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THE FUTURE OF MEDIA CONSUMPTION: RESULTS FROM A COMPARATIVE STUDY OF CONSUMER BEHAVIOUR CHANGES IN THE LIVING ROOM

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ABSTRACT

Media consumption is changing. To predict changes in user's behaviour the majority of the industry is still relying on ownership of devices and usage of devices, age of users or household sizes as key indicators to predict media consumption behaviour.

In this article we propose to use user's needs and values as key factors to understand and segment user groups. Based on a selected set of findings from a large study combining questionnaires with ethnographic oriented user studies in several European countries and Canada, we show how basic needs and values can explain changing media consumption.

INTRODUCTION

Is media consumption really changing? Will people stop watching TV? Will the future living room just autonomously anticipate what people want to do and present content on different screens? And do people really want that?

Media consumption has been changing over the past 15 years [4]. But instead of the often predicted disruptive change, the way we consume video and TV content has gradually evolved. Basic measures like age, device ownership and usage as well as household types (e. g. family, multi-generation) are used to predict media consumption change (we refer to them as change predictors). For example age can be used to predict the likelihood of having a Netflix subscription: the older people are the less likely they have Netflix.

Change predictors claim to help us understand what technology to invest in and which one not to focus on. The intention is to be able to differentiate between technology that is a fashion and technology that is becoming a trend. Our experience as remote control producer has shown us, that for example using gesture-based interaction to control your TV was clearly a fashion [1], while the ability to (naturally) communicate and talk to others as well as to a system is a trend [2].

But age or device ownership do not help to understand: what is a fashion? And what is a trend? It is the understanding of consumer needs and most important user's values that enable us to understand the long-term impact of technology on media consumption [6]. Changes in needs and values can help to predict which technologies will be adopted by consumers and how behaviour accordingly changes, which technologies, especially in Smart Homes, need to be adapted and what type of values and needs will lead to the rejection of a technology.

This article provides an explanation of the method used to establish and validate the model of needs and values for media consumption behaviour, because product experience has a complex and layered nature according to individual and cultural differences [5]. Using a selection of results from a set of studies we highlight important changes in media consumption and conclude with a description on how consumers, emphasizing special user groups, can be targeted – not by looking at their age or living style, but by describing their varying needs such as safety, social or self-actualization needs [6] and meaning and values such as health, inner harmony or honesty [7].

RESEARCH GOAL AND METHOD

To understand user's needs, values and usage practices in terms of video consumption in entertainment we used a mixed-method approach with longitudinal method triangulation. Our research goals were:

- Offering a general description of people's media consumption behaviour types according to media budget, technology affinity etc. and refining these user groups and personas for further research.

- Describing users' needs and values, behaviours and activities/habits for the various investigated screens/modalities according to user groups and creating possible further usage scenarios.

First an extensive literature review was conducted to identify different motivation theories describing needs and values [9], including the basic [7] and extended [8] model of Maslow (see Figure 1). The "higher" basic needs (and values) such as ego needs (e. g. autonomy), and self-actualization (e. g. stimulation) should be targeted on design of products in smart home environments for gaining motivation and positive user experiences. "Lower needs" seems to be hygiene factors (satisfied needs), what means they can actually produce negative effects over the long run to user experience but no motivation in long-term usage of a product [9]. In context to smart home environments hygiene factors are regarding to functionality, utility and usability (effectiveness, efficiency and satisfaction) [6].
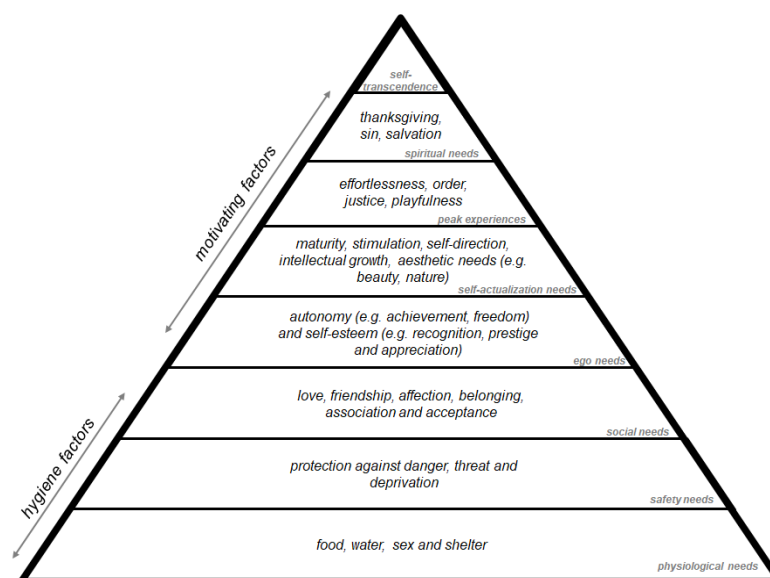

