




Using Empathy Mapping in Design Thinking Process for Personas Discovering

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Abstract. Exploring user attitudes and behaviors within the domain of interests helps the user experience team to match the user with a deeper understanding. The mapping process also reveals any gap in existing user data. Design thinking is the ground-breaking and cooperative approach to problem-solving that puts the user first to make user-centered products and services. There are many various design thinking activities that use to generate a thoughtful of the users or customer, including the conception of personas. This paper revisits the concept of persona and draws the connection of using empathy map to build persona within the design thinking process. Also showing the benefit of empathizing method to construct the effective persona. This can be used for the benefit in Human Computer Interaction(HCI) designing processes or marketing analysis.

Keywords: Persona · Design thinking · Empathy · HCI · User-centered design

1 Persona Concept

The first step in understanding users is creating a user profile. When the designer developed a detailed user profile. Persona is possible to develop from user profile (role model of end users): is designed to help specific users to focus during the design. Scenario is daily use of the users. Persona helps to test system and build functionality of products that users will want to use [1]. Persona are not real people who have a set of behaviors and requirements designer want to design for, nevertheless represent people throughout the design process. They are the theoretical models of real users. Even if they are imagined however they are determined with significant stability and accuracy. The persona is and gives the user life style and helps the designers feel connected with them. Every team members of designers thinks about the same person instead of the individual's work on their own vision of who is the user. If there is no specific goal to focus on, “(target)users” can be varied from experts to beginners. Main goal of a persona is to help someone imagine the intended users of a system. Their primary purpose is to form designers, researchers, easier lives while designing products. It is important to understand whether the merchandise is going to be useful for this sort of persona before entering the market.

Persona can use it as a tool for discussion about advice, storytelling, role playing, and other use activities such as “*Rosy won't use that device.*” Persona can also help new designer in the team learned quickly which users are hypothetical people created to describe specific users, not every end user. Then designer create models that can

represent end users. Personas are also tools that are also used in many parts of interaction design [2] as follows:

- Requirements: Understand the wants and explain user in a clear way.
- Design: understand what this persona needs.
- Evaluation: detect needs that are or are not being encountered.
- Marketing: aim the user needs that have already been recognized and intended for.

Persona are used extensively by Human Computer Interaction (HCI) designers within the design process. To defining the (target) user to explaining the understanding of the persona, helping designing process at different stages of the planning process of the HCI system [3]. To illustrate the design process of the model, in order to reflect organizational problems and to systematically explore design options. By considering differences in expectations, scope, and goals of planning-related processes such as the role of needs, requirements, necessities. The questions that designer need to ask is: Will it characterize the design concept or the HCI design process? [4].

The persona's disadvantage appearances less than scientific (dilemma issue). Designer can use a small number of people; Persona is sometimes an imaginary description of the persona who is truly exist. The persona can be true in real-life [5]. The use of that persona is appropriate if designer create a personality profile that is as detailed as possible for the fictional agent of the target audience. The target audience need to be defined in advance for this to work. Based on empirical data collected with the help of web analytics and character tracing, self-created will be created later. Demographic and socio-economic information should flow into these personality patterns. Social media also provides good insight into the target audience. Many users have profiles that are publicly accessible. These provide accurate insights into various buyers' interests and lifestyles which can be created as persona [6]. With buyers' personalities, designer can tailor the advertising efforts, marketing strategies, and content creation to capture each type of buyer. If designers can have people in their mind, instead of a crowd that does not know the strategy.

Personas are characters that designer simply generate supported the research to point out the sort of users which will use the service or product. But added with real-world features like traits [7], disappointments, and other related characteristics. Personas are people that represent a group of users with different needs, objectives, and expectations. Persona may help designers and merchandise owners decide whether the merchandise or service will slot in their daily lives. Easily which will provide a transparent picture of the person's user experience section. All elements of the character should be chosen carefully, as these are the qualities which will give us the idea that it should be like. This is often a time consuming but worthwhile process. Personas also are very useful once a prototype test has been taken that appears at the end and finds problems that we will face with the system flow.

The reason the persona is so important. when an apps or web applications or maybe a landing page have to be developed, developer would like to understand the users who are getting to use it or see the merchandise that we are designing. Knowing the audience will help developing better solutions and real results that users want from the merchandise. Some interesting inquiries to ask when checking out persona in design concepts are [8, 15]: 1. Who is the ideal customer? 2. what's the present behavior of

users? 3. what is going to users look like? 4. What are the requirements and final goals of users? 5. what’s the answer to their current problems? 6. Why do they hate current solutions? Understanding the requirements of users well, it can create products that service better. The transparent personality in design thinking will assist designer identify user needs and communicate better with the proper solutions that users need for an extended time. How designer team define user characteristics: before defining the identity of a user, designer want to study the users and their behavior well and gather enough data and organize the info and make the ideal customers (Fig. 1).



