction, 42 responses, has been registered between March 2014 and January 2015.

The survey has two demographic questions: the sex and the age group of the respondent, from 9–15 to 65 and over. The respondent could tick as many answers as suitable in a multiple choice question regarding what media he/she used to follow the Olympics; television; radio; Sotshi Arena; Yle.fi/urheilu website; Facebook and/or Twitter; broadcast tele-text service; or did not follow the Olympics.

Another multiple choice question concerned the respondent's access to information about broadcast times – did s/he receive the best information from television broadcasts; teletext service; Yle.fi/urheilu's timetable pages, social media like Facebook and Twitter; exterior television timetable websites; newspapers; or did not receive sufficient information about broadcast times.

Most of the questions were about the respondent's grades for Yle. The respondent was asked to give an overall grade to the whole production of the Winter Olympics intermediated by television, radio, internet, teletext and social media. The lowest grade option was 1 and the highest 10. Grades for six individual approaches were asked: television; radio; Yle.fi/urheilu; teletext; Sotshi Arena; and social media. Two more grades were asked specifically for features on the website: Kisaopas, and LIVE articles (written reports of ongoing events updated minute by minute).

Another question about social media concerned how important Yle Urheilu's presence in Facebook, Twitter and Instagram is to the respondent, on scale from 1 to 10. The only open-ended question gathered respondents' feelings about the pros and cons of Yle's Olympic production.

In this study, emphasis is mainly on the overall grades, grades for Sotshi Arena, grades for television broadcasts and open-ended feedback.

6. Results

Of the 3241 respondents who identified themselves as Sotshi Areena users, nearly all also watched traditional television broadcasts (N = 3058). That leaves 183 respondents who used Sotshi Areena and did not tune in with television. Sotshi Areena was very rarely the only medium that respondents relied on: just three dozen mentioned the service as the only means of following the Olympic Games (see Table 1).

Table 1. Frequencies of Sotshi Areena usage

Respondents	Frequency
ALL	4773
Sotshi Areena users	3241
SA users who also watched television broadcasts	3058
SA users who did not watch television broadcasts	183
Sotshi Areena as the only means of following the Games	33

First, the most crucial category grades are presented with all respondents (N=4773).

Table 2. Grade frequencies and percentages for Yle production of the Winter Olympics, OVERALL

Grade	N	%
10	1575	33.0
9	1858	38.9
8	810	17.0
7	241	5.0
6-1	238	6.1
mean: 8.7707 <u>SD: 1.48</u>		
<u>median: 9</u>		

Table 3. Grade frequencies and percentages for Yle production of the Winter Olympics, TV BROADCASTS

Grade	N	%
10	1523	31.9
9	1794	37.6
8	848	17.8
7	247	5.2
6-1	285	7.5
mean: 8.6871 <u>SD: 1.55</u>		
<u>median: 9</u>		

Table 4. Grade frequencies and percentages for Sotshi Areena Mobile App and Sotshi Areena Website

Grade	N	%
10	1239	26.0
9	1233	5.8
8	874	18.3
7	460	9.6
6-1	667	20.3
mean: 7.9325 <u>SD: 2.16</u>		
<u>median: 9</u>		

For Sotshi Areena, top grades of 9 and 10 were not as numerous as with the overall grades or television grades. On the contrary, Sotshi Areena was graded with a number between 1 and 6 significantly more often than Yle's overall or television performance.

However, it would seem that a television viewer of the Olympics unfamiliar with the new mobile app would give a "neutral" grade of 5 or "not interested" grade of 1 to the new medium. Thus, the data may be filtered to take into account only those respondents who indicated they had used Sotshi Areena to follow the Olympics. There were 3,241 respondents who had pointed out their usage of Sotshi Areena as one of the media channels they utilized. Amongst those respondents (N = 3,241), Sotshi Areena's grades are presented in Table 5.

Table 5. Frequencies and percentages of the Sotshi Arena Mobile App and Sotshi Arena Website grades SOTSHI AREENA USERS ONLY

Grade	N	%
10	993	30.6
9	937	28.9
8	623	19.2
7	329	10.2
6-1	359	11.1
mean: 8.337 <u>SD: 1.83</u>		
<u>median: 9</u>		

Now the grades for Sotshi Arena are more generous. Nevertheless, when studying these Sotshi Arena users, they also gave more generous grades to the television broadcasts as well (see Table 6). Their mean grade for television broadcasts was 8.856. (Of all respondents, the mean was 8.687 as in Table 3.) In addition, grades of 9 and 10 were more numerous: 73.8 percent gave these high scores for television broadcasts. What seems to be of most interest is how Sotshi Arena users (N = 3241) graded Yle's overall performance.