Figure 1. Needs and Values Model

Whereas needs can change quickly, values can be described as rather constant and broad life goals that influence users perception, judgement and behavior [e. g. 10]. For collecting many different values, we built on existing research work in user experience and IPTV [3] were we identified the most commonly described user experience dimensions, namely *Visual and Aesthetic Experience*, *Emotion, Stimulation, Identification, Social Relatedness/Co-Experience* and in addition *Meaning and Value*. Desmet and Hekkert [5] recommend to separate between users personal Meaning and the Meaning attached to a product. To operationalize personal *Meanings and Values* of the users, we selected the Rokeach Value approach [10] with the related questionnaire [11]. The Rokeach Value Survey describes 18 „terminal values" (e. g. inner harmony, pleasure, freedom etc.) and 18 „instrumental values" such as loyal, forgiving and independent.

Second a mixed-method approach combining a set of questionnaires and an ethnographic oriented study using playful probing were conducted. Questionnaire A running in March and April 2018, was focusing on media behaviors in five European countries namely Austria, Germany, France, Great-Britain and Switzerland and North America with a focus on Canada (English and French speaking). Recruitment of study participants was conducted with partners and via mechanical Turk (for Canada). The playful probing study was conducted in April and May 2018 and will be followed up and complemented by Questionnaire B running mid July 2018 to enable final validation of the model.

For questionnaire A, the entire web-based survey took on average 25 minutes to finish. It was presented in German for participants from Switzerland and in English for participants from United Kingdom. By means of a self-provided questionnaire for the assessment of specific user groups, we've focused on only three different types of TV users – Classic TV User (n = 210), Multi-Screen User (n = 83) and Mobile-/Computer-Centered User (n = 110) – to evaluate their needs and values. The survey included questions regarding to demographic data, technological infrastructure, media usage habits, video on demand (VOD) service usage, voice assistance usage and advertising alternatives.

The reported results *in this article* are based on data from a random sample of 403 household members in *United Kingdom* (n = 202) and in *Switzerland* (n = 201). The participants of the study live in different kinds of households. 126 participants live in singlehood, 136 participants stay with their partners and 141 participants stay with their families in one household. The people participating in this survey study ranged from 18 to 65 years of age with a mean age of 41.03 (SD = 12.95) years. The mean age of the Classic TV User group is 48.31 (SD = 12.61) years with a range from 18 to 65 years, the mean age of the Multi-Screen User group is 31.11 (SD = 7.07) years with a range from 18 to 45 years and the mean age of the Mobile-/Computer-Centered User group is 34.61 (SD= 7.53) years with a range from 18 to 45 years as well. Overall the study include 140 male (34.7%) and 262 female (65.0%) participants, while one participant made no statement.

To define needs and values of TV user easier, we assumed three different user types in advance:

1. Classic TV User

   The main screen for consuming video content is the TV screen. Classic TV users mainly watch live TV and have tendencies not to use the latest technology and only one entertainment system.

2. Multi-Screen User

   The main screen for consuming video content is the TV screen, but multi-screen users like consuming video content on additional screens such as tablets, smartphones, laptops, etc. as well. On average they are interested in using technology and different entertainment systems, especially at least one of the over-the-top (OTT) media services like Youtube, Netflix etc.

