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[Research: Connected TV]

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Introduction

The Widget Company (TWC) is a company which makes apps and widgets for Connected TV's. They are looking for a solution that makes Connected TV's more accessible for advertisers, users and TV format producers. The possibilities of Connected TV's are not used to their full potential and these three stakeholders could benefit from their enhanced possibilities in comparison with linear TV's. This is why we are going to develop a concept that makes Connected TV's more accessible for these three stakeholders. Our research question for this project is "*How can Connect TV help convergence and increase user engagement?*"

It is important to explain what convergence means in the context of Connect TV. Convergence in essence means *the combination of multiple services*. In relation to Connected TV this means all the different aspects of the user experience in the living room. The use of Smart TV apps, second screens, advertisement, extended content and other services are all part of this. Because Connect TV is allowing us to do more with the connectivity of devices and integration of content, it is a crucial aspect of our project.

But for all this to make an impact it is necessary for it to be an interesting involvement for users. This is why we want to research how we can get users increasingly engaged and this can only be achieved if we consider the experience of the user.

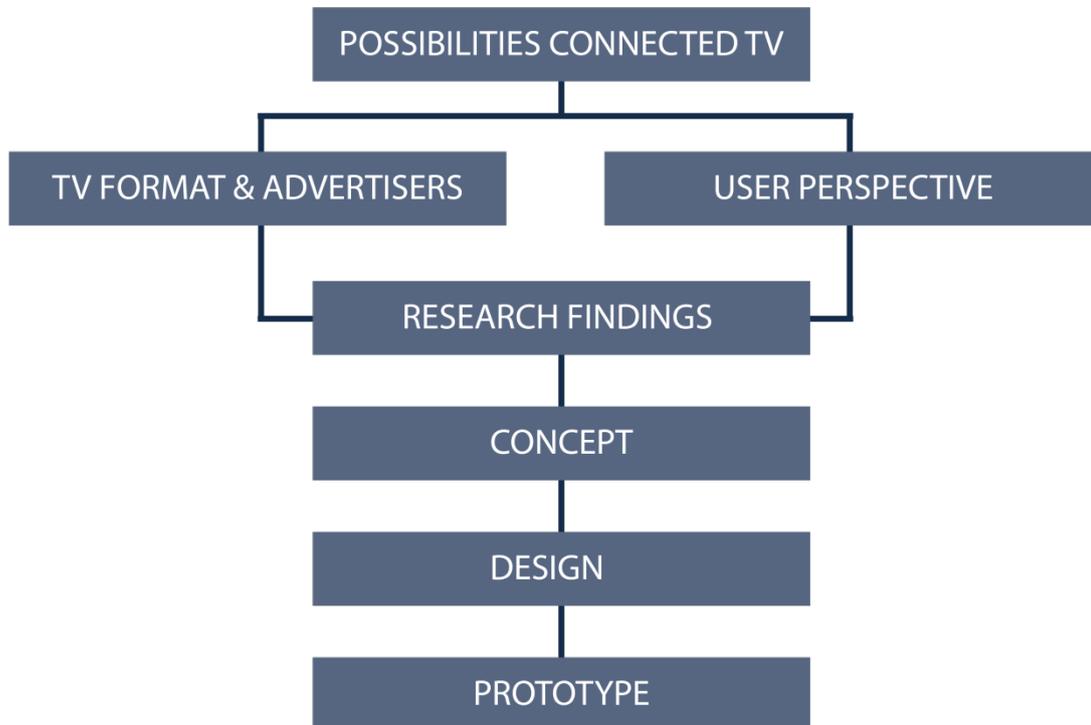
In order to come up with a solid concept, we need to research the Connected TV landscape and know what the possibilities are and what is already there. These findings will enable us to think of challenges and opportunities for TV format producers/advertisers and users. Further researching both of these groups will allow us to see what interests the groups have and how we can combine these interests into one concept. Additionally, we made sub questions to get a deeper understanding on the subject. The questions were selected to comprehend the needs of our stakeholders, and they are:

- *How can we make advertising on connected TV's more interesting for advertisers?*
- *What will trigger users to use Connected TV in their daily life?*
- *What content can the Connected TV platform offer so the audience can engage within?*
- *Which extra capabilities do Connected TVs offer to the TV formats?*
- *What are the challenges and opportunities in developing for Connected TV?*

When we have a solid concept we can get into developing it and get a prototype working. This will be the end product and hopefully something that will help convergence and increase user engagement.

Method

The next diagram shows the working process that we will follow.



In order to get the precise insights and knowledge on the subject, we designed the next research methodology:

1. **Desk Research:** We studied theory on the subject with academic bibliography. We researched on the current status of the media involved in Connected TVs, and the way people relate to them nowadays. We searched for the best practices tried out on Connected TVs in the world regarding the user experience, content distribution, advertisements, interaction with the audience and technological development.
2. **User's insights:** To get a better understanding of the perception of users regarding Connected TVs, we made qualitative research. We interviewed several people to know their behavior with home entertainment and gadget usage.

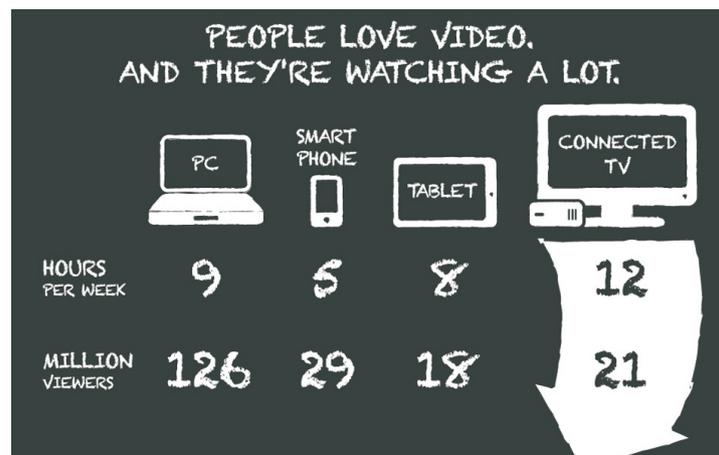
Current Status

Most of the people who own a Smart TV don't know what it can do and as a result they don't use the full potential of their Smart TV. Only a mere 15 percent uses the internet-connected part of the TV [1].

