# Considering Users' Personal Values in User-Centered Design Processes for Media and Entertainment Services

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**Abstract.** The way users consume media is defined and influenced by users' values. Methods in User-Centered Design (UCD) processes typically do not address users' values adequately to enable designers to understand the impact values have when it comes to the design of long-term user experience. This work presents two contributions (1) the relationship between users' values and entertainment behavior based on a web survey study, and (2) a proposed set of long-term oriented value-based persona that can be used as guidance for the design of future TV and entertainment services and systems.

**Keywords:** Human values · User-centered design · Media · Entertainment · Long-term user experience · Persona

## 1 Introduction

For the design of TV and entertainment user interfaces (UI) the key to success currently is a design that focuses on flexibility, adding components or content similar to what people experience on their smartphones [7, 11] to the TV. New content is provided in an app-oriented portal that is typically represented via the main TV UI [3]. Especially latest developments of services from over-the-top providers like *Netflix*[1] or *Amazon Prime*[2] show that supporting long-term user experience (UX) e.g., personalized recommendations [13, 16, 19, 23] is at the center of the development of the next generation of entertainment services [2, 6, 24]. Besides that, additional features are accessible by using secondary devices like smartphones or tablets, which allow users to enjoy content on different platforms [9, 11] or enable them to share experiences via social media [14].

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[1] Netflix: https://www.netflix.com/, last accessed: 2022/05/28.
[2] Amazon Prime: https://www.amazon.com/Prime-Video, last accessed: 2022/05/28.

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The main practice in this industry of IPTV providers is to neglect recent design and development trends including the focus on UX [15] and developments towards more user-centered approaches [15] and rather established plan-driven (waterfall) development processes [5, 21]. A key aspect consequently is the ability to understand long-term usage of entertainment systems and services and what aspects, or factors influence long-term usage for time spans like years and not only for several months/days. While in the past 50 years, the design to enhance media experience has primarily focused on users' needs - the need to be entertained, informed, distracted, or relaxed [11, 18], key aspects of how peoples' behavior changes over time and what they strive in their lives on a longer-term, defined as values [25, 26], has been neglected [6].

Values are overall life principles of individuals which guide beliefs, convictions, and daily activities [25] and, in comparison to needs, they are long-term oriented, explain the motivational bases of attitudes [26], are motivating, and provide directions for decisions as well as the emotional intensity of experiences [25, 26]. Consequently, values implicitly define goals that reflect the interest of individuals but also of social communities.

Thus, in this work, we explore if values can be a useful, psychological concept to understand users' long-term usage of media products (e.g., smart speakers, remote controls) and services. Based on insight into the relationship between users' values and media consumption, we aim to tailor the User-Centered Design (UCD) approach toward more value-orientation to better support long-term UX by proposing a set of value-based personas.

## 2   Related Work

### 2.1   User-Centered Design, System Development, and User Experience

Designing with a focus on the end-user by following the UCD approach facilitates the creation of highly usable and accessible products [20]. Iteratively integrating and reflecting on users' needs, expectations, traits, and motivations support designing for a higher experience [20]. Today's software engineering in the media sector tends to incorporate UX as a central aspect of design decisions. We define UX (momentary UX) as "how people have experienced a period of encountering a system" [24] with their aspects of emotions, personal beliefs, and preferences [15]. Even though the momentary UX refers to the actual usage of a product or service, it is influenced indirectly by the experience before a first encounter (anticipated UX) such as related systems, advertisements, or others' opinions [24]. Besides that, UX extends after every usage through reflection on the actual usage or opinions raised (episodic UX) and can also change when having used a product for a long(er) time (cumulative or long-term UX) [24].