Fig. 1. Example of persona (Sources: https://commons.wikimedia.org/wiki/File:New_Readers_User_persona_-_Sandeep_-_India.png)

Attention is a critical element in human-centered design and style. What is consideration? Why is it noteworthy to style solutions that engagement for user/people? It is not only but see what meaning but to determine how it helps designers to make solutions that service. In dissimilar, lack of attention may result in product failures, additionally, empowering ideas can be understood that everybody can understand. As already mentioned, the persona has widespread misunderstanding: many people think that it is the persona who is invented but that is not true. How do we determine what characteristics a character has, what qualities, what are their names, and what is important to them? But designer do not delusion these things out of the head. The basis

for all good people is information, data, and insights about the users. designer want to develop a product for particular persona.

Keep the persona to a minimum 3 to 4 good personas. If designer can manage two things better than all. It should not exceed five people, it will be there to clarify the target audience and that will make it more difficult in personality. Even many large online stores that have a diverse product range and a consistent diverse customer base can work with three to four people. For good persona, there are only two criteria:

1. They must live inside the minds of readers when they read their descriptions.
2. They must be correct.

We can easily confirm the first point for good persona:

- Does this description make a good impression on this persona?
- Do we feel like we can recognize them if we meet them on the street?
- Have this coworker neutral and ask these questions if we are not sure who we are. It's a little harder when talking about the second issue. In order to test this, we need to study user research and market research again.
- Do they match the description?

Double check carefully that we haven't created the desired personality.

The persona seemed to feel thoroughly and perfectly designed. For example; *“Willy, 55, an employee in the financial department of the Bank, no children. As a technology supporter, he also gives people advices all the time about using devices.”* That persona may exist but most likely not very much in the real life. That is why Willy is not a very good persona. Designer should avoid modeling persona with real people. In the end, the character means the combination of many qualities in one. They do not have the same personality when talking about them (at least not for all). If the character is truly a person, everybody with the real same information, who will feel like being tracked and it should be avoided it at all costs.

This is outline the ten-steps process as described by Lene Nielsen [14], and briefly described in [9].

1. Gather as much knowledge about the users as possible through high quality user research of real users in the target users group.
2. Begin to create general concepts about various users within the focus area. This should include creating assumptions about how different users can use the relationship diagram and attention map to perform this step.
3. The goal at this stage is to decide whether to support or reject assumptions about differences between users.
4. Decide the appropriate number of final persona to build based on the assumptions about different types of users. So how can the target audience be divided into different types of users?
5. Make sure to show enough understanding and attention to the users. It should include necessary details about education, lifestyle, interests, values, goals, needs, limitations, desires, attitudes and behavior patterns. Personal details worn to give the character a realistic personality. 1–2 pages that describe the person in detail.

6. There should be a list of the needs, including a list of situations in which the product or service will be used.
7. Accept by the organization. Reorganize the group at this stage and ensure that as many team members as possible are involved, accepting and acknowledging the development of the person. We can ask the team more broadly for their opinions at this stage or (even better) let them participate in the process.
8. It is important to decide first that we want to share this knowledge with those who are not directly involved in the process - for new employees and external partners in the future.
9. Create a situation for you. It will get a better understanding of the problems that individuals want to solve when we show these situations, which will prove to have a lot of information for the overall design process.
10. Designer should edit the description commonly, as new information, perspectives may affect the way we build or describe the personality. Sometimes designer will have to write an explanation of the existing identity, add a new personality or get rid of outdated words.

2 Empathy in Design Thinking

In general, empathy is the good tool to examine the world through the judgements of others to confirm what they see, feel what they feel and know things while they are doing. Of course, no one can feel what other person do. But we will plan as closely as possible and we will do so by placing prejudiced ideas and selecting to know the thoughts, and desires of others in its place [10].

In design thinking, empathy shown in Fig. 2 is described in the IDEO's human-centered design toolkit [11], which is a deep understanding of the issues and reality of the persona we are designing. Learn about the needs that person face, as well as revealing their hidden needs and wants to explain their behavior. In doing so, it is good to have a sympathetic of person's situation, including the role and collaboration with their environment.

Empathy helps designers gain greater appreciation and insight about person's expressive and physical desires and therefore the way they perceive, realize, and cooperate with the realm around them. It will help knowing how motivating all of their lives are, especially within the context in question. Unlike traditional market research, empathy research does not involve facts about persona. Nevertheless, more about their motivation and ideas (For example, why do they like to watch TV compared to going out to jog) is inherently subjective, as there are many interpretations related to discover what persona mean instead of what they confirm [12].