The most popular reason for buying a Smart TV was purely to get a newer television, effectively undermining the hyped-up importance of internet-connected TVs. It was also found that 89 percent of respondents with connected TVs considered the most important aspect of their Smart TV to be its sound quality, whilst 93 percent preferred the screen size, and a massive 96 percent deemed picture quality to be the number one factor [2].

Average User

Somewhere between 75 percent and 85 percent [1] of TV viewers use other devices while watching, though a lot of these people are doing unrelated tasks. Only 30 percent of the viewers are browsing for products they spotted in a show or ad. We can derive from this information that the majority of Smart TV users use multiple screens while watching TV. 80 percent of smartphone owners, 81 percent of tablet owners and 73 percent of laptop owners use their devices in front of the TV [2].



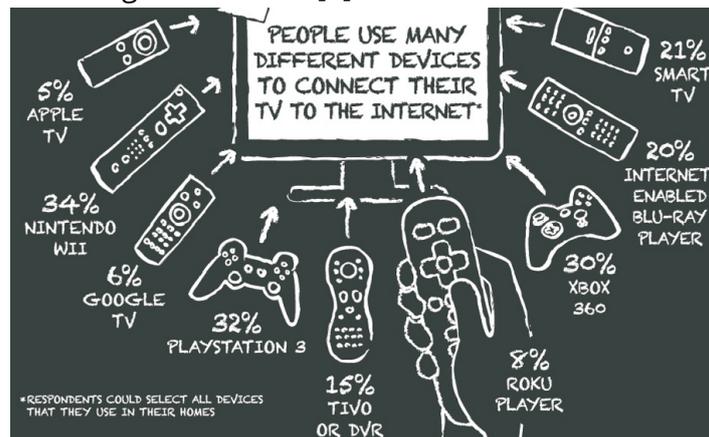
Figures on connected TV usage in comparison with other devices

The multi-screen consumer is an adult who owns and uses a TV and accesses the Internet via a computer and Smartphone on a weekly basis. They use multiple screens while watching TV because every screen as a different usage and benefits. The second screen increases the productivity of the viewer. They do other stuff while they watch TV, this can go from tweeting to checking emails for work.

Smartphones are used in front of the TV to keep us connected with friends or when want to quickly find something. Tablets on the other hand are used for browsing for a longer time and entertainment like games. Laptops use is motivated by finding information and keeping up to date. The laptop is more work-related than the tablet and smartphone.

The multiple screen user is a high-value audience which is typically well educated (46 percent more likely to have higher education), career minded and a brand advocate. If he likes a brand he will talk positively about it to other people and he will make Worth-of-Mouth advertising about the brand [3].

The average multi-screen consumer spends 46 hours a week engaged in activities on media and entertainment devices. Multi-screen users are also sophisticated media mashers: 86% use at least one other media whilst they watch TV, with 68 percent using the Internet [2].



Devices used to connect to the internet

The reason why people use the “smart” part of their TV is because they want a relevant, consistent and connected experience.

User research

Research Question

What will trigger users to use Connected TV in their daily life?

Before we can answer this question it is important to understand what the user landscape is. We have looked at the total experience of the user and analyzed all the components that affect users.

To get to this we have looked at the current usage of devices that are part of connect living and how they are used in daily life. This is to get a thorough understanding of the current situation in the living room and gives us a good starting point to look into the future.

After this we focused on how users are triggered and use their devices. For connected living this is an essential part. The fight for the living room involves multiple devices which are all connected and depends a lot on what the user wants. To conclude we will combine all the parts of the research and illustrate an image of the user experience and how we can engage the user in an appropriate way.

User landscape

By 'User Landscape' we mean the entire user environment in which a Connected TV is used. With this we want to map the experience of the user. To do this we have to look at all the factors that concerns users at home, but also in a more general manner. This is where we can see what the user behavior is and therefore take this into account when creating ideas and concepts.

Device usage & context

In a study done by Google [3] they explored consumer media behavior over a 24 hour period. There are quite a few elements in this study that are very relevant to this project. Within this study there is also a lot of information on general device use. This is important as background information because it is necessary to know in which context the different devices are used.

The first element we are going to look at is how media is used in the daily life of a consumer. This content is an important aspect for users and is the blood of the technological body that keeps users engaged. In the study it shows that 90% of our media interactions are screen based [3, p. 8] and that this takes up to 4.4 hours of our leisure time a day.

Since there are so many devices used (smartphones, tablets, laptops and TV's) it's important to know in what context and for what purpose the different devices are used and how long we use them. We have seen how long we use devices on a daily basis, but how is this time divided among the devices?

This depends mostly on the context. A smartphone is mostly used as an on-the-go device which is used during short bursts of time. The average time used per interaction on a smartphone is 17 minutes. The primary purpose for using a smart is communication to stay in touch with your social circle. A secondary purpose is entertainment. To illustrate the purpose you could think of a quick conversation with a friend to set up a meeting or playing a game during commute. The smartphone is the device that is most used outside of the home at 40% of the time.

The main reason for using a tablet is entertainment. Tablets are for the times that you are in a laid back mood and have an unbound sense of time. Average interaction time is 30 minutes per interaction. 79% of the time the tablet is used at home, this is due to that it is mostly used in a relaxed and leisurely approach.

