CHAPTER II

LITERATURE REVIEW

2.1 Visual Design

Visual design should go beyond aesthetics and visual impact. Visual design must integrate form and function in a way that respects the convenience and value of the user experience. (Landa, 2011, p. 376).

2.1.1 Principle of Visual Design

Visual design principles describe how existing components interact to produce meaningful and comprehensive visuals (Gordon, 2020). Gordon (2020) describes five principles of visual design for creating good UI/UX as follows:

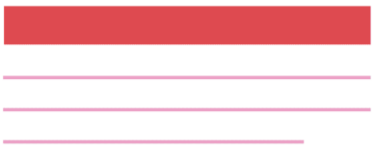
2.1.1.1 Scale

Scale is a principle that optimizes the size of a design composition. A component that has a larger size will emphasize that the object has a higher level of importance.

Picture 2.1 Scale
Source: Gordon (2020)

2.1.1.2 Visual Hierarchy

Visual hierarchy is a principle that refers to the direction of the eye in a design. Design components must be ordered by the magnitude of importance which can be done through the scale, colour, spacing, and position.



Picture 2.2 Visual Hierarchy

Source: Gordon (2020)

2.1.1.3 Balance

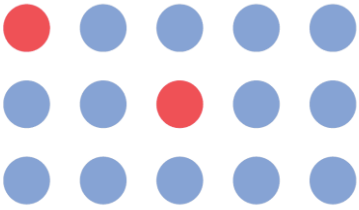
Balance is a principle that optimizes harmony in the arrangement composition of a layout design. An even distribution of design components will provide more comfort to the user. The arrangement of components can be distributed through symmetrical, asymmetrical, and radial axis.

Picture 2.3 Balance

Source: Gordon (2020)

2.1.1.4 Contrast

Contrast is a principle that aligns components with different visuals to show its significant differences. These differences will provide stimulation and a striking visual impression to the user. By providing contrasting elements, users will get an indirect message from the designer that these elements have different functions or meanings.

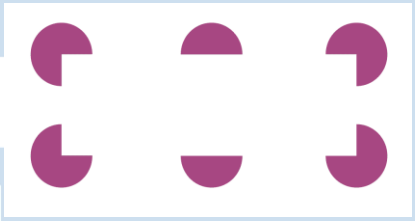


Picture 2.4 Contrast

Source: Gordon (2020)

2.1.1.5 Gestalt

Gestalt is a principle that explains the humans psychologically tends to simplify a collection of components that seem complex and arrange them into a whole, rather than just seeing and interpreting them as singular components. Gestalt is done unconsciously by the human brain and impacts on a visual interpretation of objects seen by humans.



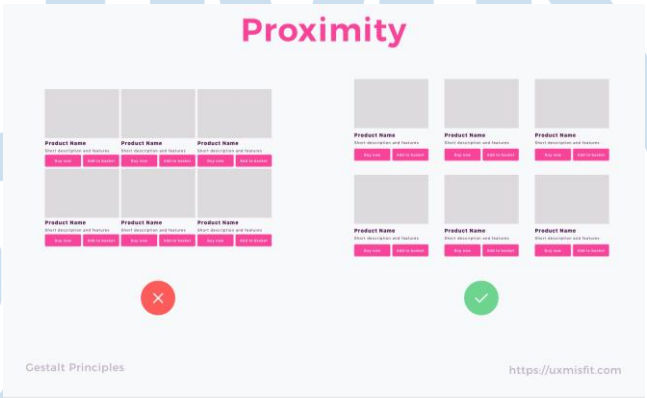
Picture 2.5 Gestalt

Source: Gordon (2020)

The term Gestalt can be further defined into 9 principles in which plays an important part on UI Design, namely: proximity, continuation, closure, symmetry, common fate, figure-ground, common region, and periodicity (Thalion, 2019).

1) **Proximity**

Proximity is a principle in which distance informs the correlation of the design elements. In UI/UX, proximity acts as a way to group component that corresponds with another through the role of white space.

