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SIMPLE AND INTUITIVE DESIGN

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Abstract

Simple design and simple products feel natural and easy to use by the target user. These products are intuitive and users don't have to learn many things before using a certain product. The product has to be self-explanatory. A simple product is easy to use yet very difficult to design and a designer should go through a sequence of processes considering the usability of the user. The designer has to take into account their own varied experiences while designing a product that will feel just natural. This paper provides various approaches and processes that can be used to achieve simple and intuitive designs. Consistency also plays a very important role in designing a certain product where if the design is kept consistent over the generations, then the design becomes and feels much more intuitive to the user and reduces time required to get used to the interface of the product. Consistency can be conveyed in different formats to the user to keep him engaged and experience familiarity with the previous generation product. The overall process of using these products then becomes very easy and task-focused avoiding any unnecessary actions.

Key Words: *Simple Design, Intuitive design, Consistency, Intuition*

1. Introduction

People use multiple physical and digital products on a daily basis. While some products take time to operate, some of them do a specific task within a few seconds, some of them seem easy to use at first glance but they are difficult to use and at the same time some of them seem difficult to operate at first but they are very easy to use. Designers need to understand what makes a product more engaging than others and what makes design simple to use and understand (Chau, 2013).

Primitively, people used to take the help of sun positioning and shadows to find out the exact time of the day. Over centuries, people have used analog and digital watches to perform the same task, and even over here, the designer kept the main essence the same and made it simpler so that the user can identify the time of the day even when he/she is directly not standing in the sunlight.

Some products may seem complex at first glance yet they are easy to use. For example, The Swiss Army knife is a combination of multiple simple tools which could help an individual in their day-to-day life starting from bottle opening to saving a life from life-threatening situations.

2. Simple Design

- Simple design is easy to understand and deal with.
- It communicates its intent clearly and exactly.
- It is clear or has clarity.
- It is not elaborate or artificial. It is plain, crisp, and concise.
- It helps you maintain a clear focus on the thing which is the priority.
- It has the least possible components (Classes and methods). It Does not have unanticipated side effects. It just does one thing and does it well.

For example, a pencil is a simple design. It is very easy to understand, easy to use, and serves its exact purpose. Can we think of even simpler design than that! It's difficult, right? Now, what about chalk? It is even simpler than a pencil. It can be used by both sides, and can be gripped at any point and distance. So, what makes a simple design 'simple'?

The use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level (Botev, 2021). There are a total of 5 guidelines that help designers to make a simple design.

2.1 Elimination of Unnecessary Complexity

By eliminating the unnecessary complexity, the user experience could become simpler and easier to interact with. one way of reducing complexity is to design a product only for one function instead of multiple.
Slate (Fig 1) is a good example of simple design. Users can write on both sides of the slate and also, they can write upside down or sideways. There is no particular up-down or front-back side in

the slate so all the sides are easily accessible without creating any confusion. The functionality is also very simple and users can intuitively use the slate without requiring any prior experience.

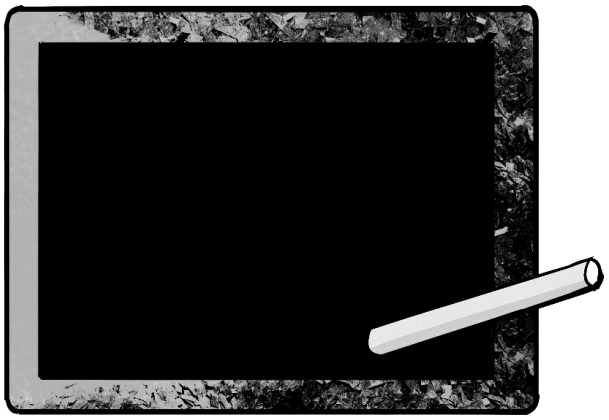

Fig. 1. Slate

Another example would be Remote control for Philips's lightbulbs has four buttons, each for only a single task. In the switch cluster for a product, a Big red button is provided as a kill switch which ensures to stop all the linked processes to it in case of an emergency.