The laptop sits in between the smartphone and tablet with 69% at home usage. Where both of the previous devices score high on entertainment, the laptop is associated a lot more with business and work. This is the least appealing device for a second screen since the activities associated with laptops are tasks that take time, require focus and a serious research intensive attitude. Finding information is the main reason people use their laptop.

Multi-screening

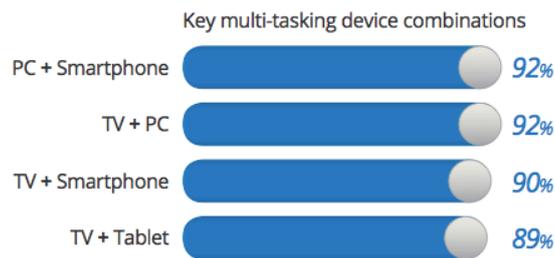
A trend that is gaining more and more momentum is multi-screening. There are two types of usage in multi-screening, sequential use and simultaneous use. We will be looking at the results that combine the TV with other devices.

In the same study Google did, they found that 81% of the users use a TV and smart phone simultaneously. In this research they did not screen participants on tablet usage, but 41% of the participants reported using the device.

An interesting finding in this research is that 78% of the simultaneous use is multi-tasking. So users are doing multiple activities at the same time.



78% of simultaneous usage is **multi-tasking**

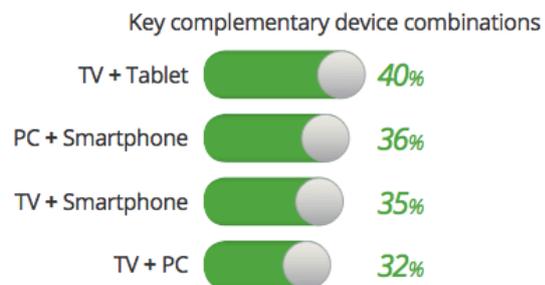


As seen above, TV is a big representative when it comes to multi-tasking. This does imply that users are distracted from the TV and continue with other activities on a different device. This is something we can see as a challenge and see how we can change this.

The opposite of multi-tasking is the complementary usage of devices. Although this usage is a lot less than multi-tasking, we see that TV has big share in the complementary device combinations with TV and tablet at the top.



22% of simultaneous usage is **complementary**



The role of TV in a multiscreen world

The role of the TV is changing. Due to the fact that we have access to more devices we can choose, based on the context, which device we use. Watching TV no longer requires our full attention. 77% of the participants reported using other devices at the same time in a typical day.

To conclude the study done by Google they learned that most of the time when TV is watched, another screen is being used. These instances present the opportune time to convey your message and inspire action.

Summary

Thus far it seems that second screen use is not yet related to a connected TV. There is a lot more multi tasking instead of complementary use. To trigger users we will have to look at what users would like to see or what previous concepts have done to get the users attention. With user interviews we hope to gain more knowledge on user perception.

Advertisers research

Research question

How can we make advertising on connected TV's more interesting for advertisers?

Introduction

The connected TV market is growing at an average rate of 90% each year and advertisers need to pay attention to connected TV and its possibilities. People are getting more difficult to reach because they are more skeptical. Thanks to the internet they are used to receive personalized and relevant information for them. The era of just showing an ad on TV is over and advertisers need to find a way to communicate with people through different channels. Connected TV offers interesting possibilities for advertisers to communicate with an audience. The advertiser can interact with its audience, he can personalize its advertisements and he can measure the click-through rate more easily.

Interactivity

The connected TV can be a magnificent platform to interact with your audience because it has great possibilities. The screen quality and size are interesting to combine with an internet connection. The internet connection gives the advertiser the option to have the viewer interact with the advertisements on the screen. People don't just only watch TV, they watch TV while they use different screens on other devices. These devices can be used to interact more easily with the viewer because browsing on a Smart TV is not the most ideal option. This is why cross medial advertising on tablets and Smartphones can be interesting to combine with connected TV's.

The "problem" with connected TV advertisements right now is that you need a second device to activate the interactive part. There are hardly any campaigns which only use connected TV's and the possibilities of a TV connected to the internet. Most of the interactive TV campaign use second screens. The Connected TV is too inconvenient to work with to really interact with the viewer; the biggest problem is that it does not have a keyboard. This makes it hard and a lot of effort to give in data (which advertisers most of the time try to gather) [4].

A successful example of second screen usage in the Netherlands is The Voice of Holland: they made an app where you can give your opinion about the performance of the singer on TV and you can see what other people think with statistics. This is interesting for advertisers because they can advertise in this app too. They also have more possibilities like redirecting them to a page where they can buy the product.

A common app that gets used for second screen campaigns is Shazam. At some point in the ads it says down in the screen that you have to record the next part with Shazam. The sound of the program gets recognized and then you get redirected on your Smartphone to a mobile site where you can watch more

content about the product. There are obviously other apps which work with sound recognition but Shazam is the most known.

Personalization

The advertisers have the possibility to personalize the advertisements on Connected TV's because they can get their information if the viewers logs onto something through the internet (example: login to Facebook or just leaving behind information on a website). Their information can be linked to other information (from third parties or somewhere else), so you can target your audience very easily. This can also prevent advertising clutter, for example: when you just bought a car, you won't get any ads which say "buy this car!" This saves advertisers a lot of money, because they can target their ads to the right consumers.

The ads themselves can also be personalized. Thanks to Connected TV's, there are more places where advertisers can put ads. For example: ads in the menu, in the keyboard, in a second screen. This opens up possibilities because advertisers can do more creative stuff with these new places.

Measurement

Thanks to the internet connection on the TV's, data from the viewer can be collected and sent to the advertisers. Advertisers will know how many people clicked on their advertisements and got redirected to somewhere else. They will also get an idea of what each viewer watches and likes. This information is interesting for targeting a specific audience.