Table 6. Frequencies and percentages of TV broadcasts grades SOTSHI AREENA USERS ONLY

Grade	N	%
10	1 080	33.3
9	1 312	40.5
8	544	16.8
7	139	4.3
6-1	166	5.1
mean: 8.856 <u>SD: 1.32</u>		
<u>median: 9</u>		

Table 7. Grade frequencies and percentages for Yle production of the Winter Olympics, OVERALL; SOTSHI AREENA USERS ONLY

Grade	N	%
10	1130	34.9
9	1350	41.7
8	506	15.6
7	144	4.4
6-1	111	3.4
mean: 8.944 <u>SD: 1.23</u>		
<u>median: 9</u>		

The grades are somewhat better than when studying all respondents. More light on the matter may be shed exploring the responses of those who did not say they used Sotshi Areena to follow the Olympics (N = 1532). Their overall grades for Yle are presented in Table 8.

Table 8. grade Frequencies and percentages for Yle production of the Winter Olympics, OVERALL; NON-SOTSHI AREENA USERS ONLY

Grade	N	%
10	444	29.0
9	508	33.2
8	304	19.9
7	97	6.3
6-1	179	11.7
mean: 8.405 <u>SD: 1,85</u>		
<u>median: 9</u>		

Here an obvious difference may be observed. The medium grade is roughly 0.5 lower than with Sotshi Arena users. Low scores between 1 and 6 well exceed ten percent. High grades of 9 and 10 are still the most common, but visibly not as common as with Sotshi Arena users.

The independent-samples t-test was used to compare Sotshi Arena users' vs. non-users' given mean grade for Yle's overall performance (see Table 7 and 8). The difference was of high significance, $t(4771) = 11.92, p < .0001$. Moreover, the percentages of satisfaction grades for (a) Yle production of the Winter Olympics, OVERALL; SOTSHI AREENA USERS ONLY (Table, 7), and (b) Yle production of the Winter Olympics, OVERALL; NON-SOTSHI AREENA USERS ONLY (Table, 8) are presented in Figure 4.