For the field of IPTV, key factors for UX that have been identified [8, 22] include "Aesthetic visual impression (beauty and classic aesthetics); Emotion; Stimulation; Identification; Relatedness; and Meaning and Value" [22] as well as the form of interaction technique, and the relation between UX and basic usability [8, 22]. While personal attitudes in terms of needs have been included in such evaluation methods for the UX of IPTV services to support momentary UX, values had not been considered to our knowledge as an opportunity to especially enhance long-term UX.

## 2.2 Basic Human Values

Basic human values are defined as "concepts or beliefs about desirable end states or behaviors, that transcend specific situations, guide selection or evaluation of behavior and events" [25] and are used to "explain the motivational bases of attitudes and behavior" [26]. Thus, human values are goals that arise from different desires and situations and are guiding principles in a person's life. Values define different goals that reflect the interests of an individual. They are motivating and provide directions, as well as emotional intensity. Values also act as judgments and justifications of actions and are acquired through both social groups and unique learning experiences [27]. Overall, values are critical motivators of behaviors and attitudes [26]. The theory of basic human values from Schwartz et al. [26] reports four main value groups with two up to five values per group (see Fig. 1):

- *Openness to Change*: people who are highly into openness to change strive for the independence of thought and actions and are ready for changes [26]. Values: self-direction, stimulation, hedonism.
- *Self-Enhancement*: people highly into self-enhancement emphasize the pursuit of one's interests and strive for success and dominance over others [26]. Values: hedonism, achievement, power, face.
- *Conservation*: people highly into conservation emphasize order, self-restriction, preservation of the past, and resistance to change [26]. Values: face, security, tradition, conformity, humanity.
- *Self-Transcendence*: people highly into self-transcendence emphasize concern for the welfare and interests of others [26]. Values: humanity, benevolence, universalism.
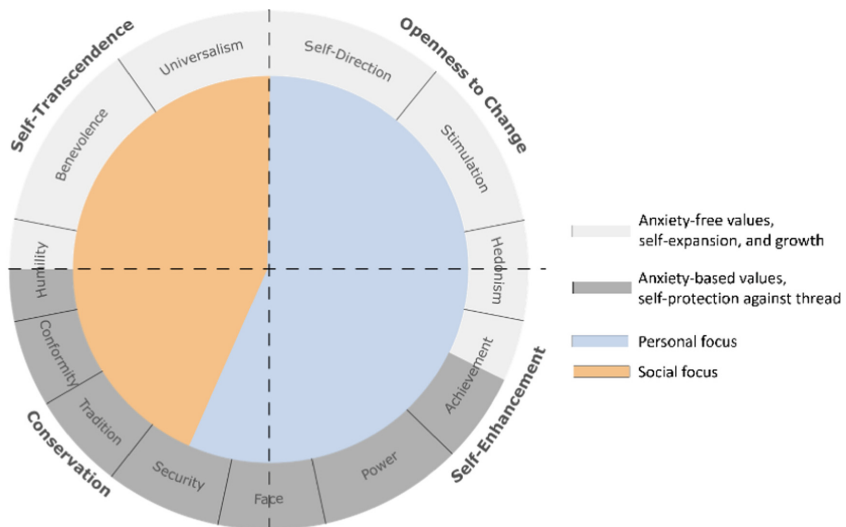


**Fig. 1.** The four different value groups (quadrants) and their underlying values (gray cycle) - are adapted from [26].

Overall, there are 12 values (for value group alignment see Fig. 1) that are unique to one another as they underlie different motivational factors and therefore represent different overall life goals. The more apart values are presented in Fig. 1. the more different the underlying motivational factors are (e.g., values opposite to each other like Achievement vs. Benevolence). Overall, these values and their representative groups apply to all humans, independent of their religion or culture [26].

## 3   Problem Description

The design and development of TV and entertainment services are typically driven by technological developments and the importance to evolve systems. Due to the legacy of the technology in the field, a key aspect in the design of such services is to understand the long-term usage of entertainment systems [6]. While Allen et al. report that users' values can impact buying decisions [4], little is known about how those values affect media consumption and how users' values can be integrated into UCD approaches for supporting long-term UX. We believe that if designers and IPTV providers consider users' values, and tailor their products to support one or several values better, their products can enhance users' overall experience.