This is not implemented yet, because it is still new technology. Google, the owner of YouTube is one of the main drivers of connected TV. Google and Kantar Media are currently creating a 3,000-strong UK panel that will measure online and television viewing in order to monitor cross-platform usage. Google is in talks with the media and advertising industry about how to make the data available.

Negative

One downside of advertising on Connected TV platforms is that only a small part of the population has a Connected TV. Also not everyone has a smartphone or a tablet. So if you have a target audience which has a lower income, the chances are bigger that you can't reach them through a Connected TV or a smartphone or tablet.

Best Practices

Ads on Connected TV's to Reach Scale in 2012, YuMe's Scot McLernon

<http://www.youtube.com/watch?v=eI6AvQMCB>

+ There is an audience that's hard to reach with television, but it can be reached with online video. This makes connected TV interesting to reach this audience. If you use online video in combination, your reach increases and your CPM (cost per 1000 people) drops.

+ People skip ads and never watch them, if you use online video on connected TV's and second screens, they have no choice but to watch short ads. This is not an annoyance because they request the content and they know what to expect. These ads are also more fun because you can use them in an interactive environment.

- Online video is more expensive, you have to target your audience right to get the maximum out of your money.

- Ad buyers need to ask permission of hardware makers like Samsung to place their ads in their platforms.

This video is interesting because it explains why people don't watch TV ads anymore and why advertising on connected TV and second screens is interesting to solve this problem.

European Ad Platform Smartclip Sells Out Connected TV Ads

<http://www.youtube.com/watch?v=mjaQa1FYq>

(+) The market is changing, a lot of European brands are using connected TV's for their ads. The connect rates for smart TVs in Europe varies by country, with the United Kingdom and Germany seeing connect rates of 60%, while Italy is closer to 35%, which is still a lot.

(+) There are a lot of interesting possibilities for advertisers to make their ads attracting like 3D ads, using gestures to do something in the ad or voice recognition.

(-) Using the same ads which you use for linear TV's don't work so well, they need to be tuned and more creative to give an added value.

(-) There is no standardized format to place ads in the platforms of connected TV's. The ads are in different places on different brands.

This video is interesting because the spokesperson from Smartclip says that the market in Europe is switching. More media buyers are buying space on connected TV's and we see that the people connect to the ads more than with ads on linear TV. The problem is that the ads are now on different places on the screen

and there's no standard. And if they are not interactive they don't give and added value.

Conclusion

Because the Connected TV technology is still new, advertising can't use the full potential of it yet. Not everybody has a connected TV or a connected device yet so it is not really very interesting for advertisers. It is also still hard to gather data from connected TV's because there is no general platform, but they are working on it. Advertising on connected devices is still in an early phase but it will be big in the future when the market is big enough and allows it too.

Content, Participatory Audience and Transmedia

Research Question

What content can the Connected TV platform offer so the audience can engage within?

Extended Storytelling

The Connected TV offers the audience a broad range of opportunities to stay tuned in the television. From a world of channels there is now access to infinite possibilities of apps, streaming, games, web browsing and social networking.

Consumers have traditionally paid a premium for more access to media in their living rooms. As TV evolved from 3 to 500 channels, and later introduced VCRs, DVD players and DVR, it was the access to content, and not the technology itself, that fueled mass adoption. The true value proposition that audience is looking for relies on content and experiences. This development must be in hands of the creative department, and not only the communication department, so the experience can belong to a whole initial concept [5].

Nowadays the television industry has been exploring new ways to adapt its content in the media convergence environment. The trend in our convergent culture is to create narratives that can unfold in different platforms. This model of storytelling (explored by specialist Henry Jenkins [6]) is called transmedia, and it aims to extend the story world's universe among multiple layers that tell a different part of the story and can become a different entrance to the narration. The story parts are complementary and each one is told through the medium that can contribute best to the whole. The great thing about this is that stories can be told without limits of character perspectives or narrative times. It can keep unfolding to find out infinite possibilities.

In addition to the previous, programs can offer viewers other ways to engage, participate, share and interact with their programs by using social media. Reality and game show websites, with interactive voting, extended information about contestants, and opportunities for audience participation, are particularly popular at drawing in online users to participate in the show's dynamics.

Connected TV's Possibilities

While most viewers today still do not participate in online television culture, a significant portion of the audience does extend their viewing into multimedia forms and participatory culture. By using extended content, Connected TVs can engage the audience in a personalized way. People can interact with the Connected TV because this one can offer one platform with depth level content depending on each viewer's personal interest. Connected TV can simultaneously offer extra information about characters, celebrities or contestants with the use of second screens. Transmedia storytelling in Connected TVs can offer interaction with the audience to get deep into the story: it can show different points of view

from different characters, access to previous footage, connect to the show's website, check out the character's Twitter, etc.

This dynamic already exists in different platforms such as comics, videogames, and Internet where characters from the shows have their own blogs, diaries. Although, it could happen that with second-screen experiences audience can feel too much push. When every 15 or 30 seconds, there is something new: "Hey, did you like his shirt, you can buy it here! Want to know the history of this actor check it out here!" This kind of practices can definitely detract from the viewer's experience. The way of extending the story should be designed from the beginning so the unfolding of the story parts could respond to consequent narrations, they have to make sense with the characters and plot's nature. The goal should be to reinforce the enthusiasm about the show.

By building custom-developed applications around the format of contents, broadcasters could liberate material that they did not take out. For shows like X-Factor, that could be judges' deliberations, or the full performances of certain contestants. With social media possibilities and future TV apps, viewers can interact with others by participating on extended narratives and activities created by the TV shows such as betting on a Football game or voting for a contestant depending on the shows nature. The power of such activities is that they invite and create a community around a show. If people are interested in something, they will want more of it.

