DESIGN STAGES OF A CULTURAL PRODUCT

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Abstract: The design of the new products is highly affected by their designers as well as the target market, environment, culture and users. In this study, it has been questioned how a traditional product would satisfy the needs in the modern world through a cultural product design example of Turkey. Tea is interpreted as an important cultural element and a teapot product plays an important role in most of the households. In this research, important elements to consider in the product design stages are examined. A design study with its stages and decisions of a newly designed product is explained by focusing the role of teapots in the culture. Daily needs have been researched in the fast modern world and the problems of existing products have been revealed as the first step of the process. The design solutions related to the form and the function of the product is given to obtain the final teapot.

Keywords: Design Stages, Product Design, Cultural Effects

Öz: Yeni ürünlerin tasarımı, tasarımcılarının yanı sıra hedef pazar, çevre, kültür ve kullanıcılardan da oldukça etkilenir. Bu çalışmada, Türkiye'den bir kültürel ürün tasarımı örneği üzerinden geleneksel bir ürünün modern dünyadaki ihtiyaçları nasıl karşılayacağı sorgulanmıştır. Çay önemli bir kültürel unsur olarak yorumlanmakta ve bir çaydanlık ürünü hanelerin çoğunda önemli bir yer tutmaktadır. Bu araştırmada, ürün tasarım aşamalarında dikkate alınması gereken önemli unsurlar incelenmiştir. Yeni tasarlanmış bir çaydanlığın aşamaları ve kararlarını içeren tasarım çalışması, çaydanlığın kültürdeki rolüne odaklanılarak anlatılmaktadır. Hızlı modern dünyada günlük ihtiyaçlar araştırılmış ve sürecin ilk adımı olarak mevcut ürünlerin sorunları ortaya çıkarılmıştır. Nihai çaydanlığı elde etmek için ürünün formu ve işlevi ile ilgili tasarım çözümleri verilmiştir.

Anahtar Kelimeler: Tasarım Aşamaları, Ürün Tasarımı, Kültürel Etkiler

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1. Introduction

Culture has a significant impact on the products. If the designers want to create a product, firstly they need to know the target people and the environment. Knowledge related to the cultural elements and traditions lets the design process to begin with an advantage. How a product design can satisfy cultural needs in the modern life is the main question of that study.

Culture is a broad term that has many definitions. Baumeister (2005) explains the term of culture as a part of social life. It is a learned behavior and formed by beliefs, legends and traditions that passes from the old generation to the new one. It can be a way of life, set of meanings and groups of actions to handle problems in life.

2. Background Study

2.1 Tea Culture in the World

The tea has created its culture in many different countries all over the world for centuries. According to Pitelka (2003), the tea can generally be described as an infusion action. Although in Europe and North America, the tea is defined as herbal infusions, it also includes caffeine. The reason for the importance of the tea based on historical, political, and social life in the sixteenth century. The tea has an appealing effect to create its culture. It was a non-alcoholic beverage choice against the power of globalized and materialized world. Stone (2014) also states that the tea is the world's mostly consumed beverage after the water. The Chinese sources indicate that the emperor Shen Nung firstly drank the tea around 2700 BC, by chance. When he was drinking boiling water, tea leaves fell into the cup, which created a nice flavor and caused the foundation of the tea. According to Bolton (2018), the tea is drunk about 31 billion liters annually all over the world.

Many types of black, green, white or oolong tea and tea-related products exist in the world to be drunk in a hot or a cold way. Temperature, strength, and flavoring of the tea, like adding sugar or milk can be adjusted personally. The tea can be bought from cafes, markets, vending machines, etc. to be socialized and to do a cultural activity. It is cheap and healthy possessing some antioxidants inside. Visitation of friends and families' homes or the offices ends up with the tea service. The tea is like a traditional ritual to show the cultural effect, social life, and the hospitality (Pitelka, 2003; Stone, 2014).

One of the famous countries possessing the tea culture is Japan since sixteenth century. Both historical and modern parts of the country have a tea ceremony. Tea schools and the tea consumption is highly much in Japan, causing the production of a hot water for the tea is evaluated as an art style of the culture (Pitelka, 2003). Although Japan is famous with its tea

ceremony, the Korean and Chinese tea ceremonies are popular, as well. Middle East and Africa also have an important tea culture. Western countries generally use the tea as an afternoon tea and in parties. Britain not only uses tea inside the country but also spread to its colonies, such as Hong Kong and Pakistan.