3. Mobile-/Computer-Centered User

   They consume video content not only on the TV screen, but also on mobile devices and PC. This user group focuses on mobile media usage. They are very interested in using the latest technologies on the market, different entertainment systems and likely play video games. They tend to use at least one OTT services as well.

RESULTS

Changing TV Behaviour

Although the entertainment possibilities and number of devices available in the households were growing in the past 15 years [4] watching TV, especially live TV, seems to remain an all-time favorite up until now. While Classic TV Users tend to watch live TV at least several times a week (M = 2.53, SD = 1.89; 1 = several times a day; 7 = never), Multi-Screen Users (M = 2.93, SD = 1.99) and particularly Mobile-/Computer-Centered Users (M = 3.45, SD = 2.31; $F_{(2, 400)}$ = 7.53, p = .001) answered in average to watch live TV at least once a week. Whereas Classic TV User seem to prefer the live TV by comparison, the other two User groups seem to switch more often to 'Catch up TV', paid VOD contents and free contents on online platforms such as Youtube, Twitch etc. In addition Classic TV Users show in current study more preferences for traditional activities such as listening to offline radio and reading on paper, while the other groups show more preferences for activities like reading on screen or listening to online music. However, in comparison with other media usage, people use services like to rent or buy individual movies or series on an online platform, to rent and watch movies for example from DVDs, or to download videos/movies/music from the internet considerably less.

Where it was years ago still necessary to use the desktop computer or laptop for being on the web, now, the user groups described to be more often by means of a mobile phone online than by means of a desktop computer, laptop or tablet. Especially the Multi-Screen Users (M = 2.19, SD = 2.04) and Mobile-/Computer-Centered Users (M = 2.09, SD = 1.93) use the internet via mobile phone more often than Classic TV Users (M = 3.41, SD = 2.71; $F_{(2, 400)}$ = 14.40, p = .000). This result supports the trend for more portable devices in media consumption and potentially TV behavior over the past years [4]. Current study shows moreover higher tendencies to use the mobile phone than the tablet, which could be associated with the level of perceived convenience related to different portable devices.

Figure 2 shows an overview of usage in 2018, split for the three groups of Classic TV Users (CTU), Multi-Screen Users (MSU) and Mobile- and Computer-Centered Users

(MCCU). Top of Figure 2 makes clear that indicators like device and device usage do not really help to understand the behavior of the three different user groups. Usage of laptops, computers and mobile phones is on a larger scale roughly the same and does not explain differences in why people opt for example to listen to music on their mobile phone – or not.

WHAT PEOPLE USE- 2018			
COMPUTER AND GAMES USAGE	CTU	MSU	MCCU
Use a desktop computer.	-	-	-
Use a laptop.	o	o	o
Use a tablet (i-Pad, etc.).	o	-	-
Use the internet.	++	++	++
Play computer games on the PC (online and offline).	--	--	--
Play video games (online and offline)	---	--	--
Play browser games (online).	---	--	--
MEDIA USAGE	CTU	MSU	MCCU
Watch live TV.	++	+	+
Watch TV content on 'Catch-Up TV' or Replay.	o	+	+
Watch paid VOD content (movies or series) on platforms such as Netflix, Amazon Prime, Sky Go, etc.	--	o	o
Watch free video content on platforms such as Youtube, Twitch, etc.	o	+	+
Rent or buy individual movies or series on online platforms such as iTunes, Amazon Prime Video, etc.	---	--	--
Watch movies (DVDs, movies from hard disks, etc.).	--	-	-
Rent a DVD or Blu Ray Disc (physical copy) and watch it on the TV.	---	--	---
Download videos/movies from the internet.	---	--	---
WEB AND PHONE USAGE	CTU	MSU	MCCU
Use the internet by means of a mobile phone.	+	++	++
Participate in social networks on the internet (Facebook, Twitter, etc.).	o	+	+
Chat on the PC/participate in forums, boards and/or newsgroups (online).	--	-	-
Chat on the tablet or the mobile phone (incl. WhatsApp, Skype, etc.)	o	+	+
Listen to music by means of a mobile phone.	--	o	o
Use a stand-alone device (digital camera, digital video camera, MP3 Player).	---	--	--

Note. USAGE: +++ several times a day | o neutral | --- never; Classic TV User (CTU), Multi-Screen User (MSU), Mobile-/Computer-Centered User (MCCU)

Figure 2. Usage of devices and services in GB and Switzerland (n=403).