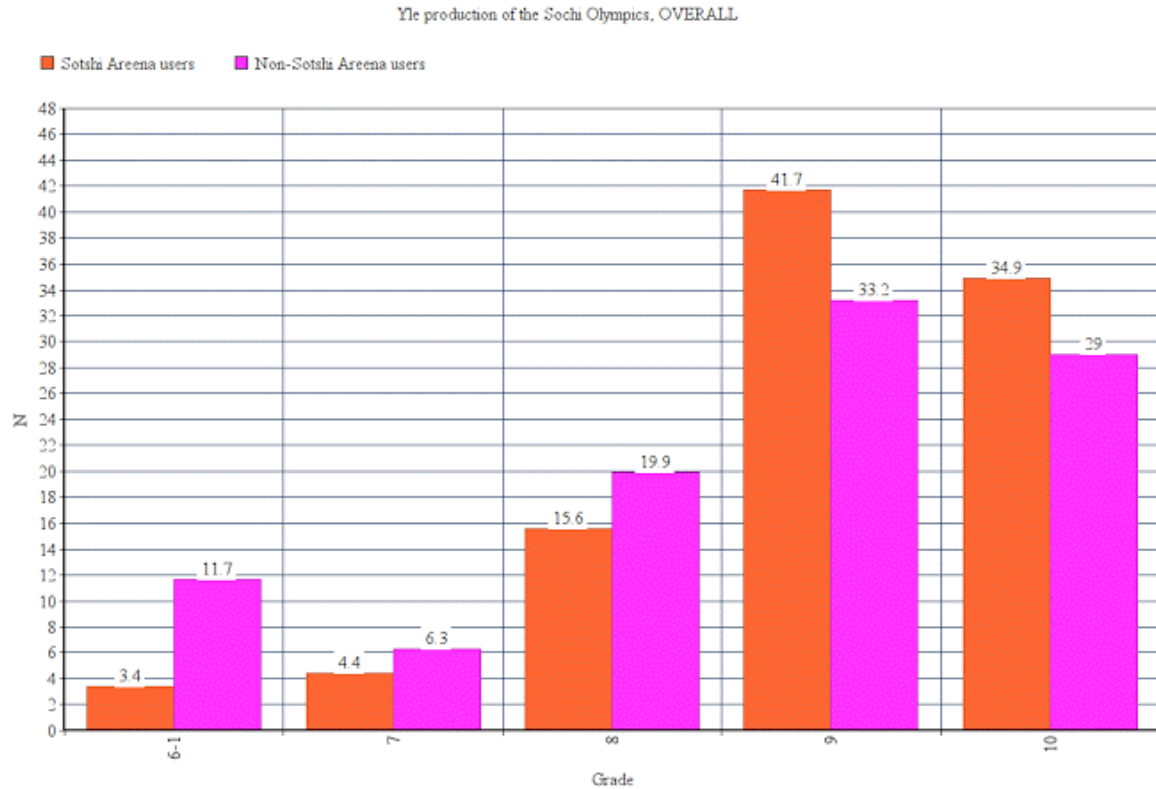


Figure 4. Satisfaction grades for Yle's overall production of the Sochi 2014 Olympic Games (%).

6.1. Demographics

Sixty-seven percent of respondents were male (N=3199) and 33.0 percent were female (N=1574) (Table 9). Among Sotshi Areena users, percentages were roughly the same: 70.1 percent were men (N=2271) and 29.9 were women (N=970). Female Sotshi Areena were more generous in their grades for the service, offering a mean of 8.69. Male users' mean grade was 8.26. The independent-samples t-test was used to compare the mean grades of Sotshi Areena user men and women (see Table 11). Once again it suggests high statistical significance, $t(3239) = 9.15, p < .0001$.

Table 9. Gender of all respondents

Sex	N	%
Men	3199	67.0
Women	1574	33.0
<u>Total</u>	<u>4773</u>	<u>100</u>

Table 10. Age of all respondents

Age	N	%
15–24	796	16.7
25–35	976	20.4
35–50	1217	25.5
50–65	1174	24.6
65+	610	12.8
<u>Total</u>	<u>4773</u>	<u>100</u>

Table 11. Sotshi Areena users by gender

Sex	N	%	Mean grade, Sotshi Areena (SD)
Men	2271	70.1	8.262 (1.90)
Women	970	29.9	8.689 (1.61)
<u>Total</u>	<u>3241</u>	<u>100</u>	<u>8.337 (1.83)</u>

Table 12. Sotshi Areena users by age

Age	N	%	Mean grade, Sotshi Areena (SD)
15–24	679	21.0	8.130 (1.88)
25–35	794	24.6	8.236 (1.82)
35–50	822	25.3	8.550 (1.78)
50–65	614	18.9	8.607 (1.78)
65+	332	10.2	8.574 (1.67)
<u>Total</u>	<u>3241</u>	<u>100</u>	<u>8.337 (1.83)</u>

By age groups, it is seen that younger respondents were not as impressed by Sotshi Areena as were the older ones (see Tables 10 and 12). This is not the case throughout different grading questionnaires in the survey. When compared to Sotshi Areena user's grades for television performance, those means are higher but do not elevate gradually towards higher age groups as with Sotshi Areena grades. The most satisfied television viewers were the youngest and the oldest age groups, while the 50–65-year-olds were somewhat more hesitant. Also, age groups' mean grades vary from 8.7 to 9.0 while there is more variance with Sotshi Areena from 8.1 to 8.6.

6.2. Reviewing the open-ended feedback of Sotshi Areena users

Of the 3.241 respondents who used Sotshi Areena, most – 2.155 responses – included open-ended feedback. Often the respondents had positive or negative evaluations of Yle staff. Such were comments about the quality of the TV and radio personnel doing the Games' live commentary, hosting studio segments and interviewing athletes. Often feedback was given about the (wrong) choice of events presented on television. A huge bulk of the feedback is general thank-you's for Yle's broadcasting efforts. Most of the thousands of responses had to do with one of these three areas.