2.2 Tea Culture in Turkey

Sansal (1998) states that although Chinese and Indians believe that they had discovered the tea firstly, Turkish people have been using by preparing and drinking it in their own style for a long time. Turkish tea is drunk in Turkey, Africa, Iran, Tajikistan, Turkistan, and China, as well. According to Aylangan (2011), the tea is an important cultural element in Turkey. Turkish people consume the tea more than British and Chinese with the amount of about 1000 cups per person yearly according to the research done in Britain by Data Monitor. In the late 1800s, the tea was presented to people by Persian and Balkan refugees in İstanbul. It was cheap and easily available for every people. When the tea was firstly cultivated in Turkey in 1917, people became more familiar with it. After 1937's large amount of cultivation, its popularity increased. Welter (2014) also asserts that tea was generally cultivated from mild climate and fertile soil of Black Sea region, which covered 200.000 small tea growers. According to Kazanci (2020) Turkey is the sixth biggest tea producer following India, China, Kenya, Sri Lanka, and Indonesia.

An American author, Branning explained the importance of tea for Turkish people in a conference. As a cultural expression, tea is a simple, easy, and pure tradition when compared to an afternoon tea in England or tea ceremony in Japan. Tea can be drunk in Turkey in every hour including morning, noon, afternoon, evening, or night. It is accessible almost everywhere like homes, offices, shopping malls and outdoor spaces. One or two pieces of sugar can be added and the teaspoon makes a sound all over the country like a music. The tulip shaped small glass is hold by the rim of the glass kindly in order not to be hot and see the red color inside. Instead of using tea bags, it is brewed from tea leaves in order to extend the duration of having a friendly and warm ambience shared with friends and family. In Turkey, people do not generally say that the breakfast is ready, rather they say tea is brewed. It is the symbol of hospitality, lovely breakfast, reason of social meetings and softness of formal meetings (Branning, 2011).

In Turkey, the tea is prepared via brewing it. Tea can be prepared in two stacked containers, which is called teapot. The upper part includes tea leaves whereas the bottom part has the water. The larger kettle on the lower side boils the water, while the smaller one on top of it waits with tea leaves inside. When the water is heated enough, it is poured over tea leaves on the upper

kettle to brew the tea. It is waited for 10-15 minutes on the stove to drink the tea. According to Lovell, (2013) in order to brew the tea in the correct way, the tea should not be stayed in the teapot so long. Boiling water causes the tea to lose its benefit, taste and flavor at the first moment. Thus, boiling water should be cooled to get the right temperature, which is around 85°C to have the most delicious and healthy tea.

The purpose of teapot is to provide hot tea for a long time during it is on the fire, which the kettle could not be useful for. The design and the functionality of Turkish teapot are successful in many aspects. It enables the tea to be hot, but not over brewed. Since it has two separate parts of water and tea, the user can adjust tea strength personally (Brownlee, 2014; Aylangan, 2004).

2.3 Teapot

Pratt (1991) states that, the teacups had had a bigger role in serving the tea before teapots were designed. Around 1500s, first official teapot, Yixing, was found in China. However, long vessels with spouts could be an evidence to show that there were other ancient teapots before Yixing in China. According to Everage (2006), tea was being used for centuries before the first teapots were produced nearly 500 years ago. Consumption types showed alterations in different cultures. However, when it was started to be drunk like the recent case, the teapots were needed. First teapot had only one cup to mix boiling water and tea inside. Chinese drank their one or two cups of tea from the spout of their individual teapot made of clay. After that era, Japanese ceramics, decorative and painted teapots, and Western porcelain with various forms took place. In the 18th century, with the effect of industrialization, afternoon tea term became popular for the middle class in England. This situation increased the demand for teapots, which resulted in the high production numbers of teapots. Today, different teapots are produced with better functional and aesthetic solutions.

Woodhead (2005) believes that a teapot is an innovative product that needs to be considered in terms of techniques, functionality, aesthetics, and ergonomics. Kettles, materials, handles, lids, and spouts should be designed carefully to ease the usage and save from dangerous situations.