Best Practices

The Voice, (TF1 France) App created by MYTF1 [7]

The premier of the show on 2013 was accompanied by a new audio-sync second screen app for tablets, mobile phones and PC.

(+) The app allows users to get additional content, voting, twitter streams and show related apps such as the 5th Coach.

(+) This app was a game where the audience could accumulate points and win gifts. It also contained an Instant Replay feature in which users could create their own 30second clip and share it on social networks.

(-) The app is only available in Italy

Image from Thenextweb.com

CBS Connect App (CBS USA) [7]

CBS launched the iPad app called "CBS Connect" in 2013. It is based on the network's Social TV platform that has the same name. The fans use the app as a synchronized second screen for several shows of the network such as CSI and NCIS: Los Angeles.

- (+) The app offers live sync, on-demand and recorded content features.
- (+) The app extends the experience of watching the series by offering extra content such as: behind the scenes, photos, videos, background information about characters, maps, episode's insights, polls, quizzes, temporary notes during the broadcast, previews of next shows and special features for the different series. In the case of series *Hawaii Five-O*, it provides an on location map. Users have the possibility to chat with others via social networks. They can access the accounts of the cast and crew of the show. It also filters conversations about the shows from Facebook and Twitter into a central location so viewers don't have to bounce from one social network to the other while watching TV.
- (-) It could be difficult to understand.
- (-) It is only available for little quantity of shows.

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TRANSMEDIA STORYTELLING

TV Formats

Image from Mashable.com

Drama/Crime

"The Following"

Fox, USA

January 2013

The drama centers on a serial killer in prison. He has a multitude of followers, so called "Friends" who will continue his crimes.

Weeks before the premiere, the network launched a viral transmedia campaign. Its storyline will unfold in the upcoming weeks.

Tumblr – welcometothefollowing.tumblr.com

A center of all related content: links to profile pages on social networks and blogs.

These links can be filtered by different characters such as Lenore, Prince Prospero, The Knight, Lady Ligeia, Mister Usher, The General, Annabel Lee, W.W., Joe and Ryan.

The campaign was launched in cooperation with multiplatform agency No Mimes Media.

Besides the campaign's accounts, Fox also launched official websites and social media accounts for the show. By accessing the official YouTube account, the campaign starts unfolding.

Web site – “The Following”

Profile pages

Most characters maintain various different accounts.

Example: Joe Carroll (the serial killer) has a Google+

(plus.google.com/104449729939636090211) account that is connected to a blogsite

(afriendforryanhardi.blogspot.de), gallery of his crimes can be seen

(professorjoecarroll.wordpress.com/gallery)

- Google+
- YouTube
- Soundcloud: used for featuring messages
- Pinterest: used to keep informed the main killer
- Flickr: photos of crimes
- Tumblr: used to maintain contact with other characters through letters
- E-mail: characters can be directly reached
- Google Maps: marked spots related to the series

TV@web Database

Live Show / Talent

“The X Factor”

Sky, Italy

2012

This format has proven to be one of the favorites for the audience after being 10 years in prime time across the world. The X Factor in Italy will be the example of the latest innovations in this format to involve the audience and expand the content. These initiatives have gained the show up to 750,000 votes in one episode.

Voting: Invite viewers to create accounts on Sky.It or login in with Facebook to cast their votes online. Voting through Twitter is also possible, first they have to follow @SkyUno or @XFactor_Italia and validate their accounts by sending an SMS. Finally they can cast their votes using a direct message.

Online Content: Each Thursdays at 21:00 hours, before every episode of The X Factor, Sky Italia airs on its website the web-exclusive shows: Web Factor and Xtra Factor. During the latter, the hosts interact live with the participants in backstage and anticipate the upcoming episode. It also features “the cube”, which is a social room where posts, tweets and comments from the social media are commented by the hosts.

App: Creates engagement through gamification. Viewers gain points when they vote, participate in polls, quizzes and by guessing the episode’s results. Points are also gained when sharing activity in social media and using the “applausometro”.

Screenshot “The X Factor Italy” app and applausometro
Mipworld.com

Documentary (Fiction)

“Le Defi Des Batisseurs”

ARTE / France

2012

ARTE aired 3D fictional documentary about the gothic Strasbourg Cathedral, the tallest building in the world until the XIX Century. With the broadcast, the network launched an interactive game and an app. The game allowed the users to take the role of the tower builder and construct a second tower for the Strasbourg Cathedral. Users could design their own tower using the online tool. It was a three-week competition. The users could win mobile phones and a trip to the city of Strasbourg.

App: Users could discover GPS and NFC based additional information on the cathedral and other landmarks of the area. It also includes videos, details on architectural features and interviews. Through the app, the users could solve puzzles to win more elements to build the tower. The app could also display an augmented reality feature where the user could see his virtual tower on the top of the actual facade by pointing their mobile devices towards the cathedral.

Social Game: This one would be launched in 2014 allowing the users to build a complete virtual cathedral.

TV@web Database

Series / Fiction

“Teen Wolf – The Hunt”

MTV / USA

2012

In June 2012, MTV launched “The Hunt” accompanying the season 2 premier of the show “Teen Wolf”. The scripted transmedia project allowed the users to participate in a parallel plot line overlapping the show. It lasted eight weeks. The story unfolded through secret videos, text messages and exclusive content for Facebook.

Three main characters of the show asked the users to help them find another missing character. The users had to create a profile and take on a role of character, this way they were engaging in virtual chats with the show’s leading characters.

The users were involved in tasks that had to be resolved according to the show’s storyline. In the first five weeks, users have spent an average of 46 minutes playing, more than 80% of them were weekly visitors.

TV@web Database

Thriller / Fiction

“The Spiral”

ARTE / France
2012

“The Spiral” was launched in 2012. It is a transmedia mystery composed by an online community game, blogs and events held in different cities across Europe.