Sotshi Areena, "live web streaming" or something similar was mentioned in hundreds of feedbacks. Most of the time it is impossible to be certain which dimension of the service an individual response is referring to. One might be talking about the mobile application, the mobile web site, the website for tabletop browsing, or several of these at the same time. It would seem narrow to only take into account those responses that deal strictly with the Sotshi Areena app – on the other hand, it would seem quite stretched to include all responses dealing with Sotshi Areena with no certainty that they are about a mobile platform.

To narrow it more precisely to Sotshi Arena mobile services, only the feedback that clearly referred to the mobile experience was picked out. There were 145 open-ended responses that fulfilled this condition.

Examining these 145 responses it is obvious that certain issues with Sotshi Arena were frequently mentioned. The responses may be categorized into seven categories (see Figure 5).

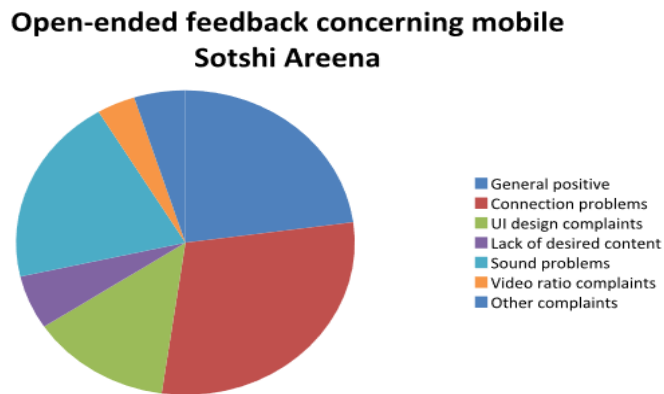


Figure 5. Most commonly the responses considering Sotshi Arena regarded connection problems, although general positive feedback was the second most common message mediated in the open feedback.

1. General positive feedback; 56 respondents

"Everything worked magnificently and I am very happy about the mobile application that turned out to be very practical! - - - You could follow events that you yourself like."

"A big thank you for Sotshi Arena! Magnificent application!"

2. Connection problems; 72 respondents

"Sotshi Arena did not always work without flaws on mobile (there is nothing wrong with my internet connection)"

"The broadcasts had lag, the video quality differed from bad to worse and the picture sometimes turned green. Why can't the Games be broadcast in 1080HD via internet?"

3. Complaints regarding user interface design; 33 respondents

"Sotshi Arena was confusing to me. It was hard to find past events. I did not get what the symbols on the front page meant. Timetable worked only upright, with a 7" screen I longed for horizontal. I ended up using timetables and medal count in the Internet."

"A small minus for Yle Sotshi Arena, a somewhat confusing application. I preferred to watch live broadcasts from Yle Arena application because the player is more articulate."

4. Lack of sought-after content or feature; 14 respondents

“The description of Sotshi Arena app did not state clearly enough that ALL videos are geoblocked, this baffled users (see reviews).”

“There should be more recorded clips to watch with mobile.”

5. Sound problems; 49 respondents

“You could not always hear the commentary on Sotshi Arena even though it was provided. That’s my only minus.”

“Sotshi Arena was a very good idea and sometimes it even worked quite well. Most of the time though the picture and the sound had lag, the commentary was inaudible.”

6. Complaints about video aspect ratio changing while watching; 9 respondents

“Sotshi Arena’s aspect ratio kept bouncing back and forth. Technology bad. Content good.”

“Sotshi Arena was otherwise magnificent, but at least in Android version 4.1.2 the video aspect ratio changed constantly. In the future there could be a setting option for aspect ratio.”

7. Other or general critique; 12 respondents

”Sotshi Areena is a big leap towards where content should be delivered. Of course there were minor bugs and there is room for improvement, but the direction is right.”

“That Yle Sotshi 2014 app for iPhone could have been made to better suit other iOS systems such as iOS 5 or 6.”

Roughly half of the written feedback included complaints regarding the connection. Problems had occurred as twitchy and pixelated video. Several respondents reported that randomly the video would jump in time. During peak hours it was difficult for some respondents to get the video rolling altogether.

7. Discussion

In chapter 3, the needs of different broadcast eras concerning a mega event such as the Olympic Games were discussed. For decades, elite sports have been experienced by nations through a gathering of friends and families, facilitated by a television screen. Thus, the Olympic Games have become a television spectacle that has a remarkable social function. However – progressively but swiftly – the consumption is moving towards more individualistic watching, as consumers who otherwise could not take part because of their errands and/or location are now able to view the Olympic Games on portable devices.