Google homepage is also a good example of a simple and intuitive design where clutter and complexity were purposefully excluded in order to give more importance to the task at hand, which is to search for specific data over the Internet.

An analog watch is another example of simple and intuitive design where the main and only function of the product is to show time. Many people wear a watch as a status symbol, but moreover, it represents the character and personality of a person wearing it.

The computer mouse is one more example where there are only three buttons on the mouse (Left click, Right-click, middle click, and scroll wheel) which are kind of simple and intuitive. It just fits into a hand and users get used to it very quickly.

2.2 Consistency with User Expectations and Intuition

The design has to be consistent in most of the cases and should be obvious if the environment changes or it has to be consistent throughout and should meet user's expectations and intuition.

The meaning of red, green, and yellow lights in traffic signals are the same everywhere and they are consistent.

An elevator is an example of a design that is simple and intuitive. The buttons on the elevator are arranged in a rectangular manner and each button represents the floor number. There is no

complexity at all. Once the user presses the button of the floor where he wants to go, the process of opening the door, closing the door, going up, going down is taken care of by the elevator and the sensors automatically. The current floor is displayed on a small display in the elevator inside and outside along with the direction of the elevator, where it is going.

The design of the spoon (Fig 2) is also very simple and very easy to interpret which side is supposed to be grabbed and which is supposed to be used to hold the food.

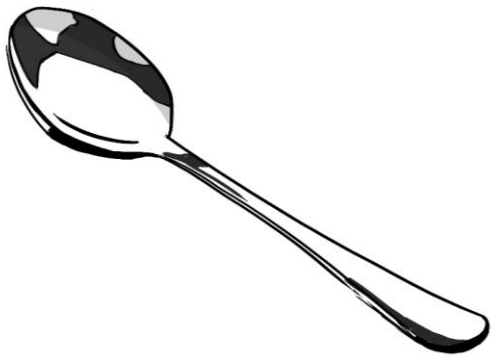

Fig. 2. Spoon as a consistent design with user's expectations

2.3 Accommodating a Wide Range of Literacy and Language Skills

Design has to take the literacy level of the users into account. The design has to accommodate the majority of the people despite the literacy rate or their proficiency over a language. For example, If a person goes to a mall, then he/she should be able to recognize the content, information of the product from its description tag.

The design of the walking stick doesn't require any manual. It doesn't have any barriers and the elderly can use it to take extra support. It doesn't involve any language barriers nor does it affect the literacy of the user.

A notebook is another product that doesn't affect the user based upon the language and literacy of the user. The user can use the notebook according to their needs and for any application as they fit.

2.4 Arrange Information Consistent with its Importance

The design has to be presented consistently over the variety of its variations. The information has to be presented in the manner of its importance and accessibility to improve the usability of the product.

For example, even though the placement of keys on the keyboard (Fig 3) can seem overwhelming initially, once the user gets used to it, it becomes very intuitive. The placement of the keys is based upon their usage, and type. Grouping of keys is done to identify and access them very quickly. Keyboard key "F" and 'J" have a little bump on them which provides the sense of space and location without even looking at the keyboard. Since, the SPACEBAR and the ENTER keys are used very frequently and their shape and size is different according to their importance.