3. Design of Teasy

Since the tea has a strong power for the Turkish culture, meaning of the teapots play an important role for the culture, as well. A teapot design includes important elements to consider. A design study of a teapot, which is designed for the present study, called Teasy will now be explained in details.

3.1 Defining the Problems

The design process was started with a lot of research to define the problems of existing teapots. Teapots have a basic function. First, the water is boiled in the bottom part of the pot. Second, this water is poured over the tea leaves. Third, the bottom part is filled with water and both parts are boiled together. After they boil, the serving of the tea starts. However, the waiting process is long for most of the people. Carrying the teapot from one room to another or cleaning the teapot after the tea service are always problematic situations. Because of their big sizes, it is nearly impossible to wash teapots in the dish washer. If its cleaning is achieved, it is then very difficult to have a place in the kitchen cupboards. The question was how the function of a teapot could connect with its form in the most effective way to eliminate the long preparation steps, transportation, and packaging problems. Thus, the criteria in the process of Teasy is the design of a teapot that is ergonomic in terms of ease-of-use, portability, and size.

3.2 Defining the Potential Users

In Turkey, tea is drunk by young people, elder people, students, travelers, sportsmen and even children while they are playing games. It is prepared at homes, offices, schools, restaurants, shops, and parks. People drink it when they…

- Wake up (to start the day, with breakfast)
- Want to eat something (during breaks)
- Eat desserts (like a friend)
- Invite somebody to your home (as a gesture of friendship or hospitality)
- Study (as a medicine that wakes you up)
- Finish your dinner (to relax)

While choosing the target group of users, modern life conditions are considered as well. Due to the responsibilities, many people live their life in a hurry. Humphery (1998) believes that with the modern life, people met new necessitates and desires beginning from early twentieth century. According to Baumeister (2005), modern life conditions shaped people in the way to take place in the cultural society. Since people do not want to lose the moments, they take actions quickly. Levine (1997) also discusses that due to the speed of life, most of the people try to keep up with daily tempo. Cultural, historical, and personal differences have an impact on the tempo of life. Some daily problems challenge against the tempo such as waiting for buses, staying in the queue for the toilet, etc. Pacing with the life is necessary for people to be psychologically better, since growing up with the saying “time is money”.

Humphery (1998) is also of the idea that modern consumption and retailing conditions made people transport and carry their foods alongside. Packaging and transportation of foods or beverages changed the positions in life. Therefore, young people, students, sportsmen and travelers are the focus group that will use Teasy most often. These will be the groups primarily responsible for the increase in the usage of Teasy among society. This appealing focus group will also attract other people to use this product. In this way, other people who want to act like a young, a student or a sportsman can use Teasy just to behave like they belong to one of these groups. However, since the tea is a part of Turkish culture, in Turkey all different aforementioned user groups of tea can be potential user groups of Teasy, as well. Teasy is not just an 'enjoy' tea, but rather a link between enjoyment and convenience in tea. Yet, this does not really matter. Considering the great number of tea-addicts in Turkey, people can take their teapots outside with them, such as when they are in a hurry, while they are trying to catch up on their lessons or work, or even while they are having a picnic.

The need for a new design can be summarized shortly as:

- In the modern life, people meet new necessitates and desires (Humphery, 1998).
- Modern consumption and retailing conditions make people transport and carry their foods alongside (Humphery, 1998).
- People try to keep up with daily tempo and take actions quickly (Baumeister, 2005).

3.3 The Design Considerations

Initially, Teasy was thought as a whole system that has the tea, water, and the boiling mechanism inside. It could also have the tools for its transportation. People could use the cup to put the tea leaves at the beginning of the preparation and then they could use it to drink their tea, as well. Firstly, two differentiated parts were designed to put the tea and water in as indicated in Figure 1. Water could run over the tea leaves by shaking the pot. Later, the cup was separated to make users drink the tea from a different part than where they put the tea leaves. However, at the end, the teapot was designed with three parts. In addition, a question came: should the water flow from the top part to the lower cups, or vice versa, in the preparation of tea? It could be more useful to make water flow from top to bottom. Thus, water flows over the tea leaves and finally tea flows into the cup. The top and two bottom parts were separated by a hinge system. The sketches in Figure 1 shows the very initial distribution of parts and the locking-system. These parts were not very big in size. Teasy has the capacity of 500 ml, which enables users to have at least two big cups or four small traditional Turkish teacups.