Changes in User Needs

Following Maslow [9] people are motivated to satisfy certain needs for achieving goals. What is important to note is that certain needs take precedence over others. And while basic needs like food, water or air are needs that are more basic, only once fulfilled they allow us to strive to higher goals like self-fulfillment, realizing personal potential or seeking personal growth. Related to media consumption such needs are of course price, but more important factors of convenience, like the ability to adapt the content effortless and timesaving to the context (e. g. watching on a mobile, the ability to choose an instant service, the convenience of easier selection or access).

Figure 3 shows affirmation for the three different user groups to a set of questionnaire items that relate to basic needs for VOD services. An explorative factor analysis shows the tendency to three basic needs - self-actualization needs, ego needs and the tendency for

safety needs (e. g. price). Especially Mobile-/Computer-Centered Users seem to have the requirement to have mobility and as much freedom of action as possible (ego needs).
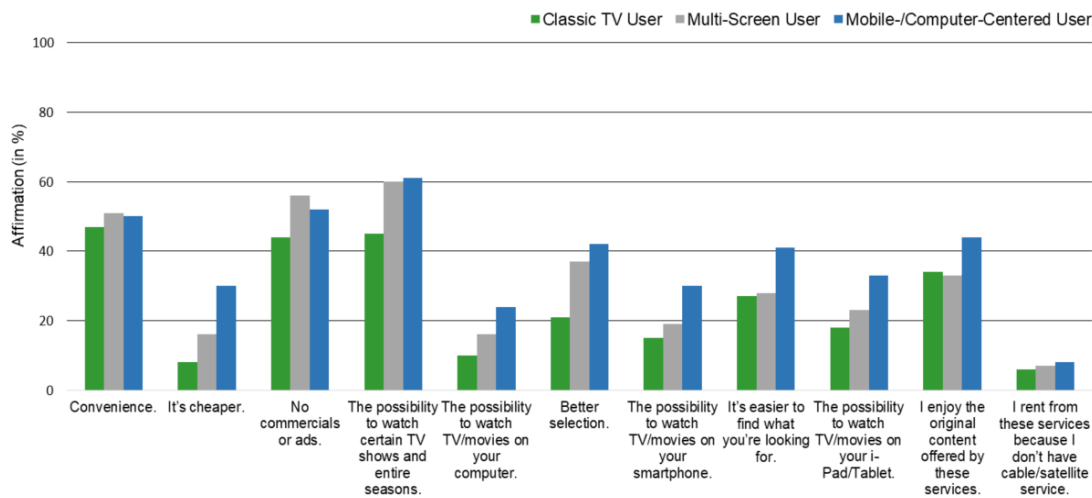

Figure 3: Selection of questionnaire items related to basic needs showing % of affirmation.

In Figure 3 "access to certain content" and "avoidance of advertisement" score highest and "convenience" is for all of the three user groups a clear predictor of choice. These results seem to be a hint to ego needs and maybe the needs for peak experiences (effortlessness) as well. Convenience includes and is related to questionnaire items focusing on usability (easier to find…) and the ability to adapt for varying usage contexts (mobile, computer). Particularly Mobile-/Computer-Centered Users seem to profit the most from VOD services which satisfy that requirement for feeling convenient.

Changes in Values (Marketing)