In Yle's satisfaction survey, none of the individual media such as television or web content were granted by the respondents a medium grade as high as was given to Yle's overall performance in the Winter Olympics. Of the individual media, television broadcasts got the highest grades. Also the internet effort got a medium grade above 8. Sotshi Arena's medium grade was the third highest, shy of 8, beating Yle's performance on the radio, teletext service and social media in this order.

But as Lotz (2014) put it in her research, television is losing its role as a mass medium speaking to the culture as a whole. Mirroring this thought to the feedback of Sotshi Arena – the service allowing Olympic experiences for the individual watcher – the Games seem to gather the normative, broad audience. Even though the service was marketed as a chance for the viewer to choose whichever sport to watch from all Olympic events beyond the traditionally televised catalogue, this option was hardly ever praised or even mentioned in the otherwise widely positive feedback.

Instead, Sotshi Arena users were explicitly grateful for the possibility to experience the Olympic Games live, as they unfolded, despite the viewers' busy lives at the workplace, university or school. As Lotz (2014) pointed out, live sports are a very distinct television entity in their own because of the exceptional time sensitivity it demands. Sotshi Arena very clearly was a solution for many to solve the problem of *when* and *where* – live, anywhere. The question of *what* to watch was not necessarily that relevant, judging by the open feedback.

These findings seem to suggest that users' freedom to choose individually the Olympic content may, at the moment, be contrary to the function that the Games have for

television audiences. For now, that function appears strongly to be the gathering of the heterogeneous audience to witness given moments of national or international sports history in the making. But, as viewing habits are changing, it is possible for even the national sports audiences to fracture. Audiences may well grow accustomed to individual sports content choices at the expense of national togetherness. We do not all watch American Idol on prime time television anymore but Netflix on Wednesday mornings; the next step may be watching Olympic mixed-team curling in solitude on a portable device and not the “self-evident” men's ice hockey final on sports pub screens.

The evolution of mobile applications and their usage is accelerating quickly. As explained in chapter 3, the landscape was significantly different during the London Olympics 2012 than it was during Sochi 2014. A variety of changes is taking place and more are expected before the Games' next edition, Rio Olympics 2016 – for example, the need to be connected to others when using a mobile application.

Social media platforms now play a major role in connecting audiences to one virtual space regardless of conventional barriers (Alshawaf & Wen 2015). It has become a rarity to come across a mobile application without Facebook, Twitter, Instagram and other social media icons that allow connecting 'outside' the app and sharing one's app experience. In the survey researched in this study, none of the respondents desired this option in 2014. This is not to be interpreted that Sochi Arena, as it was, would today meet the expectations of the current Olympic audience. More research is needed in order to find out the lessons to learn regarding social aspects of Olympic mobile applications.

The evolution of new media is discussed widely in the framework of mega events beyond the Olympic Games. In Karg and Lock (2014), the magnitude of consumer interest develops a requirement for the International Football Federation FIFA to go beyond traditional models of consumer connection and identification with the event. New media allows organizers to enhance the delivery of the event and, then, extend tournament reach around the globe, as a complementary aspect of the communications mix. For Emmons (2014), professional sporting events are, with large television viewerships, the prime research candidates for emerging new media phenomena. Certain mega events draw exceptionally large viewing audiences converging together to be a part of the excitement.

Emmons' findings in a study of live-tweeting mega events may come relevant to the development of mobile streaming applications in the sports events industry. Emmons argues that in a three-year span during which media outlets commenced and became routinized with the use of Twitter in live sports reporting, most broadcasters started their new communication by merely sharing information of an ongoing race or match. Over the years they learned the more engaging style of adding personality with opinionated and responsive tweets with recognition towards the sports fans (Emmons, 2014). If it took three years to happen on Twitter, the Rio Olympic Games of 2016 would seem to crave for a streaming application with more interactive and social dimensions than with Sotshi Arena.

8. Conclusions

This study aimed to reveal how Sotshi Areena was used and received; and which of its aspects could be seen as its best and weakest features. Previous academic studies of Olympic mobile streaming applications are not widely available. In addition, Olympic broadcasting rights' holders', particularly Finnish Yle's, road from radio commentary to mobile video streams was included to give some insight to the ever-changing demands and axioms of Olympic broadcasting.