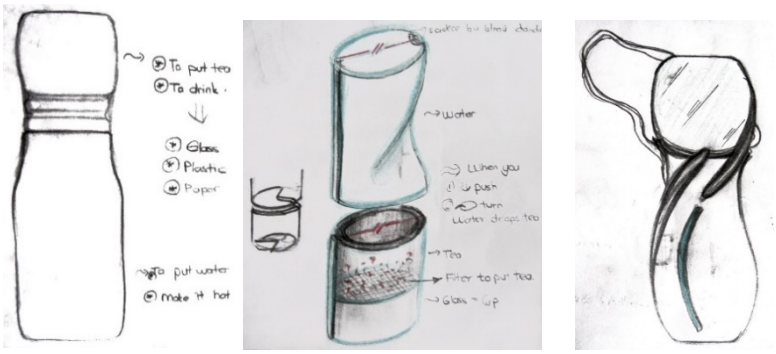


Figure 1: First sketches of parts, usage, and mechanism

Besides the functional importance of a teapot, it must have an aesthetic value. Since carrying it around is one of the most important criterions for Teasy, it was crucial to be held and carried easily, which means that it must be an ergonomic product. With the mechanism to boil the water, the locking-system to prevent water running out of the cups and the hinge system to connect the upper and lower parts, this teapot should be successful concerning ergonomics.
In brief, Teasy must have 3 parts that present the easiest way of preparing and drinking tea, which is a Turkish traditional way also. These parts should have lock details and hinge details to connect each other. Final form and different parts of the product are shown in Figure 2.

3.4 The Materials

Connection of different materials were analyzed to design Teasy. Different solutions including plastic joining details and mechanical joining in a variety of products were investigated in the industrial world. Glass-metal or plastic-metal connections needed some pieces to support each other. The supports or small plastic details, such as nails, were supplied in both end parts of the glass, which changes the section of materials at the end joining parts. Therefore, this section differentiation caused the connection to be stronger. In Teasy, the connection of different materials such as the wall of the thermos and the tea part were designed to prevent the flow of water to the outside of the cups.
In order to heat the water, a special material or product was needed. The bigger and lower cup were firstly designed to include water, which can be boiled with the ‘hot pack mechanism’. Hot pack is an automatic heating product that use physical and chemical processes to heat. When the special heating part is pressed, it heats the bag to 70°C to keep its temperature for two hours. In Teasy, it was logical to use this mechanism because it was hot enough to make a healthy and delicious tea according to Lovell (2013). This mechanism is also durable to be used repeatedly up to three years. It was important to put its heat-generating piece as a button in the correct part

of the teapot. If the button is very big or too easily reachable, it may become dangerous and even be a disadvantage while using the product. Because users carry Teasy everywhere, it must start working under their control. On the other hand, this button should be safe and easy to use. In other words, this button should not make a user tired while performing its function but must be under his or her control all of the time.

In addition, it was important how different parts were connected to each other. In Teasy, there was a locked hinge mechanism between the water and tea parts. The water part is made of steel and it has the property of a thermos to keep the water at the same temperature for a long time. This part also includes the hot pack mechanism in its walls. Moreover, in this part there exists a plexi vacuum to show the water level in the thermos. Thermochromic material was used in the edge of this part. Since water heats when the button is pressed, the thermochromic materials start to change its color to give feedback about the temperature of the water to the user. The materials of the tea part are also steel and plexi. The steel includes the hinge detail, whereas the plexi allows one to see inside. The cup is also plexi, which allows the user to enjoy the tea s/he drinks and to control the level of tea they fill. The cup uses plastic detail to connect to the upper piece. Therefore, in order to see the tea and water, different combinations of materials were selected (Figure 2).

The teapot has different color alternatives or different kinds of motives on the surface. To reflect the Turkish culture, the porcelain and its various motives can be used as a material of Teasy, but since it is carried all the time, it needs to be durable, lightweight, and safe. Hence, designing a type of functional and tea-focused thermos gave the user required safety as well as enabling her/him to have hot water for a long period of time.



