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A Semiotic Narratological Approach to the Facilitation of Persona Method for Enhancing User Experience[1]

Dong Uk Im[1], Hak Ro Yoon[2] and Jong Oh Lee[1]

[1]Hankuk University of Foreign Studies,
107 Imun-ro, Dongdaemun-gu,
130-791, Seoul, Korea
[2]Kangwon National University, 1 Kangwondaehak-gil,
Chuncheon-si, 200-701, Gangwon-do, Korea
im.dong.uk@gmail.com, ivy8176@kangwon.ac.kr, santon@hanmail.net

Abstract

As digital technology became popular, mass production and consumption underwent a change and customized multiple line production systems and variations in consumption patterns emerged. Consequently, "user-centered designs" that satisfy consumer demands by focusing on consumer preferences became popular. The significance of user interfaces — embedded in electronic devices and computers and improves usability and user control — is coming to the forefront. The User experience, which not only provides elements that are convenient to use but also attempts to trigger emotions such as joy and fun has been receiving recent attention. This study presents methods to correct deficiencies among users by facilitating achievement of individual goals through the actant model, and by supplementing the establishment of a scenario suitable for the user through canonical narrative schema.

Keywords: *UI, UX, Usability, Persona Method, Semiotic Narratology, Structuralism, Greimas*

1. Introduction

1.1. Rise of User-Centered Design

As the days of industrialization that focus on manufacturing were phased out by digital technology, the trends in traditional (single line) mass production and consumption changed; customized multiple line production systems and variations in consumption patterns emerged. With a variety of products now available to consumers, only those products that appeal to consumers sell. Therefore, existing manufacturing and advertising strategies that emphasize product functions and performance are changing to satisfy consumer demands by focusing on consumer tastes.

The social structure for production-distribution-consumption includes the seller/producer at one end and the buyer/consumer at the other. During industrialization, people generally purchased products based on the intentions of the seller/producer. Today, however, sustainability depends on manufacturing and marketing products that satisfy the preferences of consumers.

Thus, "consumer behavior research" and "user-centered designs" have been introduced. These methodologies involve analyzing consumer intentions and behaviors to improve products or services; further, they incorporate consumer feedback into the production process. Consumer behavior research is conducted by special marketing

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experts, but user-centered designs are created by the persons in charge of product planning, production, sales, and feedback. User-centered designs facilitate product modification, which enables quick feed-back and increases efficiency.

Cooper *et al.*, (2007) proposed the "goal-directed design process," in which products are designed based on users' needs. It emphasizes investigating users in the modeling process to understand appropriate contexts for design. An estimated scenario is then established and reflected in the design.

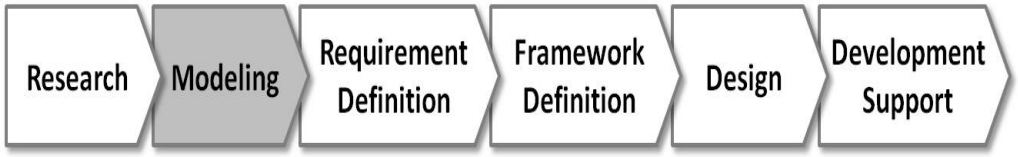


Figure 1. Goal-directed Design Process

1.2. The Importance of User Interface, Usability, and User Experience

To apply user-centered designs, product planning and production processes must be flexible. Because the manufacturing industry relies on production facilities and processed raw materials, it is difficult to change products according to market conditions and consumer demands. In the growing software industry, however, with its advanced digital technology, improvements and innovations can be easily made.

Embedded software promotes convenient usage. A user interface (UI) is necessary for effective communication and interaction between the user and the object. Usability enables users to understand operational methods easily and control objects conveniently. To increase the usability, it is necessary to plan and improve the software from the viewpoint of the users.

In addition to UI and usability, user experience (UX) is an important element. Generally, consumers select products only if the products integrate additional elements such as pleasure, sensitivity, and fun with the basic features of software, including consistency, visibility, and error prevention. UX is currently receiving attention, with its advantage of being capable of making a favorable impression on consumers with only a little improvement and without having to change the product.