However, as of now, little is known about how values (1) are connected to users' media behavior, (2) shift over time, and (3) how this can be considered in the design of future media-related products. In this paper, we answer the following research questions:

- *How do values impact users' media behavior and consumption?*
- *How can we design future products that take the value changes and their effect on media behavior into consideration?*

## 4   Method: Survey Study

We conducted a web survey in December 2021 on *SurveyMonkey*[3] and focused on the assessment of the user's value shifts over the past five years and its accompanying changes in their media behavior and media consumption. The study was submitted to and approved by the ethical review board of the researcher's institution.

We used the Short Schwartz Values Survey (SSVS) [10, 17] to assess participants' values with ten validated questions, one question per value (power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security). Participants were asked for each value to decide on a 9-point Likert scale if the value is of supreme importance for them ($= 8$) or opposed to their principle ($= 0$) [10, 17]. To determine a person's main value group, the average scores of the individual values questions per value group were processed according to [17]. For entertainment-oriented features, we asked three questions based on a 7-point Likert scale (extremely important to not important at all) referring to five important media categories [1]: audio (e.g., music streaming, radio, and podcast), video (traditional TV, video on demand, and video

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sharing platforms), news, social media (e.g., Facebook, Instagram), and digital communities (e.g., Reddit). To assess the values-shift over the past five years each participant answered the SSVS and entertainment-oriented questions twice. Besides that, the survey also included demographic questions (age, gender, home country) and questions related to technological equipment owned and entertainment services used.

## 5    Results: Media Consumption and User's Values

The recruitment of participants was outsourced to a professional agency. Overall, 144 people from German-speaking households (Germany = 93, Austria = 39, Switzerland = 11, Other = 1) participated in the survey study. Participants' average age was 38.15 years (SD = 7.42 years), ranging from 23 to 61.65 participants identified as women and 79 as men. Filling out the survey took on average 17 min and participants received compensation of 2.5 Euros. Overall, 103 out of 144 participants use free or cable TV, 94 video-on-demand services, and 106 indicated using social media.

### 5.1    Value-Shift

Comparing the changes in media behavior and the related value changes - based on the four value groups, between now and five years ago, we performed non-parametric Wilcoxon tests due to the ordinal nature of the data. Investigating the value shift, our data outlines that participants are today significantly more into universalism ($Z = 2.79$, p = .005) and benevolence ($Z = -2.64$, p = .008) than 5 years ago. Overall, we found that participants are nowadays significantly more into the value group of *Self-Transcendence* ($Z = -3.25$, p = .001) compared to five years ago. Even though participants value security today more ($Z = -2.99$, p = .003), a value shift towards the group of *Conservation* could not be observed ($Z = -1.56$, p = .119). In addition, there is a slight increase in the importance of self-direction ($Z = -2.99$, p = .052). However, the overall value group of *Openness to Change* does not show any difference between now and then ($Z = -.188$, p = .851). Besides that, there was also no difference observed for any values connected to the group of *Self-Enhancement* or the group itself ($Z = -.311$, p = .756).

### 5.2    Media Consumption Change

About media consumption and usage, our data outlines that having a big screen for watching media content ($Z = -2.108$, p = .035), having access to content at any time ($Z = -3.145$, p = .002), and watching videos without interruption (e.g., advertisements) ($Z = -3.159$, p = .002) is nowadays more important than it was five years ago. In addition, users strive significantly stronger for the content of their interests ($Z = -5.445$, p < .001), access to both local ($Z = -4.284$, p < .001) and global news ($Z = -2.865$, p = .004), and the possibility to listen to music at any time ($Z = -2.161$, p = .031). However, watching shows or content directly from live TV broadcasts is nowadays less important than it was in the past ($Z = 2.980$, p = .003). Apart from these changes, users report that accessing online libraries and being able to select from a variety of different content is still as important as it was in the past. This also holds for having access to social media to stay