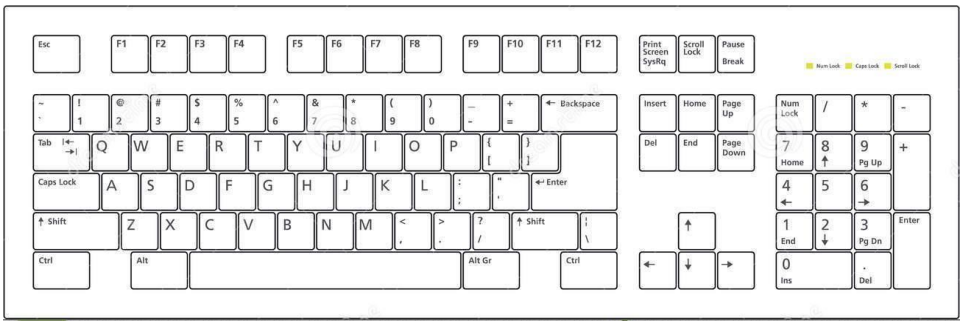

Fig. 3. Grouping of the keys according to function

2.5 Effective Prompting and Feedback During and After Task Completion

Designs use feedback or prompt feedback to enable effective use of a product. Feedbacks are the means to understand that the product is either processing your expected requirement or the work has been completed. Effective prompting helps the user to understand that their input is being recorded and processed by the product.

For example, Google home and Amazon echo gives feedback when completing a task. When the user asks to play a certain song or to search for something, The AI gives a small beep sound indicating that the input from the user has been recorded. After the input is recorded by it, the system partially repeats the Inputs to indicate that the system is processing the command provided by the user, and afterward, it completes the task by playing a certain song or replying by answering the question asked by the user.

3. Intuition

Using or based on what one feels to be true even without conscious reasoning; instinctive. It just comes naturally without or less prior experience. Design is born complex and over time after many iterations it becomes simple. Simple and Intuitive design makes life better. (Nikolov, 2017)

Intuitive design is used informally to describe designs that are easy to use. So, when the user can understand, use and experience the design immediately and without consciously thinking about how to do it, then the design is described as Intuitive design.

Members of the interdisciplinary research group 'Intuitive Use of User Interfaces' argue that intuition is not a feature of the design. Instead, intuitive use is a characteristic of the interaction process between a specific user and the design. So, if we are to evaluate whether a design is intuitive, we must also think about who will use the design (Interaction design foundation, n.d.). Users will feel that design is intuitive when it is based on principles and experiences from other domains that are well known or experienced by them one way or another. Designs can therefore provide experiences that seem intuitive to some users but not to others (Goyal, 2019).

Designers have to carefully derive the knowledge of the targeted audience and they have to design the product specifically for them. By deciding and narrowing down the exact needs and requirements of the user, the product can be made more intuitive.

The iPhone (Fig 4), iPad, and other successful Apple products are good examples of how digital and physical design can be incorporated with each other to make a product simpler and more intuitive. The success of the particular product is also somewhat dependent upon the intuitiveness that the user feels while using a particular product.

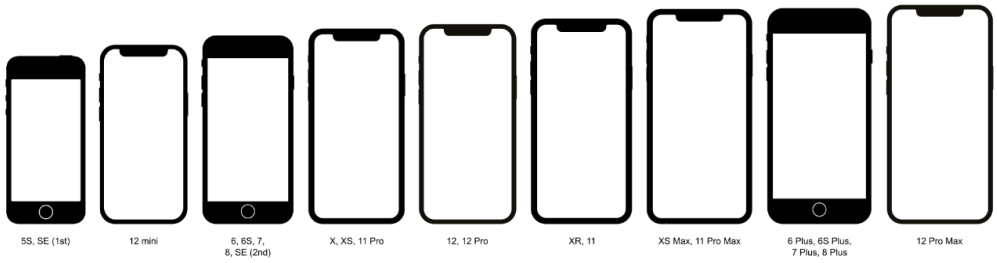

Fig. 4. iPhone evolution

The critical question for a designer is how he/she can design for this ever-growing market and avoid unnecessary processes and wastage of time in the process.

3.1 Counter-intuitive

What creates counter intuitiveness into a product? If something is not intuitive then it might take more time to understand by the user or they might need multiple tries before performing the specific task successfully. The instructions might be either confusing or not straightforward or the design/product wants to perform multiple tasks simultaneously.

Box Puzzles (Fig 5) are an example of counter intuitiveness where no set of instructions was given to the user. The user generally doesn't know what steps he/she should perform to unlock the puzzle box. He has to do multiple iterations, trials, and errors to open that box.