The plot is about a group of artists that want to steal six major artworks from different European museums.

The viewers were invited to help and solve the mystery by playing a game alongside. The community search for the artworks concluded in an alternate reality game in Brussels in September 2012.

The spiral.eu website: Viewers help find the paintings as they were on the move. From there, users were invited to participate in virtual and real life challenges: play games, participate in blogs, watch videos, create user generated content, online art projects and hidden caches in remote places earning users credits.

Virtual challenges: Viewers could explore the storyline and become part of a real community art project.

TV@web Database

Soap Opera

“Plus Belle La Vie”

France3 and Telfrance / France

2012

“Plus Belle La Vie” was an alternate reality game that lasted six months in 2012. The game took place simultaneously to the show’s broadcast.

Sometime in April 2012, one of the characters of the show created an online blog and invited TV viewers to comment on it. There was a good response to this.

Blog: Months afterwards, images and videos of the series’ characters appear on the blog and YouTube. These material would be useful to solve a riddle and gain access to a new website. The episodes were intertwined across multiple online platforms engaging 70,000 players and producing more than 100,000 views on YouTube.

Hidden website: This website allowed the viewers to take control over the CCTV cameras installed in a district in Marseille where the series took place.

Extra clips: The show got a break during the Olympics. In this period, short clips were broadcasted showing a mysterious character from the soap opera.

The show came back to the regular schedule and new online videos appeared inviting the audience to take actions. This call to actions caused the website to crash because of the 10,000 users trying to connect at the same time.

Facebook and Twitter: Clues to identify the “Le Vigilant” were released here. The player that posted the correct answer first won a trip to Marseille with a guided tour through the show’s studio.

TV@web Database

Augmented Reality / Advertisement

“Conspiracy For Good”

NBC and Fox / USA

2010

This was a cross media game that used traditional media, new platforms such as mobile phones, game consoles, tablets and PCs. Participants life’s were affected in real life. It was launched with viral videos starring celebrities (JJ Abrams, Ringo Starr, etc; declaring: “I am not a member”. Another viral video was launched, it looked like it was leaked from the company Blackwell Briggs, and it presented the importance of video surveillance in public places.

Game: The players had to take down the global security company Blackwell Brigs.

Nokia was another participant in the creation. They provided free games where players could break into the Blackwell Briggs server and steal information. One of the games led players to a live action event in London. Nokia provided mobile phones with a pre-installed software to complete the task. The social game was divided in four parts. For the final stage, the games were downloaded more than a million times.

TV@web Database

Interactivity / Social TV

“Germany’s Next Topmodel”

ProSieben / Germany

January 2013

The slogan for this show’s season is ‘Closer than Ever’, and ProSieben is trying to bring the audience as deep as possible inside the shows narrative. The audience can vote for their favorite upcoming Topmodel through several tools for participation. The points are split up depending the platform that has been used to vote through: 40% Facebook likes, 10% Twitter hashtag mentions, 50% bookings in Model Booker.

Model Booker: Fans are asked to select three different models that they think will perform very well in the upcoming episode. Based on the outcome of the competition, the users will receive points if their choices were correct. The game is connected to the Social TV plattform.

Model Buzz: It is a social chatter analysis for the new season of the show. The tool shows the models with the most buzz (based on each week’s mentions on Twitter, likes on Facebook and on the social tool **Model Booker**).

Social Media: Each model has her own Facebook fanpage and Twitter hashtag.

Web App: Offers an interactive overview of all participating models. The users can get more information of the models such as their bios, key facts and photos. It also includes gives social sharing options back to the Model Booker and Model Buzz.

Voting App: It is a flash-based voting application. Users can decide which model has the most beautiful eyes, smile; who is more glamorous or natural. After voting, you can see an overview of the most voted models.

TV@web Database

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The X Factor Italy Case Study

<http://blog.mipworld.com/2012/12/social-multi-screen-tv-case-study-the-x-factor-italy/>

TV@Web Database

<http://tv-at-web.com/search?category=TRANSMEDIA>

Conclusion

Content makers have to change the formula of how they deliver their programmes because the form of doing so is changing. The audience is consuming TV as never before. The narrative paths offered by Connected TV can adapting by storytelling techniques that have been proved to serve in other convergent media. Interaction and participation with the audience is now available in TV in a two way flow.

TV-Formats

Research Question

Which extra capabilities do connected TVs offer to TV formats?

Introduction

In the actual television, there are some TV formats that are including extra functionalities of Social Media, like connections with comments in Facebook or tweets from Twitter. A very good example about these actions is the show *"The Voice of Holland"*. They have an application for smartphones and tablet in which, during the live show, you can rate the contestants [8] or try to guess who is going to be "adopted" by the jury. Also, at certain points of live show, they show the statistics of the application [8], which give the user more information about what other people think of the show. During the week, this application also works but in a different way: they play recorded songs and the people have to guess if it will pass during the life show.

"The Voice of Holland" has made a good work in terms of connecting people to the show, but they are almost the only ones doing this. Also, they are directly focusing on the secondary screen application, forgetting the TV.

Besides the television broadcast, we have that some broadcasters are making applications for TVs that try to complement the actual format. The problem is that these applications are not giving extra value. Applications for read the news or looking for the weather are appearing in TVs, but usually is easier and faster to make these actions in a second screen. One example as a good application in the TV environment is the NOS application. In this application they are streaming videos about sports, which make sense because TVs have being designed more to visual content [9] than reading or a few minutes fetch.

New features for TV-formats will be conditioned by the TV-format

As Tina Hoover, VP of social Media and interactivity at Endemol USA, said: "there are formats that lend themselves more to interacting, particularly reality, game shows, and live events – at least for some people" [5]. For example, not everybody will want to engage a show. Developing new features for the TV-formats needs to keep in mind that not all features will be adequate for every show.