informed about other people and to connect with friends. In addition, it is important that media is relaxing, inspiring, fun, entertaining, and enables to gain knowledge. Besides that, we observed dependencies of features and functions (correlation). For instance, when users use an online video library, they want to be able to select from a variety of different content ($r(142) = .710, p < .001$). Users also prefer a big screen in combination with different content ($r(142) = .717, p < .001$). In addition, when having access to a variety of content, users seek access at any time at any place ($r(142) = .718, p < .001$). When it comes to making a buying decision, a product that provides additional features (e.g., voice control, 3D, or virtual reality) should be compatible with different devices (e.g., smart home) ($r(142) = .748, p < .001$). In addition, a product out of renewable resources should also be produced sustainably ($r(142) = .905\ p < .001$).

### 5.3 Media Consumption Based on Users' Values

To understand the media consumption based on users' values, we looked detailed into those answers from $n = 99$ participants that could be attributed unambiguously to one of the value groups as their most important one. We excluded cases that reported having two or more value groups of similar importance. We investigated how important the assessed media characteristics are for certain value groups.
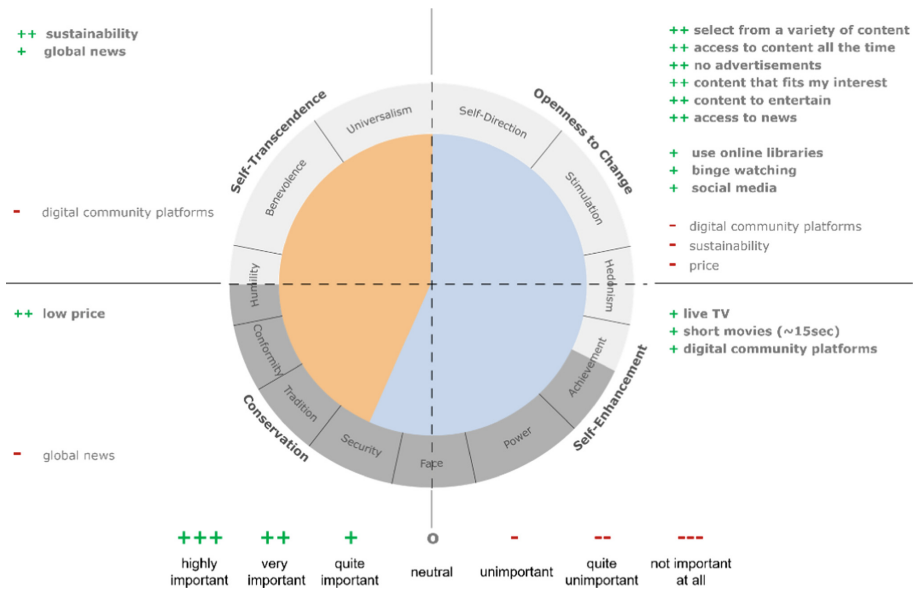


**Fig. 2.** Importance of media characteristics depending on users' main value group. Importance ranges from highly important (+++) to not important at all (---).

In Fig. 2, we outline the main characteristics for each value group ranging from highly important (+++) to not important at all (---) (also a 7-point Likert scale as used in the survey). We report in the following only statistically significant differences between value groups.