Yle's survey's male-dominated responses may be due to the fact that more men follow the Olympics than women. Also, more men frequent sports news websites than women. According to the survey, Sotshi Areena's penetration was greater in the male audience. There was significant difference between the satisfaction grades given by men and women who used Sotshi Areena to follow the Olympic Games.

Over 85 percent of respondents in age group 15–24 used Sotshi Areena. For ages over 50 years, roughly half of the respondents watched the Olympic Games with Sotshi Areena. Younger respondents were more demanding towards Sotshi Areena than older ones. Both the age frequencies and satisfactions speak of the younger audiences' stronger habits of using new media and second screens.

The most common grades for any Yle-produced Olympic content was 9. It seems that Yle's Olympic audience was overall very pleased with the content delivered to them. The second-most common grade was the highest possible, 10. This implicates that the survey was a handy way for satisfied audience members to provide feedback after the Olympics. Media companies tend to receive amounts of negative feedback in their hotlines, e-mail accounts and internet forms. It would seem natural that when posted visually attractively to the website yle.fi/urheilu, many visitors saw it as a way to say their “thank-you”, and quite possibly would not have spoken out without this opportunity. Yle received thousands of feedback messages through its website during the Olympics, and this was probably the primary route of those displeased with the service to deliver their thoughts.

Despite of most respondents' high grades for Sotshi Areena, the service's users were more critical in reviewing it than with Yle's television broadcasts or Yle's overall performance. Several respondents, who had both used Sotshi Areena and watched

Olympic broadcasts on television, pointed out the mobile application's weaknesses in their open-ended feedback answers. However, Sotshi Areena users gave significantly higher grades to Yle's overall performance than respondents who had not used Sotshi Areena.

One conclusion is to assume that Sotshi Areena users give Yle credit for developing Sotshi Areena for the Olympics. The application might not have been perfect or without its continuous problems, but nevertheless, the Olympic audience was offered one more medium to follow their beloved Games. This effort may have lifted Yle's overall performance grade among Sotshi Areena users. This appears to echo throughout a bulk of the open-ended feedback concerning Sotshi Areena. Often the respondent quite harshly critiques a given downside of the service, but nevertheless tends to give it a high grade or add that otherwise was fond of the product, or at least of the idea behind it.

Thus it would seem that a broadcasting company should not hesitate too much whether or not they have the resources to deliver an absolutely perfect, always outstandingly performing streaming application. This is why Yle's courage to introduce the Olympic Video Player as the only European country paid off. Even when Sotshi Areena seems to have caused disappointment and frustration in some respondents, it was available and supported their following the Winter Olympic Games. In the case of Sotshi Areena, there were several disappointed users, who were more satisfied with the overall production than non-users.

Half of the open-ended feedback regarding Sotshi Areena concerned problems with internet connection. This indicates clearly that the basic need for Sotshi Areena users was to view the broadcasts while on the move. Among the general positive feedback, few respondents worded their appraisal for the freedom to choose which events they wanted to watch. Based on this, it can be concluded that at least for some, a crucial motif for Sotshi Areena usage was the broader broadcast catalogue than on television. This option was not mentioned explicitly often, which indicates that much of the viewed content could have been the very same as on television.

The reported problems with connection indicate that dozens of respondents could not rely on witnessing the Olympic Games with the service. Therefore judging by numbers, securing smooth running of the application should be a main priority for future

developers. After all, live video streaming is the ultimate reason for the existence and usage of an application such as Sotshi Areena. Unfortunately, fast connection is not always in the hands of the developers. The user may not have subscribed to a sufficient bandwidth for smooth video stream, there may be too many users sharing the bandwidth or there might simply be technical problems with the telecom operator.

The present study has shown that individual respondents enjoyed portable watching and freedom of choice as highlights of the application. It may be argued that for Yle, the highlight of Sotshi Areena was the added value that taxpayers saw in the effort of making the application happen.

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Appendix A

Yle Post Survey. ”How did Yle Sports succeed in the Olympic Games – Give Your Feedback.” Retrieved 2nd October 2015 from:

http://yle.fi/urheilu/miten_yle_urheilu_onnistui_olympiakisoissa_-_anna_palautteesi/7103087.

Translation in italics.

Miten onnistuimme olympiaprojektissa? How did we succeed in the Olympic Games?