To understand what people would be willing to do instead of payments for VOD services we asked them to rank their preferences (from 1 most likely to do/accept to 9 least likely to do/accept; see Figure 4).
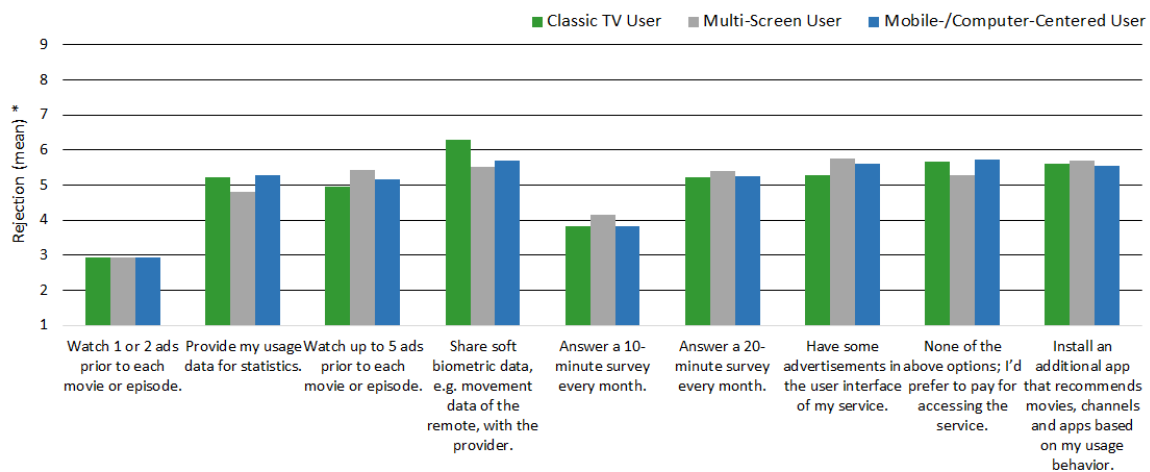

Figure 4. Alternatives for not having to pay for VOD services (1 = most likely to do/accept; 9 = least likely to do/accept)

In correlation with the possible needs for VOD services in Figure 3, we investigated the rejection of alternative payment models for VOD services and got some tendencies related to values. Particularly Mobile-/Computer-Centered Users described values, which included pleasure and broad-mindedness or an exciting life. For Classic TV Users the drift is in context of safety and traditionalism (e. g. in context to sharing soft biometric data). In general all user groups prefer terminal values such as sense of accomplishment and self-respect and instrumental values such as honesty, responsibility and forgiveness.

Changes in Interaction

In addition one part of questionnaire A was focusing on the usage of new forms of interaction, especially on voice. While in the overall population voice as interaction form is only indicated by less than 20%, the differences in user groups on who is using what are interesting. Multi-Screen Users tend to use Alexa, while the mobile- and computer-oriented users tend to prefer Google Home (see Figure 5). These results show that Mobile-/Computer-Centered Users tend likely to prefer Google Home based on their already existing technology choices (e.g. Android as basic operating system).
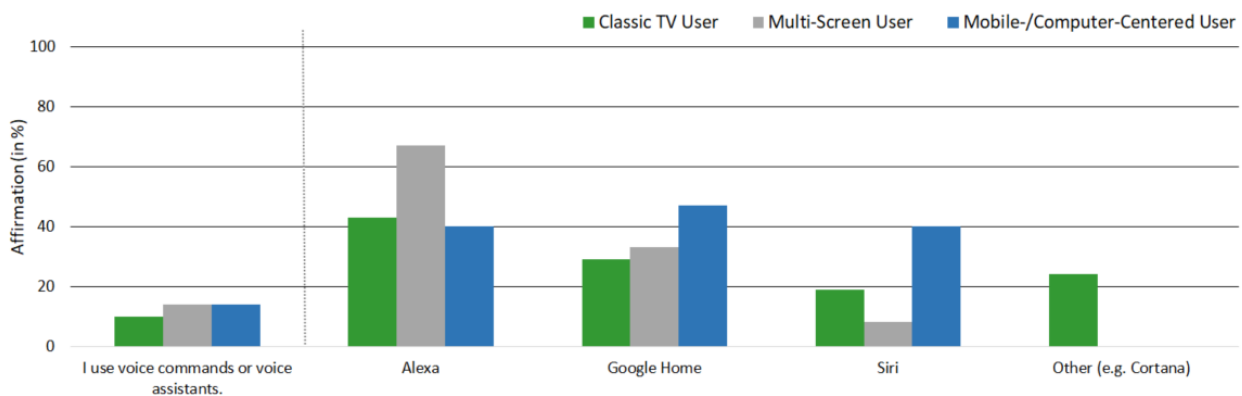