Survey participants reported *Self-Transcendence* as their most important value group (42.4%), showed a higher interest in sustainability-oriented offers and products, and would be interested in entertainment services supporting their behaviors and choices to support sustainable lifestyles. Their main interest lies in global news, while they perceive digital community platforms (e.g., *Facebook*) as one of the services they would not value long-term. *Openness to change* is a key value for 18.2% of the participants. They are eager to have access to content at all times, want to select from a broad variety of content, value services where content fits their interest (to be entertained, to receive news as key categories), and in general prefer advertisement-free services. They are the group that is into binge-watching the most and value social media as an information source. Global news is least important to participants who self-reported *Conservation* as their central value (32.3%). This group has only one key indicator when it comes to media entertainment: price. They are the least likely to spend money, to accept ideas on how to support a more sustainable lifestyle, and their local environment and surroundings are key for the media entertainment-related choices. With only 7,1% of participants who identify with *Self-Enhancement* as a key value for life, this is the smallest group in terms of representation in the overall survey sample. This group values live-TV, and short movies, and not surprisingly wants to use community platforms the most.
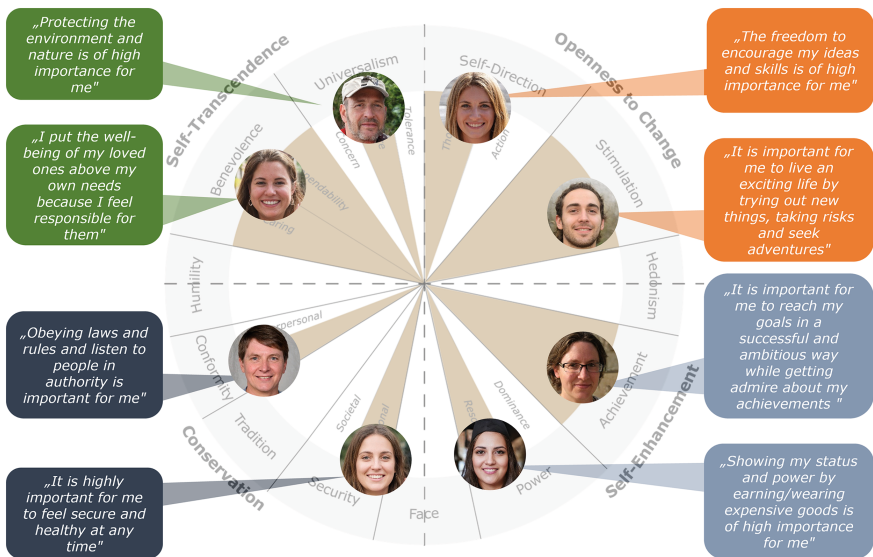
## 6 Value-Based Personas



**Fig. 3.** The defined eight personas, aligned with their underlying main value of the Schwartz value theory [26].

To best support long-term UX and customer satisfaction, we defined eight typical, differential persona types depending on key values, associated with media behavior as well

as media service affinities. Figure 3 shows how the eight personas are distributed over the different values, based on the original description of the Schwartz values theory [26]. Overall, a persona should be bold and represent unique characteristics [12]. Since every value group consists of two or more values with a unique motivational background [25, 26], we created only two personas per value group. This allowed us to cover every value group as best as possible with bold personas while not involving too many personas, which might make design decisions impossible [12].

**Table 1.** Detailed overview of the name, underlying value, quote, and media behavior of the eight defined personas

| Persona | | Value | Quote | Media Behavior |
|---|---|---|---|---|
| **Openness to Change** | | | | |
| | Marie | **Self-Direction** | *"The freedom to encourage my ideas and skills is of high importance for me"* | • Access to media all the time <br> • Knowledge gain through media |
| | Luke | **Stimulation** | *„It is important for me to live an exciting life by trying out new things, taking risks, and seeking adventures"* | • Variety of content <br> • Binge-watching |
| **Self-Enhancement** | | | | |
| | Simone | **Achievement** | *„It is important for me to reach my goals in a successful and ambitious way while getting admired for my achievements "* | • Quick information via short movies and clips |
| | Sylvia | **Power** | *„Showing my status and power by earning/wearing expensive goods is of high importance for me"* | • Connection with others via digital community platforms |
| **Conservation** | | | | |
| | Anna | **Security** | *„It is highly important for me to feel secure and healthy at any time"* | • No changes |
| | Mark | **Conformity** | *„Obeying laws and rules and listening to people in authority is important for me"* | • Low price |
| **Self-Transcendence** | | | | |
| | Diana | **Benevolence** | *„I put the well-being of my loved ones above my own needs because I feel responsible for them"* | • Access to global and local news |
| | Anton | **Universalism** | *„Protecting the environment and nature is of high importance for me"* | • Sustainable media consumption <br> • Sustainable media products |