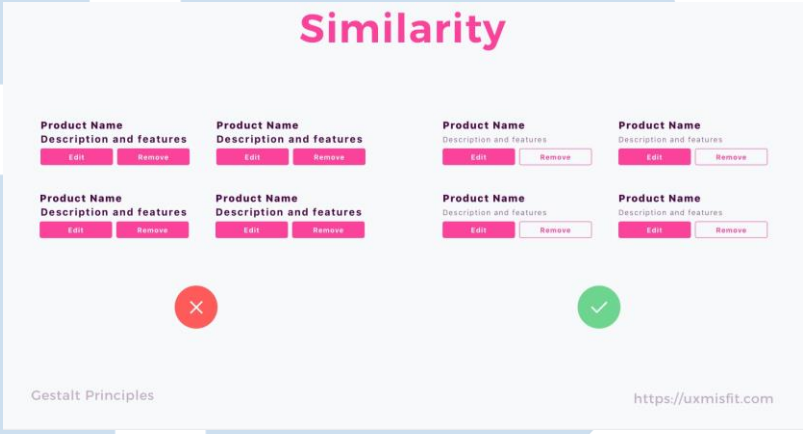


Picture 2.6 Proximity

Source: https://uxmisfit.com/ (2019)

2) **Similarity**

Similarity is a principle that uses the same visual characteristics to ease user through human's perception. User are able to recognize patterns with similar appearance and immediately understand. Therefore, main buttons with primary function should be designed with the same appearance across different pages.

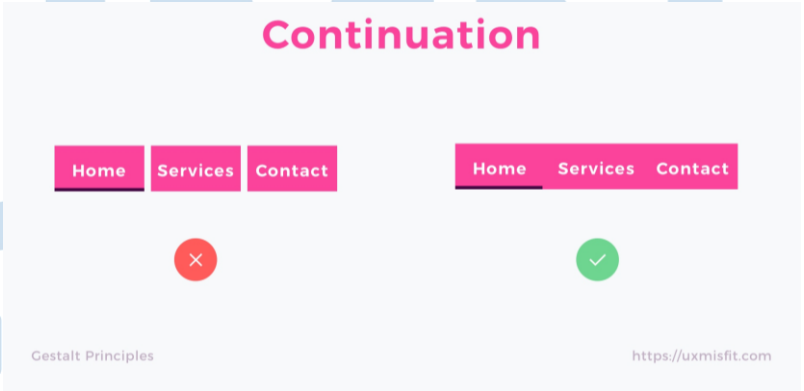


Picture 2.7 Similarity

Source: https://uxmisfit.com/ (2019)

3) Continuation

Continuation is a principle that guides the user's sense of vision. Components positioned in a certain way will leave an impression of it being related and will lead users to from one to the next.



Picture 2.8 Continuation

Source: https://uxmisfit.com/ (2019)

4) Closure

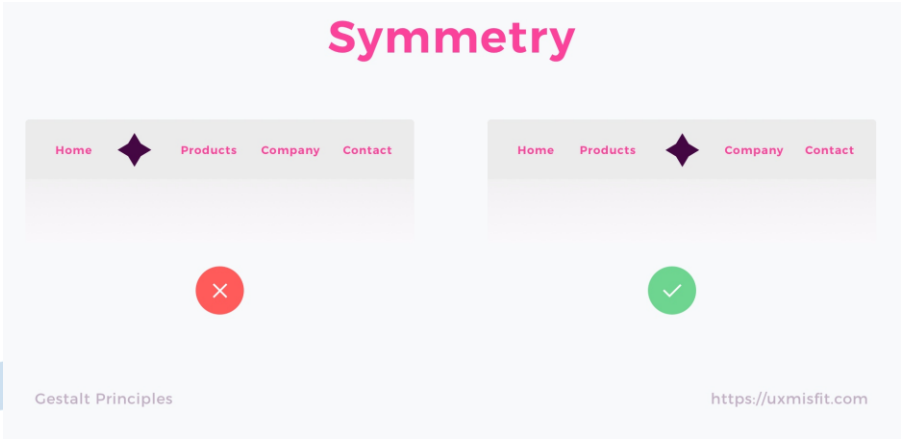
Closure is a principle that applies negative space in the design component. Users will indirectly be able to be perceived as a whole psychologically.

Picture 2.9 Closure

Source: https://uxmisfit.com/ (2019)

5) Symmetry

Symmetry is a principle that groups objects that are symmetrical and convey the idea of stability and sequence. Symmetry enables the user to focus on what is the most important.