On-Demand Formats

Broadcasters are beginning to take care about on demand format and content. With the new technologies, the people can choose what they want to watch in a certain moment [5]. Maybe people want to watch a series they like, or discover a new live show. Personalization it is also coming on the news TVs and on

demand devices, so broadcasters are having difficulties to keep people on their channels.

Connected-TVs can help broadcasters on keeping their audience

Broadcasters need to experiment new ways to offer their formats, if not they will suffer ill effect [5]. It is a risk, every experiment has it, but otherwise the broadcaster will continue losing their audience, because people will look what they want to watch on other device or channel.

With connected-TV the broadcaster can know what show the people want to see on their house, and offer it under demand. Probably this is not possible for live formats but for pre-recorded formats, like series or films, can be a good option for the broadcaster to keep connected with the people.

Hybrid Broadband Broadcast TV (HBBTV)

HBBTV is a new pan-European initiative aimed at providing an alternative to proprietary TV technologies and delivering an open platform for broadcasters to deliver value added interactive and on-demand TV services to the end-consumers.

This technology gives the broadcaster a wide range of possibilities to develop new features for actual TV formats. It is based on two types of applications, broadcast-related applications that works with the broadcast and/or the broadband and is controlled by the broadcaster, and broadcast-independent applications that are available only via broadband and are not declared in the broadcast stream.

Broadcast-related applications are declared in the broadcast stream and are controlled by the broadcaster. A few examples of these applications are “Red Button” applications (like interactive info or quiz), teletext or T-Commerce. These applications can run with the actual broadcast stream in the Television.

Broadcast-independent applications are not declared in the broadcast and needs the broadband to work. Games and video on demand are two examples of this kind of applications, which are made by the manufacturer or external companies that can be or not related to the broadcasters.

Even that this broadcast-related applications open a lot of new ways and possibilities to broadcasters to enhance their actual formats Dutch broadcasters are refusing to use all the potential of the broadcast-related applications for some reason. It would require more research on this field to know why and if it possible to rethink this [10].

Best Practices

The X Factor Italy - application for live shows [11]

"The X Factor Italy" is a live show similar to *"The Voice of Holland"*, where people sing and the judges have to say who will pass to the next round. They have added extra functionality to the live show, and now people do not just watch the show lied at their sofa.

(+) Diversity of devices and extra content you can use to connect to the show: computer, smartphone and tablet, and games, extra info or just social media.

(+) It works different on different moments of the show, the functionality of the app change depending if the show is in stream or not, and change the live show depending on how people interact with the show (rates, for example).

Web-app for the program with extra content

(-) So much extra content that takes time and money to create it, so you need to be sure that it is going to be useful.

As an interesting point, we can see how the same TV format (*The Voice Of Holland*) has been exported to other country and that it works like in The Netherlands, being successful because people demand that extra functionality for that show.

NOS Sports - application for videos "on demand"

TV is done for visual outputs, and NOS Sports is such a good application that adds extra content to the normal sport news.

(+) Watch the last videos about sports at the application, in a usable interface. It is interesting how it try to make easy the video searching and watching, although is done in a TV.

NOS Sports App

(-) The application needs to have a wide variety of content on it, so the viewers can find what they want to watch. It is useless if I want to watch football on a "Sports Video On Demand Application" and there is no football on it.

Conclusion

Broadcasters and TV formats makers should look in depth for this connected world. They are losing viewers, but there are so many possibilities to attract new ones or try to keep the ones that are leaving. They seems to be afraid

of changes, but they need to understand that with the evolution of technology they have a lot of options and they have to use them.

HBBTV, interaction with formats and extra content are extra capabilities that connected TVs make possible to this market, and should be used to have be stronger.

Development

Research Question

What are the challenges and opportunities in developing for Connected TV?

Introduction

Basically, a Smart TV application is developed in HTML, with JavaScript and CSS. HyperText Markup Language (HTML) is the main markup language for creating web pages and other information that can be displayed in a web browser. JavaScript is one of the world's most popular programming languages, used for web development. Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation semantics (the look and formatting) of a document written in a markup language. CSS most common application is to style web pages written in HTML and XHTML. Some TV models support Adobe Flash and also Lua Scripts applications.

Market Fragmentation

Even with such a well-known language like HTML, the Smart TV's market is fragmented. Currently, each manufacturer has its own development platform, with its specific API, forcing the developers to work their time adapting the code for compliance with all the TV's. That being said, the company with the biggest market share have the preference from developers, and in 2011 Samsung had 23 percent of Smart TV shipments, but this scenario is changing.

In an effort to create a standard for Smart TVs and trying to repair the fragmented market, LG, Toshiba and TP Vision founded the Smart TV Alliance, and with Panasonic's joining, the group has four of the largest five manufacturers in Europe, shipping 36 percent of all the Smart TV's. Their mission is to make a single development environment and software-development kit (SDK) that multiple manufacturers may adopt.

The positive side of this partnership is that developers no longer have to worry about adapting their code to different platforms, allowing them to create applications and successfully run them on all supported Smart TV Alliance platforms, focusing more on being creative and productive. To enrich this, the group is going to launch a new SDK this month, allowing user to enjoy a richer Smart TV experience with 3D video, the highest quality video and audio for 2013 TVs.

But yet, even the creation of a standard does not solve all the issues of Smart TV development. It's good to mention that since not all manufacturers are together in the Smart TV Alliance, the developers still have to change their code for each manufacturer's individual requirements and compliance process. At The Widget Company (TWC), they solved the fragmentation problem building a framework to translate part of their code for other TV platforms, saving some time porting it. In the market there are some solutions towards that too.