Figure 5. Usage of Voice assistants overall (left) and indication of types of voice interaction used (right)

SUMMARY AND CONCLUSIONS

Based on our results and the original three user groups (Classic TV User, Multi-Screen User and Mobile-/Computer-Centered User; Figure 6), we identified a number of sub-groups based on needs and values that are depicted in Figure 7 and were refined for further research.
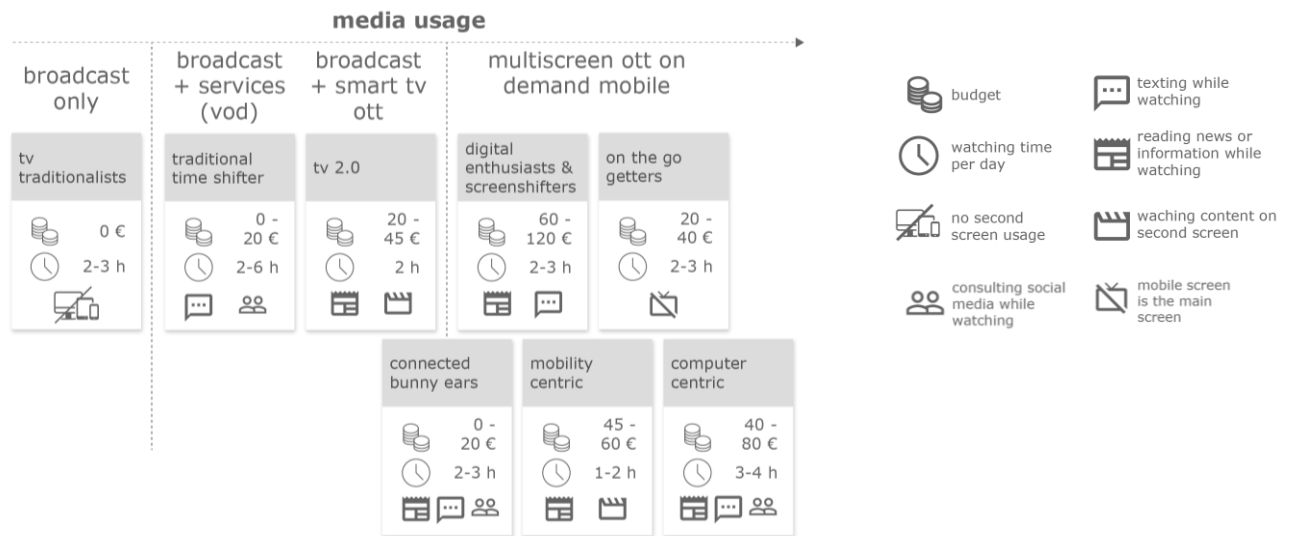

Figure 6. Three main TV user groups

Figure 7. Subgroups of the three main TV user groups according to media usage

The Classic TV Users seem to prefer satisfying "lower needs" and tend to safety and privacy. They follow traditions and old media consumption habits (concretely: watching live TV mainly on TV screen and looking to reduce costs). Multi-Screen Users are connected bunny ears and digital enthusiasts. They do not care about costs and like to get news and information while they are watching TV. Ego needs and self-actualization needs (and values like appreciation, intellectual growth and stimulation) seem to be most relevant for this group. Mobile-/Computer-Centered User tend as aforementioned to ego needs (e. g. freedom) and self-actualization needs (e. g. stimulation). They can be split in three groups, "on the go getters", "mobility centric" and "computer centric".

Taken together, we conclude by recommendations on what kind of technology is likely to succeed within the next 15 years, based on the detailed insights into human behaviour. Convenience is shown as a basic requirement for VOD services according to all of our defined user groups. Half of the users in each user group rated convenience as important aspect of VOD services. Perhaps it is on the one hand related to the need for peak experiences and values such as effortlessness and order and on the other hand related to the need for self-actualization and values such as stimulation, aesthetics and intellectual growth. Our studies show in general that needs and values are associated with technologies and attached services, thus providing a model to predict the success of a new technology based on them.

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