The International Organization for Standardization (ISO) defines UX as "a person's perceptions and responses that result from the use or anticipated use of a product, system, or service." Besides the physical factors, the mental factors include sensitivity, trust, disposition, and taste (preference). Chung & Yoon (2011) defined UX as "all the processes and results followed and experienced by the user when interacting with a particular object in certain environments".

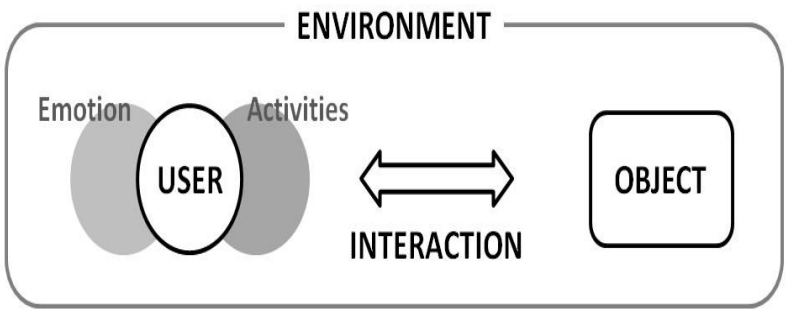


Figure 2. Elements and Environment for UX

2. Utilization of the Persona Method

2.1. Appearance of the Persona Method, and its Merits

To improve UX, it is necessary to identify exactly what consumers want. Although there are a variety of effective methods such as surveys, direct interviews, and behavioral observations, companies have recently begun using the persona method.

Cooper (2005) proposed this method to create virtual users, or 'personas,' based on observations of actual consumers. It is designed for specific types of individuals with specific needs. Earlier, the market segmentation model was typically used by companies; it classified consumers according to demographic characteristics and buying behaviors. The persona method creates characters according to behavior patterns determined through research on buyers who use specific products.

Cooper (2007) identified seven basic steps for creating personas: (1) identify behavioral variables; (2) map interview subjects to behavioral variables; (3) identify significant behavior patterns; (4) synthesize characteristics and relevant goals; (5) check for redundancy and completeness; (6) expand description of attributes and behaviors; (7) designate persona types.

Three to seven personas created by this process have different names, jobs, behavior patterns and aims of using the product. Robert Reimann has answered in the interview by Dan Saffer (2010) that "Cooper's fundamental insight was that these representative characters had goals and behaviors that could be served by products. (…) Cooper developed a powerful design method: meet the persona's top goals with the product by designing for their behaviors, and the design is much more likely to be successful."

The chief merit of the persona method is that it draws favorable reviews from all consumer groups by satisfying only part of a narrowly defined group. By targeting a few users as top priority among the various personas determined following research, it is possible to obtain effective results. The travel suitcase with wheels, which was developed for flight attendants but later became popular with passengers, is one example of a product that was originally developed for a small, targeted group.

2.2. Building Scenarios based on Personas

After establishing personas, persona-based scenarios are built. They are short stories that describe and identify users, their lifestyles, and the purposes of using the product Scenarios provide an understanding of environments in which the products are used as well as of the relationship between users and products. Persona-based scenarios may predict user satisfaction according to the legitimacy of the design.

Cooper (2007) presented persona-based scenarios in five steps; (1) creating problem and vision statements, (2) brainstorming, (3) identifying persona expectations, (4) constructing context scenarios, (5) identifying requirement.

There are no clear standards for building scenarios when using specific methodologies. A producer creates a plausible story, much like a fairy tale or a conte as in Brown(2007) and Unger(2009). Cooper (2007) rarely mentioned specific methods for building scenarios. He merely defined three steps: (1) viewing the process of satisfying user needs from a broad perspective (*i.e.*, context scenario); (2) presenting the process for using the products in detail (*i.e.*, key path scenario); and (3) comprehensively presenting problems in various contexts (*i.e.*, validation scenario).

3. Utilization of Semiotic Narratology

3.1. Role and Applicability of Semiotic Narratology

In this paper, the author proposes the use of structuralism (semiotic narratology) in persona-based scenario building to improve the UX. Semiotic narratology is the study of narratology that emerged to analyze the structure of the narrative style of storytelling (*e.g.*, folktales, fables, novels, and films). The author also conducts a semiotic analysis developed by French structuralism scholars.