Empathy is the first step in the planning thinking process. The next steps are usually summarized as follows: determination, ideal, prototype, and experiment. Within the arena, the goal as a designer is to be aware of the exact sympathetic of the persona which are designed and therefore the problems we are trying to solve. This process involves detecting, appealing, and giving attention to the persona which are designed in

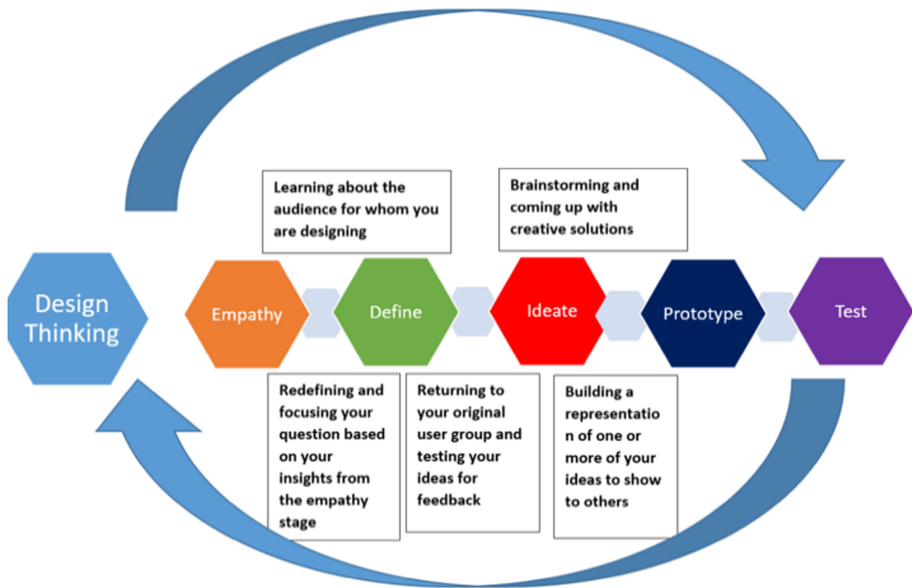


Fig. 2. Design thinking model (Source: https://commons.wikimedia.org/wiki/File:Design_thinking.png [11])

order to get to know their experience and motivation, as well as being occupied in their own physical situation.

Attention is important to the user-centered design process. For example, design thinking and attention will help design thinkers build their expectations about the world in order to understand users and their needs from time to time. The person must gather a lot of information in the thinking planning process. Within the Empathize process of the design process, designer will develop an understanding, experience, experience, insights and observations that the person will use. To create the rest of the design project The designers needed to develop the easiest possible understanding of our users, their needs, and therefore problems arising from the events of the product or service. Actually, designer will design. If designer has time and money, they should consider an expert advisor to find out more. But that person will be surprised that the persona and the team will get through the Empathize method.

Here are some of popular Empathize methods: Assume the idea of a beginner, ask what - why -, ask 5 whys, interviews, sympathetic interviews, build empathy by comparing, take education using photos and videos, use personal journals, photos and videos, very engaged with users, share stories and capture images, body storm, create travel maps. Sympathy, the word that is often confused, is about the power of a person to have or show concern for the well-being of others, while compassion does not need experience. In the deep in what persona. In addition, compassion is often associated with feelings of impartiality and advantage; When we feel compassion, we tend to point out compassion and grief for others.

The Empathy map is a collaborative visualization used to identify what we know about certain types of users. It transmits knowledge about users outside to 1) create common understanding about user needs and 2) help them make decisions.

Empathy Map as example in Fig. 3 for the target group to explain what they think and feel more and more deeply The question consists of 6 topics which are Think and Feel, Hear, See, Say and Do, Pain and Gain. There are users who are more possible to benefit from the service than others. To create more context and insight for these users, to create ‘Special layers’ on top of existing persona using empathy maps. Designer add a rotation to Empathy Mapping [16] by focusing on personas during post-synthesis workshops with our stakeholders. Renamed Persona Empathy Mapping, this process simplifies the categories to three main issues: Think, Feel, and Do, and zeroes in on a persona within a specific situation relevant to the product domain.

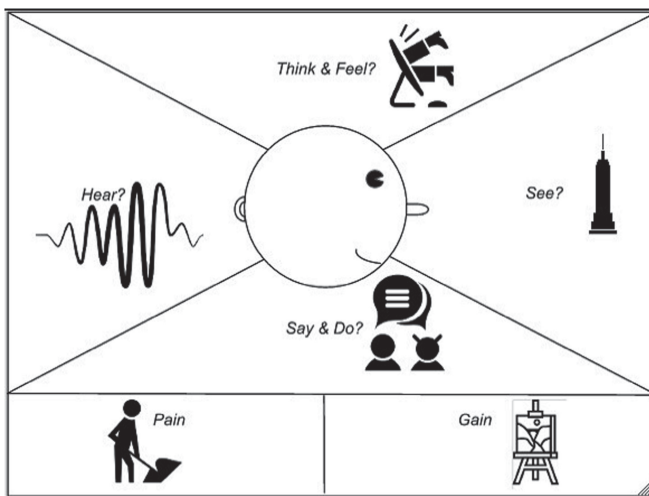


Fig. 3. Empathy map (Source: <https://flic.kr/p/puLPuR>)

The Empathy map provides in-depth content about what users are saying, thinking, feeling, and doing while accessing the service.