*Pakollinen *Mandatory*

Vastaaja on *The respondent is* *

- Mies *Male*
- Nainen *Female*

Vastaajan ikä *Age of respondent* *

- 9-15
- 15-24
- 25-35
- 35-50
- 50-65
- 65->

Anna arvosanasi Yle Urheilun kokonaispanoksesta Sotshin kisojen välittämisessä (televisio, radio, netti, teksti-tv, some)

*Give your grade to Yle Sports' overall production of the Sochi Olympics (television, radio, internet, teletext, social media) **

1 = huono 5 = en osaa sanoa 10 = erinomainen

1 = bad 5 = neutral 10 = excellent

1 2 3 4 5 6 7 8 9 10

Mistä välineistä seurasit Sotshin olympialaisia?

*Which media did you use to follow the Olympics? **

- Televisiosta *Television*
- Radiosta *Radio*
- Sotshi Areenasta *Sotshi Areena*
- Yle.fi/urheilu -nettisivuilta *Yle Sports' internet pages*
- Facebookista ja/tai Twitteristä *Facebook and/or Twitter*
- Teksti-TV:ltä *Teletext*
- En seurannut kisoja *I did not follow the Games*

Mistä sait parhaiten tietoa olympiakisojen tv-, radio- ja Sotshi Areena -lähetystiedoista?

Where did You get the best information about TV, radio and Sotshi Areena broadcasts?

*

- Televisiolähetyksistä *From television broadcasts*
- Ylen Teksti-TV:stä *From Yle teletext*
- Yle Urheilun Kisaoppaasta (netissä)
- Sosiaalisesta mediasta (FB, Twitter jne) *From social media*
- Netin ohjelmaopas-sivuilta (Ylen ohjelmaopas, Telkku.com, Iltapulu.fi jne) *From program guide webpages (Yle's or external competitor's)*
- Päivän lehdestä *From the daily newspaper*
- En saanut riittävästi tietoa lähetysajoista
I did not get sufficient information of broadcast times

Anna arvosanasi Yle Urheilun tv-lähetyksistä

*Give your grade to Yle Sports' TV broadcasts **

1 = huono 5 = en osaa sanoa 10 = erinomainen

1 = bad 5 = neutral 10 = excellent

1 2 3 4 5 6 7 8 9 10

Anna arvosanasi Yle Urheilun radiolähetyksistä

*Give your grade to Yle Sports' radio broadcasts **

1 2 3 4 5 6 7 8 9 10

Anna arvosanasi Yle Urheilun nettisivuista

*Give your grade to Yle Sports' internet pages**

1 2 3 4 5 6 7 8 9 10

Anna arvosanasi Yle Urheilun netin Kisaoppaasta (lähetystiedot, tulokset ja
liveseuranta)

*Give your grade to Yle Sports' Kisaopas internet page (broadcast times, results and live
coverage) **

1 2 3 4 5 6 7 8 9 10

Anna arvosanasi Yle Urheilun nettisivujen LIVE-artikkeleista

*Give your grade to Yle Sports' LIVE articles on the internet pages **

1 2 3 4 5 6 7 8 9 10

Anna arvosanasi Yle Urheilun teksti-tv:stä

*Give your grade to Yle Sports' teletext **

1 2 3 4 5 6 7 8 9 10

Anna arvosanasi Sotshi Areenasta

*Give your grade to Sotshi Areena **

1 2 3 4 5 6 7 8 9 10

Anna arvosanasi Yle Urheilun sosiaalisen median läsnäolosta (Facebook, Twitter, Instagram)

Give your grade to Yle Sports' presence in social media (Facebook, Twitter, Instagram)

*

1 2 3 4 5 6 7 8 9 10

Kuinka tärkeänä pidät Yle Urheilun läsnäoloa sosiaalisessa mediassa (Facebook, Twitter, Instagram yms)?

*How important is Yle Sports' presence in social media to You (Facebook, Twitter, Instagram etc.)? **

1 = hyödytöntä 5 = en osaa sanoa 10 = ehdottoman tärkeää

1 = useless 5 = neutral 10 = highly important

1 2 3 4 5 6 7 8 9 10

Vapaa sana - anna palautetta, risuja tai ruusuja Ylen olympiaprojektista

Open feedback – compliments and criticisms to Yle's Olympic project