Semiotic narratology can be used in other fields as well, *i.e.*, commercial advertisement, marketing or film script, because it condenses the story structure to a simple diagram. Propp (1928), a folklorist, investigated numerous Russian folktales and concluded that the stories commonly flowed in a diachronic order of 31 steps, beginning with absentation and culminating in marriage. In particular, he described a character's behavior as a function and a minimal element in the story.

He classified the characters into seven types according to synchronic function: (1) hero, (2) sought-for person, (3) false hero, (4) dispatcher, (5) donor, (6) helper, and (7) villain. Function was an invariant that remained unchanged in all the stories; names and personalities were variants that changed according to the context. Propp's model can condense most stories into simple diagrams.

3.2. The Semiotic Actant Model and Aims of Personas

Greimas (1966), a structuralism semiotician, further abridged Propp's character model and completed the actant model, comprises six elements: (1) the hero as subject, (2) the sought-for person as object, (3) the dispatcher as sender, (4) the helper and (5) donor as aides and (6) the false hero and villain are condensed into opponents, and a part of this role is considered the receiver.

This model rearranges six actants along three axes. The first 'axis of desire' refers to the subject's efforts to obtain the object. The second 'axis of transmission' refers to the sender notifying the receiver of the importance of the object. The third 'axis of power' refers to the actions of the helper and opponent in helping or disturbing the hero in attaining his goal.

If there is a deficiency or absentation in one's daily life, a need arises that the character must solve; thus, Propp's 31 steps are initiated. The sender sends a message regarding the ultimate goal to multiple receivers, and the character who recognizes the importance of the objective becomes the subject whose behavior results in action. He or she receives help from the helper to defeat the opponent; and the goal is accomplished by obtaining the desired object; an ending to the story is then in order. Once the story begins, the axis of transmission comes into operation, which is followed by the axis of power and the axis of desire—all playing their roles and completing the story. This sequence can be represented by the following diagram.

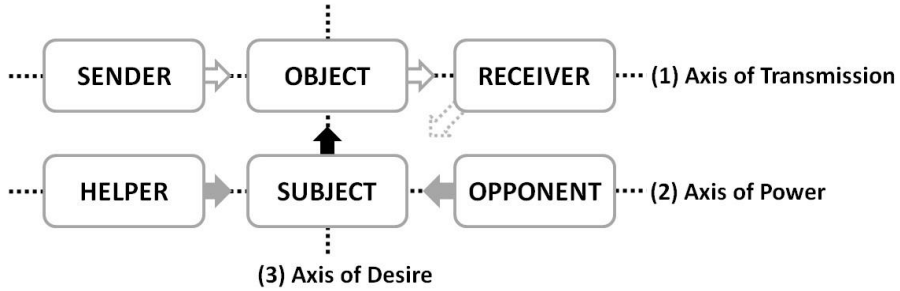


Figure 3. Greimas' Semiotic Actant Model

The six elements and three axes of the actant model can be applied to the structure of production and the consumption of a product. First, when the axis of transmission becomes operational, the producer [*sender*] reminds passive consumers [*receivers*] of the usefulness and importance of the product [*object*]. Second, when the axis of power is activated, attractive advertisements and various support elements [*helpers*] are mobilized to stimulate consumer decisions and behaviors. Competing products [*opponents*] as obstacles are eliminated. Third, when the axis of desire becomes operational, some consumers aim to obtain the object by actively buying the product. Fog (2005) applied this actant model to storytelling marketing but didn't mention the activation of three axes.

The actant model is applicable even after a purchase. To properly deliver the product with producer's [*Sender*] intention to the passive consumer [*Receiver*] via the publicity [*Axis of Publicity*], it is necessary to mobilize improved usability and UX elements [*Helper*] while simultaneously removing the disadvantages of use [*Opponents*] to eliminate confusion and anxiety and to induce immersion. [*Axis of Immersion*] Passive users can then become active users [*Subjects*] who enjoy the true value of the product [*Object*] while accomplishing their goals [*Axis of Product Use*]. Each persona has different aims of using the product, so three to seven actant models should be prepared as the number of personas.