Picture 2.10 Symmetry

Source: https://uxmisfit.com/ (2019)

6) Common Fate

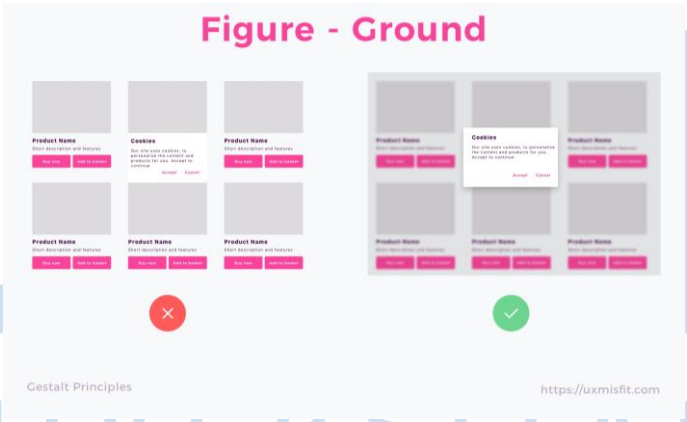
Common fate is a principle that guides a user's eye by grouping components that move in the same direction. Common fate connects content with triggered action.

Picture 2.11 Common Fate

Source: https://uxmisfit.com/ (2019)

7) Figure-Ground

Figure-Ground is a principle that differentiates focus by separating objects in the foreground and background. By separating the focus plan, the user will have an easier way of processing the information.



Picture 2.12 Figure - Ground

Source: https://uxmisfit.com/ (2019)

8) Common Region

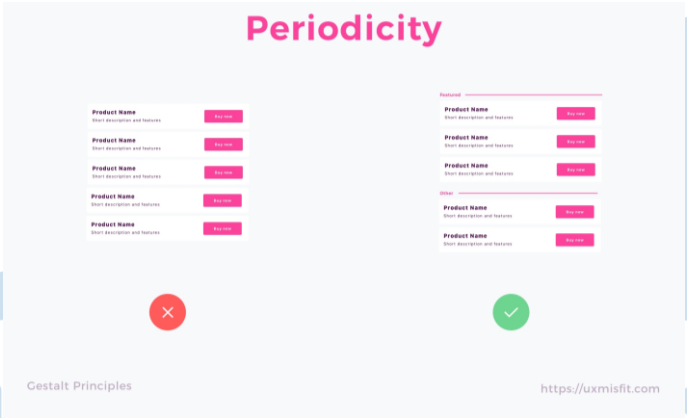
Common Region is a principle similar to proximity which groups components that are positioned in the same area. This principle uses elements to multiple group components to give an impression that it is a singular object.

Picture 2.13 Common Region

Source: https://uxmisfit.com/ (2019)

9) Periodicity

Periodicity is a principle that perceives elements which appear multiple times at similar distances are related. Periodicity helps the user identify the patterns of the component and build a rhythm.



Picture 2.14 Periodicity

Source: https://uxmisfit.com/ (2019)

2.1.2 Element of Design

The element of design is a foundation element when creating a design. There are four main elements in design, namely: line, shape, colour, and texture (Landa, 2011).

1) Line

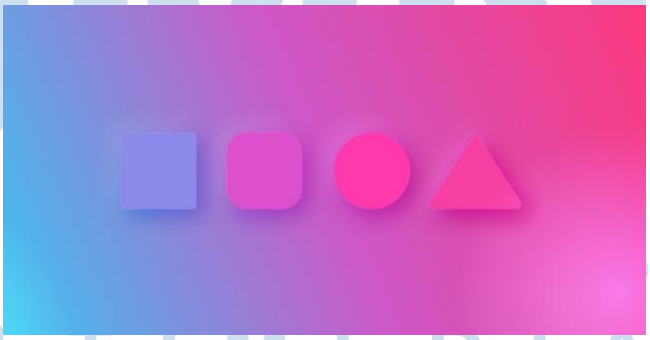
Line is a design element that is a combination of many points that meet and merge into a single unit. In digital media, the existing dots consist of a collection of pixels. Whereas line elements can form a variety of styles without having any special rules.