Second screen possibilities

In the current days, 90 percent of all media interactions are screen based, where everyone has a tablet or smartphone, spending most of their time in front of a screen. With such a high usage of devices, the television is no longer the centre of user attention but it has become the most common device that is used at the same time with other screens. The use of second screens has a psychological reason, where people feel more efficient and active, finding easier to move from one device to another to achieve a task.

There are two modes of multi-screening: Sequential Usage and Simultaneous Usage. The Sequential Usage is defined when moving from one device to another at different times to accomplish a task. The simultaneous Usage is defined when using more than one device at the same time for either a related or an unrelated activity, interacting with the current program on the TV, creating a complementary experience, with devices working together creating a unique experience.

As an example for second screen usage, the user can use his tablet to check a program guide and know more about the program he is watching. Or more, the user can start watching a show on the laptop and just switch to the television where he can watch it more comfortably. The developers need to make this transaction as smooth and simple as possible, within the technologies limitations.

Best practices

With such a fragmented market and different platforms, it is not that easy to have a pattern for application design and development. But there are some principles that are relevant.

The designing process for television is also known as "designing for the 10-foot experience", because of the distance of the user from the screen. In that case, the graphic elements - menus, buttons, and text fonts - need to be ergonomically large enough so it can be easy to read at a distance of 10 feet. Also, it is right to assume that users are in a comfortable environment in their living rooms, and they want to relax and be entertained with their TV's.

The input type is a problem too. In the laptops there is a keyboard, with the smartphones and tablets, there is a touch screen so it is easy to interact with these devices. On television, the interaction device is the remote control, and before the Smart TV's it was only used to browse through the channels, so the challenge is developing applications that are comfortable for users and where the interaction feels natural. There are five common buttons in the remote control: the arrow keys and the select button. Developers and designers need to make sure all the elements can be easily accessed with these keys.

Conclusion

Designing digital products separately is not enough, the devices connection and interaction needs to be kept in mind, creating a unique environment for these. A product needs to be coherently across the devices, being optimized for each one and its limitations, so they are complementing each other, increasing the user experience with the application.

Field Research

Different devices

The research

Samsung TV

Setup and connection

First of all the TV was installed on its place. It was done with no difficulty, and then we connect it to the to the Wi-Fi connection. Again, we had no problems doing this. The TV detected and connected to the Wi-Fi perfectly.

First steps

We moved to the smart part of the TV and navigate through the menus.

No difficulty with this. There is a row for the most used apps at the top, then there are featured apps and down them we can found all of the apps that are installed on the TV.

At this moment we tried to use or smartphones as a controller for the TV, but although it was connected to the same Wi-Fi and we download the official app of Samsung, we didn't manage to configure it.

AllShare functionality

One feature of the Samsung TVs is the AllShare functionality. With that, you can use a Samsung Tablet or another device with a compatible app to connect and share media content with the TV.

We tried to use it with the official server for computers of Samsung, but although it detected the TV it did not work. We tried also with iMediaShare, an iPhone app that it supposed to work, but there were no good result.

After all the attempts, the TV was updated through the menu settings although it didn't told us there were a new update, we found it manually. After the update we was able to connect to the iPhone using the AllShare functionality with the iMediaShare app, but no in the other direction. Also the computer server and the other apps didn't work at this time.

Google TV

Setup and connection

The connection with the Google TV was done without difficulty, connecting the Internet cable to the device and the HDMI to the TV.

This time, we have the problem for the research that the device has been configured previously, so it has no setup at that moment.

First steps

After selecting the correct source for the device at the TV we were in the main menu of Google TV.

It is possible to find a row at the bottom page and a black background at the beginning. Through this row you can access to the notifications of the apps, apps menu, linear TV, YouTube, Google Play (Store), Sony Network, Search and Help.

It was more fluid than the menu of the Samsung TV, and the controller with an integrated keyboard inside makes easier searching things on Google or YouTube. It has a lot of apps because it works on Android.

Linear TV on google TV

We tried to connect the linear TV to the Set-Op-Box of Google TV, but it has no antenna input, just HDMI input and output, so we didn't manage to do this. In this case, the Linear TV app was useless. Probably it will be a good option on a TV working on Google TV, but not for a Set-Op-Box.

Apple TV

Setup and connection

The connection with the Apple TV was done without difficulty, connecting the Internet cable to the device and the HDMI to the TV.

This time, we have the problem for the research that the device has been configured previously, so it has no setup at that moment.

First steps

After selecting the correct source for the device at the TV we were in the main menu of Apple TV.

The first app we tried was the YouTube app. It work as expected, but we found very difficult to write what we want to look for at YouTube, the remote only has the “arrow buttons” and moreover the screen keyboard has the letters on alphabetic order, instead of like a normal keyboard.

After that we tried to control the device through our iPhones, but it was necessary to access suing our apple ID and using the functionality of “Home Sharing”, so it makes impossible to use the official app of Apple.

Also for access to more content, like apps or media, was necessary to sync the device with the Apple ID, but it was configured with an account of the company and we didn’t have more time that day to continue with the experimentation.

Report conclusion

Connected TV is still in an early phase, it's a fairly new medium and its possibilities are not yet fully used by its owners. The number of users who use the full potential of their connected TV is still too small to be interesting for advertisers to advertise on these connected TV's. The broadcasters and content makers are in the same situation. Connected TV's can offer a lot of opportunities for viewers, like transmedia storytelling but it's still not happening a lot on connected TV's.

On the other hand, the usage of second screen is increasing. This is a medium that is currently used to make ads and content on the TV interactive and connected with the viewers. We are not sure if this is going to be a phase or not. It would be interesting for users and all the other stakeholders that connected TV lifts off. But it is possible that television viewers will keep using their second screens while they watch TV, and not interact with the TV.

We hope that we can develop something that can give the connected TV a boost and that encourage owners of connected TV's to use their connected part more. There are a lot of great things which can be done with connected TV's!

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