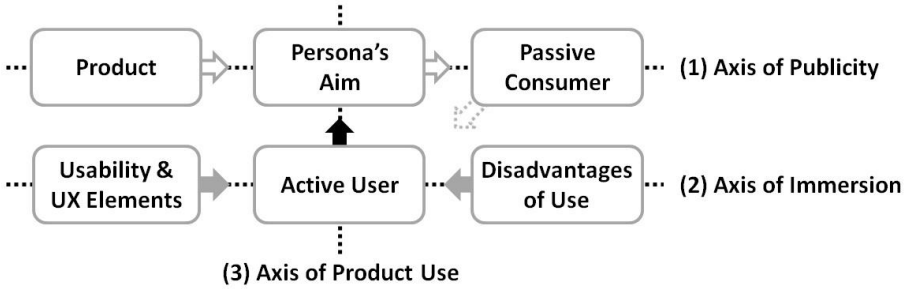


Figure 4. Active User's Semiotic Actant Model

3.3. Semiotic Narrative Schema and User Context

In building a persona-based scenario, it is necessary to comprehensively examine the social, economic, temporal, hierarchical, and cultural contexts faced by the user. These elements, referred to as user context, must be understood to explain the use of certain products by the personas, their dissatisfaction with certain functions, and ways to satisfy them.

Semiotic narratology analyzes the character's context through canonical narrative schema and determines the direction in which the story progresses. Canonical narrative schema judges that the operation of the actant model triggered by the activation of the three axes has certain directivity, and grasps the principles by which actions occur. Greimas connected Propp's 31 steps, a few at a time, proposing a new concept of the three types of tests. The qualifying test, in which an adventure begins with the aid of the helper, the decisive test that overcomes a hurdle through a confrontation, and the glorifying test finally results in the attainment of the object. If these tests are inserted in the story from the initial to the final state, the canonical narrative schema will be completed.

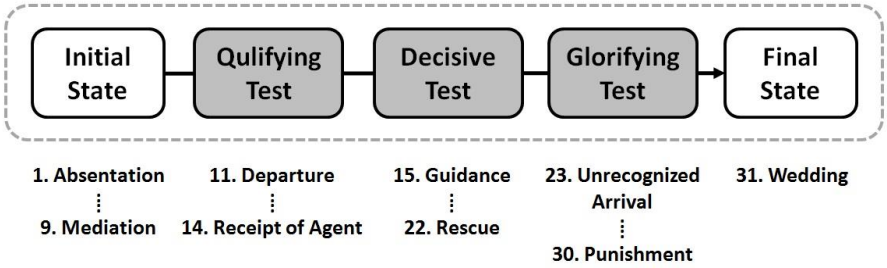


Figure 5. Greimas' Canonical Narrative Schema

In the story structure, the deficiency or absentation in the initial state is visible through the three tests and reaches the final state, thereby resulting in satisfaction or resolution. Propp's 31 steps are assigned to each sequence in the following order.

If the aforementioned process — in which the three axes of the actant model are activated — is a synchronic analysis focusing on the relationship between the character and function, then the three tests of the canonical narrative schema reflect diachronic analysis that grasps the order of events sequentially.

The canonical narrative schema can be applied in understanding user context and building scenarios as per persona method. When the user encounters a product for the first time [*Initial State*], he/she aims to overcome deficiencies or absentation by using the product; however, the user may not know its features, what can be gained by using it, or how exactly to operate it. Product characteristics and merits must be highlighted to attract the attention of the consumers, and the expectancy must be maximized by providing clear descriptions so that users become aware of their own deficiencies and their need for the product.

When full-scale operations for a product begin [*Qualifying Test*], it is important to eliminate entry-level barriers by improving usability with measures such as running an automatic tutorial using video clips or lowering the level of difficulty. Then, when users understand the basic instructions for using the product [*Decisive Test*], immersion (engagement) must be maintained to accomplish the goal that has been presented in the initial state. It is desirable to increase users' abilities by gradually providing obstacles according to the level of difficulty. When most functions of the product are understood [*Glorifying Test*], it is necessary to help users improve applicability and acquire new skills through encountering complicated problems and repetitive use of functions so that they can rise to the status of advanced users.