Picture 2.15 Line

Source: https://www.invisionapp.com/ (2022)

2) Shape

Shape is a design element made of line or colour. Shape is flat and two-dimensional only, but alterations can be made with the illusion of creating a three-dimensional shape. Illusions can be created through composition on shadows, setting colour values, adding textures, and more.

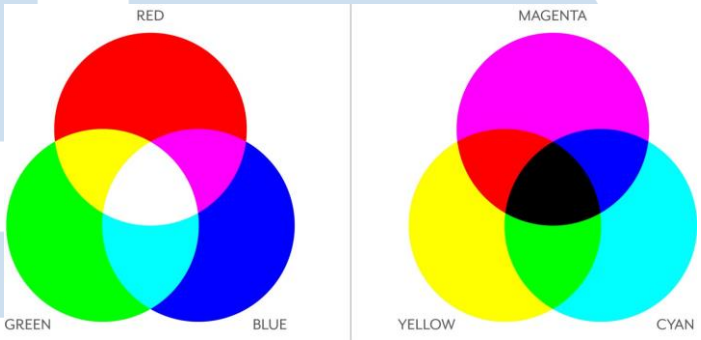


Picture 2.16 Shape

Source: Malewicz (2020)

3) Colour

Colour is a design element that has a huge impact on a visual work. Colour can be seen because it is an element that is reflected by light and is received by the eye. The colour element has 3 main primary colours (blue, red, and yellow) that can be mixed with each other to produce various other colours.

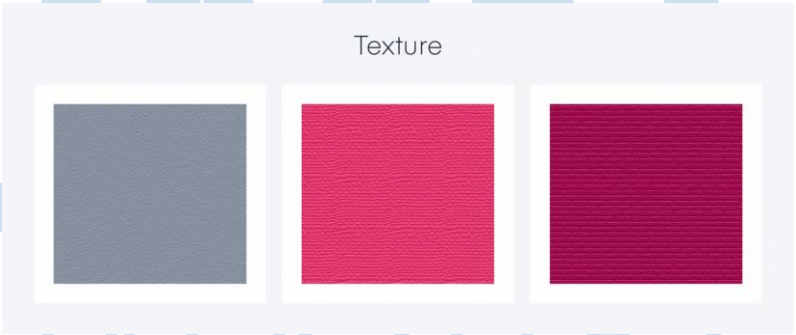


Picture 2.17 Colour

Source: Bastos (2020)

4) Texture

Texture is an element that showcase the quality of a surface. In visual art, there are two types of texture, namely tactile and visual. However, only the visual type of textures is used in a design with digital media. Tactile texture can be felt if touched directly with the sense of touch, while visual texture can be observed through the sense of sight.



Picture 2.18 Texture

Source: Malewicz (2020)

2.2 Mobile Application

Mobile application is a step up from software system that are on PC but wrapped in a more compact form (Techopedia, 2020). A smartphone will come with pre-installed basic application and also comes with application market (Apple App Store and Google Play Store) to download additional application.

2.2.1 Mobile Application Usage

A mobile application can be sorted into the type of usage: mobile gaming applications, educational applications, business or productivity applications, mobile-commerce applications, lifestyle applications, entertainment applications, travel applications, and utility applications (Pham, 2021). The different mobile application offers different usage to users. Therefore, user tends to download different mobile applications to fulfill their personal needs.

2.2.2 User Interface

The Interaction Design Foundation defines user interface (UI) as the process by which designers design visuals in software or digital and emphasise displays with high aesthetics, ease of use, and high comfort. The user interface connects users to technology through visuals that can be seen and felt when using the product (McKay, 2013).

2.2.2.1 User Interface Elements

User Interface elements are design components that build applications and websites (Riva, 2022). User interface elements can be sorted into four categories: input controls, navigation components, informational components, and containers.

1) **Input Controls**

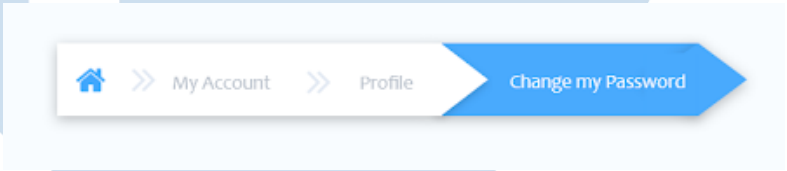
Input controls are elements that give users the ability to provide and input data. Designers can lead the user in providing information by utilizing an input control. Some examples of input controls are checkboxes, buttons, toggles, information fields, and search boxes.