Figure 2: Final form, different parts and materials of Teasy

3.5 The Mechanism and the Connection Details

One of the most important details to be solved was the flow of liquids from one part to the other. Water should run over the tea leaves, but after its flow the mechanism should be locked very well. The same thing was desired for the other part too. In order to make the users sure about the movements of the liquids, it should be controlled in several ways. Firstly, water-flowing process was designed in two steps as demonstrated in the Figure 3. In the first step, it was needed to be pushed and in the second to be turned. By using the springs, users can apply pressure on the caps, and when they turn, it moves the section of the caps. However, since these lock details in the teapot were complicated to understand for the users with such kind of a mechanism, the design was ended up with a simpler solution. The caps between the different functional parts have two pieces. Users only needs to change the section of caps.

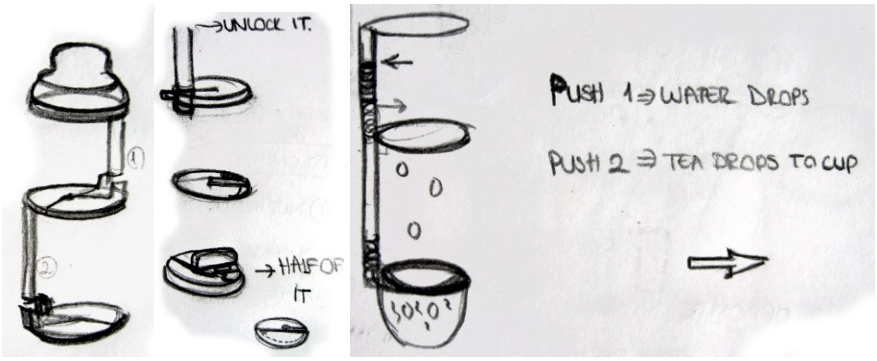


Figure 3: Caps and locking details

Simple solutions were searched to flow water over lower parts. The caps were designed between these cups into two parts. The caps were considered to have the same diameter for the function. They have two holes and when the user wants to prepare the tea, it is necessary only to turn the cap to change its section. Thus, there is no need to use springs or other types of mechanisms. The lock can be made with a sliding mechanism. When a user pushes over the top part of the teapot and turns it, this mechanism is opened and lets the liquid flow into the lower parts.

Moreover, for the thermos of Teasy, a horizontal hinge connects, and locks water and tea parts as shown in the Figure 4. A horizontal hinge was used instead of a vertical one. A vertical hinge could be used, but it would make the function less efficient.



Figure 4: Connection details and final form sketches

In the final form of Teasy, hinge details and holding and carrying part alternatives are shown in Figure 5.



Figure 5: Final form, connection details and carrying alternatives of Teasy

4. Conclusion

The last decision was made about Teasy as an outcome of the idea of design: “Simple is the best!” Therefore, it was necessary to prevent all the complicated mechanisms. These mechanisms would increase the costs, make the product difficult to understand, result in misuses, make the user lose time and even turn an enjoyable activity into a stressful time.

Teasy was designed to be a user-friendly product. Teasy gives the user information about the heat of water besides the level of water as well. To achieve this, thermochromic material is used in the thermos part of the teapot. In that design, it is also seen that the button to boil the water is placed at the top of the teapot. Here, it is easy to reach and control by the user. Since the

position of the button is in the middle of the concave cap, pressing the button accidentally or unconsciously is prevented.

It is crucial to understand that teapots are very static products in the household. In Teasy, a new aspect is presented, suggesting the user groups to carry it everywhere. In the process of its design, the form of the teapot was highly affected by its function. However, the form sometimes directed the function as well. Because it is to be carried, it is no longer a static product. It should be balanced as a complete ergonomic product. Specialization is a significant criterion while using the products. Hence, while carrying the teapot, giving freedom to the users, and allowing them to choose the best alternative for themselves were important considerations in the design process. Furthermore, it should conserve the traditional elements of the Turkish teapot, as well as adapting to the needs of modern society. After all the considerations, Teasy was designed as a product including optimal elements of form and function.

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