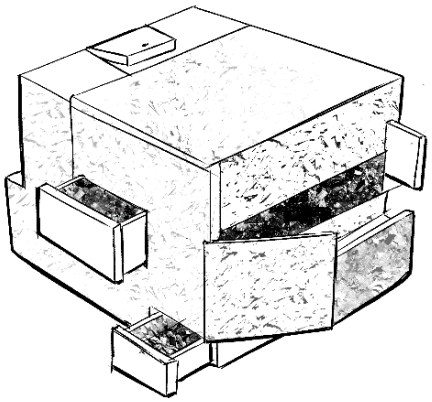

Fig. 5. Puzzle box needs trial and error method to solve (counter-intuitive)

3.2 Intuitiveness Over Some Time

Not all product designers are intuitive from the very start. Some products might need little time to learn and get used to. These products should have a learning curve so that using the product or performing a certain task will become intuitive to the user.

A good example of this is a bicycle. Learning bicycles takes patience and time. Once you learn it, then it becomes so much easier and more intuitive. After a while, it also becomes very natural so that the rider doesn't even have to think about how he/she is riding it. It becomes second nature.

One more example we can take is a computer mouse. Computer mice are used by many users and for different purposes. A computer mouse could be as simple as an Apple Mouse where we have only one single button on a mouse and it performs multiple functionalities and at the same time, it could be as complex as a Gaming mouse when they have as many as 18 buttons on them. This product could be overwhelming to some users in the beginning, but once they get used to it, it becomes very natural to handle it and users can perform multiple tasks on a single command. These types of products are generally based upon time, user, and type of work to be performed by the user.

3.3 Simple and Intuitive Design

An elevator is an example of a design that is simple and intuitive. Conversely, a lift is not always familiar to users. This may cause potential confusion or a lack of comfort with using the device. As a result, individuals may choose to avoid using it. Many people feel very uncomfortable while using a lift because of the closure, or the sudden sense of gravity.

Consistency is a key principle in life and it is very important to keep things consistent so that users can experience the effortlessly in any region or at any time and place.

4. Consistency in Design

Consistency is the core of simplicity which is recognized by anyone very easily. Consistent design is intuitive design. In short, usability and learnability improve when similar elements have a consistent look and function similarly. When the design is consistent, people can use their previous knowledge gained over the period and they use that knowledge to use and access the product which makes things effortless and seamless. When a design is consistent, a small difference in new design can be learned easily due to prior knowledge and the user gets used to the new product. In this way, users can focus more on implementing ideas, exploring new things, and not on learning how the new product works. Humans like consistency by default and they continuously look for balance everywhere. People feel more secure and safe when things are more consistent around them (Yalanska, n.d.).

4.1 Benefits of Consistency

If designers keep things consistent, then users will learn things faster. Imagine that the consistent elements in your design are the letters of the alphabet. Once the user has learned the alphabet, he can go anywhere in your product and still be able to communicate with the interface without friction.

Having an inconsistent interface is like trying to communicate with the user in several languages.

Only the advanced users will be able to finish their tasks. Consistency eliminates confusion! When the user feels confused the next step is to feel frustrated. Consistency saves money and time! Consistent design is frequently built by predefined components. This allows designers and stakeholders to make decisions quickly without spending precious time arguing. This saves time that can be used to build the product and make incremental improvements.

4.1.1 Visual Consistency

Similar elements that are seen or treated the same way create visual consistency. It increases the learnability of the product. Fonts, sizes, buttons, labeling, and similar need to be consistent across the product to keep visual consistency.

4.1.2 Functional Consistency

Similar controls that work similarly or the same way creates functional consistency. It increases the predictability of the product. Predictability of the product leads to the user feeling secure and safe.

For example, the reversible compatibility of the product should be the same way across the product.

4.1.3 Internal Consistency

It is the combination of both visual and functional consistency in the product design. It improves the usability and learnability of the product over time. Even if we introduce new functions/features/pages users will feel easy to use them as long as the designer keeps internal consistency.