Overall, these total eight personas are defined by a unique, underlying value in combination with the associated media behavior investigated through our media survey. Since values are long-term oriented guiding principles, these specific types of persona support designers in making decisions beyond what normal need-oriented personas would enable. Thus, they enable implicitly to design for long-term values instead of short-term needs which helps the design to already initially lay the focus towards long-term UX

and customer loyalty in addition to instant gratification. Table 1 provides an overview of all personas and their main characteristics derived from the values and their media behavior.

## 7   Discussion

The personas in this work represent the values and media behavior of users from middle Europe, with a focus on German-speaking audiences. These type of personas describe users differently allowing to segment users into value groups and enabling service design to be focusing on long-term oriented users' values [25, 26] when it comes to understanding key moments for long-term UX.

To maximize their application, designers, producers, and marketers must take into account as many of these life-defining values as possible when conceiving products, content, and marketing pieces. To do so, they have to identify how users' values interfere with their product or service. As an example, a new streaming platform offering social network features will please the "benevolence" (sharing experiences with others, staying in touch) and "power" (displaying wealth, themselves) value groups the most, while displeasing the "security" group who might have concerns about the use of their personal data when using the system. The personas can help identify every group's apprehensions about a feature, positive or negative.

This methodological approach is also valuable when looking into communication between stakeholders. They can serve as means to discuss different properties that might be contradicting and can help to align requirements like the business handling aspects (e.g., payment processes), security requirements, technical requirements (bandwidth when it comes to streaming, infrastructure like set-top-boxes, etc.) and user-oriented properties like UX or usability. For instance, when designing for services it is difficult to discuss which key software qualities or features should be most important. It might seem tempting to improve UX with high-definition videos, but for the users who value sustainability, this might be a negative aspect in the long term, as higher resolution means (in the end) more use of electricity [28].

Even though values are independent of cultures [27], the relationship between values and media behavior might not be transferable to other cultures, and regions. To use this approach, it will be necessary to redo the media studies as well as the set-up of the persona for non-German-speaking regions. This is effective when it comes to large-scale developments of media infrastructures with a design and development team that (in the IPTV domain) comprises at least 50 if not up to several hundreds of designers and developers involved.

## 8   Conclusion

Is there a relationship between which values people self-identify and the media that they consume? Is it beyond the simple fact that it would affect the buying decision [4]? And if there is a relation, how could we benefit from this knowledge when it comes to UCD processes? Motivated by these questions, we have been demonstrating in this work how human values, in general, define the way users consume media and how

they influence users' media behavior. We further used these insights to enhance UCD processes to support long-term UX. Therefore, we developed a set of eight value-based personas to guide future designers toward the generation of long-term UX impacts and higher customer satisfaction with entertainment services. Thus, the contribution of this article is two-fold: first, we investigated the relation between users' values and their media behavior and outline that human values affect not only users' buying decisions [4], instead, they also influence what and which type of media users consume. Second, we made a methodological contribution by developing long-term oriented value-based personas that can help in a UCD process of entertainment services to better design for the long-term UX due to the ability to focus on values.

As a next step, we see the application of such types of design support in a large-scale TV and entertainment service development in Europe as a case study to validate the effectiveness of our personas. When adapting and adopting methods, the key challenge is to show the usefulness of such an approach, investigating how to apply this approach cross-domains, for example when it comes to entertainment in more untraditional environments like cars or inside an aircraft.

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