Key benefits I discovered from using the attention map [13]

- Easy to update after each round of research
- They focus on the user experience and behavior in the latest round of photography
- Easy to refer to within the playing field
- Help the team think that our users are real people.

After filling out all the areas of the Empathy map designer get a comprehensive information about the users. It's worth it to transfer this information to the model of the one particular personas. Each persona should include the basic elements reflecting the map's areas, as well as additional, specific information about the imagined user. Every

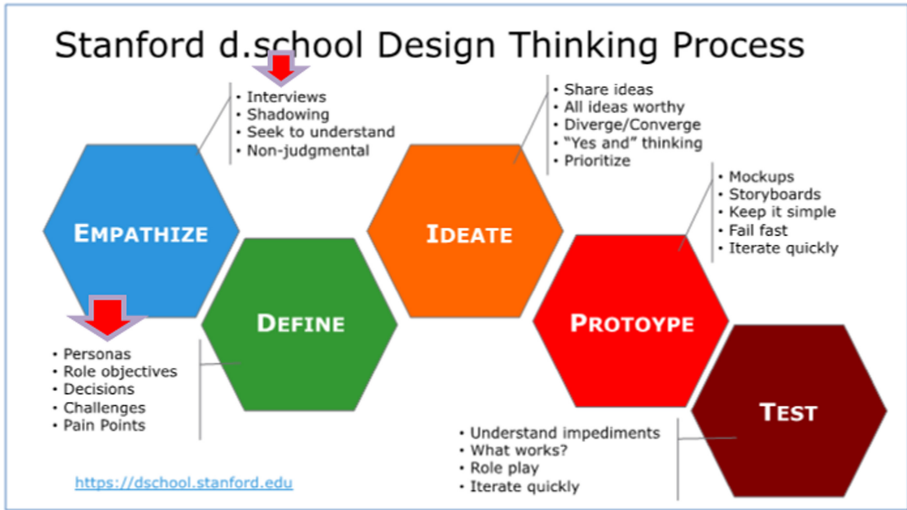


Fig. 4. Design thinking model (Source: adapt from <https://dschool.stanford.edu>)

map character, when turning into a persona, should represent a person which, it will be easier to understand during the design process.

3 Conclusion

In general, an individual is easy for people to understand and care for users. But that person is seen as not detailed and cannot be used as the understanding benefits of an individual should reach out to a wide range of stakeholders. The idea of designing or developing without using a persona can be very difficult. The more we know the users, the better the product or the software will be. That's why people help everyone on the team focus on occupied with users.

User-centered design has greatly benefited people. It just has to make sure that the identity is truly true. Persona development means living in a state that needs it. From then on we can improve very well for these people but if they are unrealistic, real people will not understand or produce or buy the product. Nonetheless if the real data and knowledge of the users form the core, there are every purpose to advance oneself or to improve them.

The benefits of persona are powerful and perfect ways to express design needs, helping the team are designing to easily explain management. It allows designer to see users as a persona instead of a set of design specifications. Of course, the concept of empathy involves the creation of the right self. There is also a way to create Empathy maps, which is useful for synthesizing research data to understand users. Empathy maps are great for creating Personas by identifying users with different intentions. Being a collaborative tool, Empathy Mapping helps the design team focus on users and is a good idea for creating Empathy Mapping workshops with stakeholders as well -

helping to develop user-centric ideas. However, there are simple workshop activities where we can facilitate the stakeholders. (Or whoever is actually responsible for product development) to build awareness for the end users. We call it Persona Empathy Mapping. And also in Stanford “dschool” framework process, in Fig. 4 show that persona can be discovered in defining phase and the process of empathizing is related to how we can determine persona.

Empathy Mapping helps us consider how others think and feel. Research notes are generally categorized according to what research interviewees are thinking, feeling, doing, seeing and hearing when they engage with the product. It helps teams not have to focus on behavior to determine the mood and experience of users as well. Persona Empathy Mapping is a sympathetic workshop activity that aligns with the needs of target users and pain points and connects channels. Interpersonal and design concepts. Designers increase rotation for Empathy Mapping by focusing on the persona during the combination workshops with stakeholders.

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