4.1.4 External Consistency

This type of consistency is achieved when there is design consistency across multiple systems/products. Using this method, the user's knowledge and experience for one product can be reused in another product or the next generation of the product. This method provides a great user experience and eliminates unnecessary encounters or activities (Laja, 2019).

A good example of external consistency is the user interface and usability of Adobe products. Once you know Photoshop it is easier to reuse the same experience and knowledge to start using Adobe Illustrator and other adobe products. Achieving these four types of consistency will help the design gain better usability, a learning curve, overall simplicity, and intuition.

4.2 Designing Consistency in a Product

The essence of being consistent is to be able to replicate the same action and experience or element multiple times and still be able to support the user with achieving and completing the task. Color, shape, orientation, and textures help a designer to retain simplicity along with its consistency over time or generation which helps to make a design intuitive (Lde, 2017) (Laja, 2019).

4.2.1 Visuals

Grid, size, positions, colors, and typography needs to be defined properly in one central place and it can be used across multiple system or platform that a designer is designing. Defining a strong visual hierarchy is the most important aspect. Using the same color pallet across the product will simplify things. If everything is made and constrained in the

grid of our choice then that allows the arrangement of all components in a nice, simplistic and aesthetic way. Creating consistent visuals will allow the user to learn the system and the functionality very quickly and it will provide a smooth experience.

4.2.2 Voice and Tone

The voice, tone, notifications, sounds that we use throughout the user flow will influence how your user perceives the product. Keeping the voice and tone consistent helps the user to be familiar with the system. If the designer wants to keep the funny and friendly voice in the product, then it can be kept all the way up till the error and fail message. Mail-Chimp is a nice example of Consistent voice and tone.

4.2.3 Using Familiar Patterns

People who use certain products have been around for some time. This means that they have experienced and learned other designs and know the patterns used in them. The designer should take advantage of that and incorporate similar, familiar patterns and experiences into their product and design. The user will feel much more comfortable and his/her journey will be much smoother.

4.2.4 Bend Consistency, Don't Break It

You might argue that consistency could bore the heck out of the user. If we keep things always consistent there will be almost no innovation and the user will not find it interesting enough while using or experiencing it. Designers have to learn the rules first before they bend them. Broken consistency equals a broken user experience. The time interval for a particular process gets slowed down. A lot of time gets wasted over what color is the best for that particular product.

4.2.5 Preserve and Build Consistency

How can a designer keep things consistent and at the same time make the design interesting?

Keeping things consistent means change will be slowed down. Designs have to make the product easy to understand, use and feel. They have to delight the user while experiencing it.

The secret to doing it is to understand the user. All the understanding about the product should come from the user. Making big adjustments should be carried out only when the

user requires it and demands it. It should be coming from the user research and the previous user experience. Making small changes once at a time will keep the product consistent and will provide a better user experience (Luigi, 2015).

We have to remember that little change is good, more change is not necessarily better. Creating consistency will improve the usability of the product and it will delight the customer and user reducing unwanted and unnecessary surprises.

Innovative and unique designs are rarely simple. The process of designing is messy. Prototyping and iterations take time. Over the period, the unnecessary things are removed from the design. The non-user-centric or non-prioritized functions have to be redesigned or have to be removed. Iteration becomes subtractive and the designers can focus upon the exact things which make a difference. When designers reach the design phase of the product, they can and have to ask themselves, what can be removed or modified from the design and functionality without hurting the performance? The designer has to keep simplifying and removing and this process keeps on going. Simplifying is great as long as it doesn't hurt the performance and objective of the tool/product you're designing.

5. Conclusion

Products are born complex and they are made simple over a rigorous process to attain exact needs. Products might be complex or maybe simple in operation and mechanism but they have to be intuitive and simple to understand and use by the user for them to be accepted easily. Designs and Products don't have to be complex to appeal to the users. Design just has to have a strong engagement with users so that products will feel natural and intuitive while interacting.

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