Through this process, users can rise from the basic level to the intermediate level, and eventually to the advanced level, while enjoying a sense of accomplishment and immersion. [*Final State*] Of course, it is also possible to create individual scenarios where users at each step can be set up as individual personas as below.

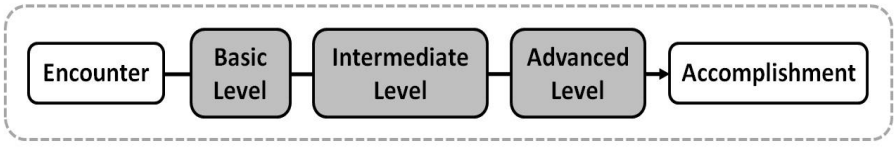


Figure 6. Application of Narrative Schema to Building Persona Scenarios

4. Conclusion

The persona method identifies a task that will help consumers achieve their goals when they use a certain product. However, there is a deficiency of specific explanations regarding the establishment of personas and scenario building.

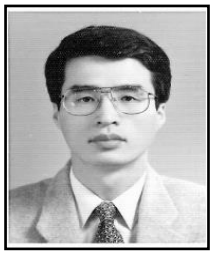
It appears that using the synchronic/diachronic analysis methodology of structuralism (semiotic narratology) can compensate for deficiencies of the persona method. The actant model captures the aims of each persona in the synchronic view and facilitates the accomplishment of goals. A canonical narrative schema is helpful in understanding user contexts of personas as per the stages and levels; further, it is useful for developing suitable scenarios. It is also considered beneficial for drawing detailed plans that improve the usability of UI or for identifying the appropriate timing to provide a diversified UX.

References

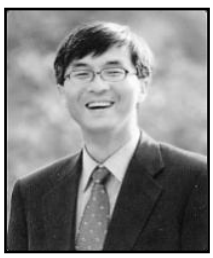
[1] D. M. Brown, "Communicating design: developing web site documentation for design and planning", New Riders, **(2007)**.
[2] S.-H. Chung and J.-H. Yoon, "Design planning, process for mobile app design project", InsLab, **(2011)**.
[3] A. Cooper, "The inmates are running the asylum", Sams-Pearson Education, **(2005)**.
[4] A. Cooper, "About face 3: the essentials of interaction design", Wiley, **(2007)**.
[5] J. Courtés, "Introduction à la sémiotique narrative et discursive: méthodologie et application", Hachette, **(1976)**.
[6] K. Fog, "Storytelling: branding in practice", Springer, **(2005)**.
[7] A. J. Greimas and A. Julien, "Sémantique structural", Larousse, **(1966)**.
[8] A. J. Greimas and J. Courtés, "Semiotics and language: an analytical dictionary", Indiana University Press, **(1983)**.
[9] V. Propp, "Morphology of the Folktale", University of Texas Press, 1968, **(1928)**.
[10] D. Saffer, "Designing for interaction: creating smart applications and clever devices", New Riders, **(2006)**.
[11] R. Unger and C. Chandler, "A Project Guide to UX Design: For user experience designers in the field or in the making", New Riders Press, **(2009)**.

Authors

Dong Uk Im, he graduated from Hankuk University of Foreign Studies. He is a visiting lecturer at the same university. His academic interests are cultural contents, local revitalization, and cultural trails.



Jong Oh Lee, he is a professor teaching European Cultural contents and French Language and Rhetoric at Hankuk University of Foreign Studies in Seoul. He studied stylistics and rhetoric at Aix-en-Provence in France, where he earned Ph.D. with a study of Figures of styles (Irony, Hyperbole, Litotes) in novel of Albert Cohen (1994). His current research areas include European Ecomuseum, Social Solidary Economy, and EcoSal Project of EU nations, etc.



Hak Ro Yoon, he is a professor at the Dept. of Visual Culture of Kangwon National University in Chuncheon-si, Korea. In addition, he has been actively working in the field of visual culture including animation, film and media, etc.