Picture 2.19 Checkboxes

Source: Shakuro (2017)

2) Navigational Components

Navigational components are elements that guide the user while they are exploring an application or website. The visual of navigational components can help leads user that there is more information that can be found. Some examples of navigational components are tags, paginations, sliders, breadcrumbs, and carousels.

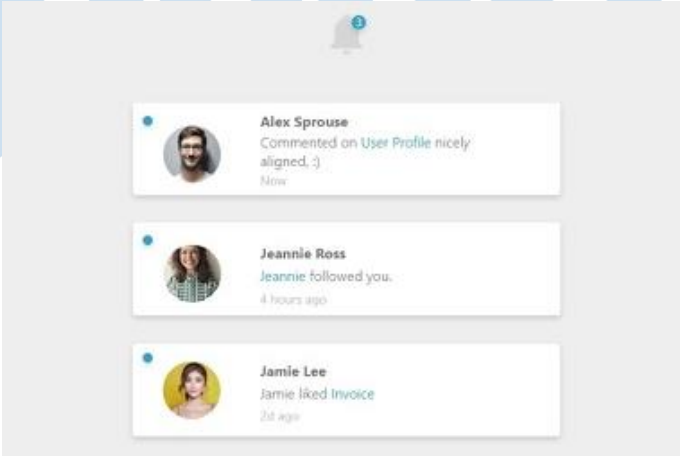


Picture 2.20 Breadcrumbs

Source: Olorunniwo (2021)

3) Informational Components

Informational components are elements that provide information to the user. Some examples of informational components are icons, notifications, and message boxes.

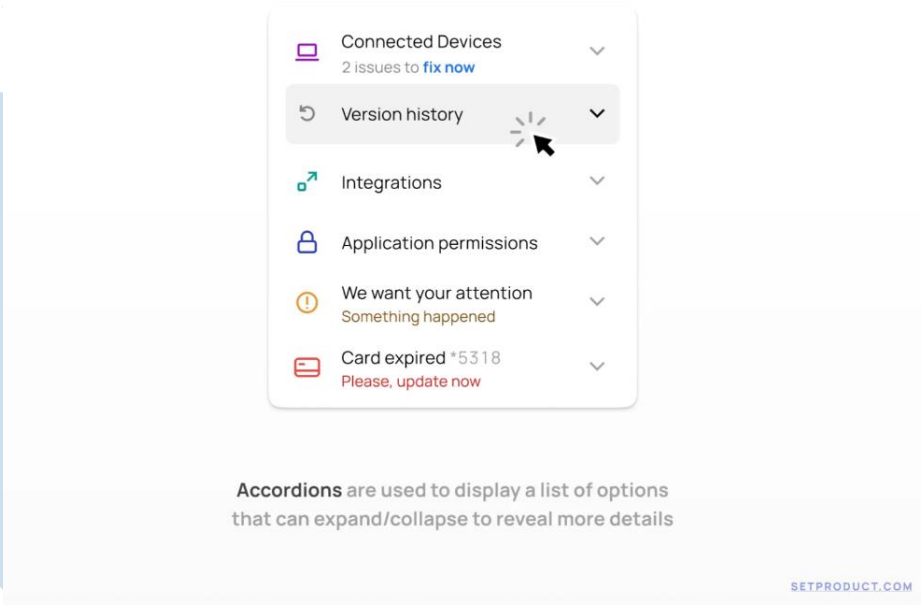


Picture 2.21 Notifications

Source: Olorunniwo (2021)

4) Containers

Containers are an element that groups a related material. An example of a container is an accordion.



Picture 2.22 Accordion

Source: Kamushken (2021)

2.2.3 User Experience

The Interaction Design Foundation defines user experience (UX) as the process by which designers design a product that provides optimal comfort and impression. It also includes components of branding, design, usability and functionality. User experience ensures that all elements that will interact with the user have been designed properly and optimally (Garret, 2011).

2.2.3.1 User Experience Honeycomb

UX Honeycomb is a theory that helps users to better understand the importance of the need to go beyond usability (Morville, 2004). Morville divides the UX Honeycomb into seven facets: useful, usable, desirable, findable, accessible, credible, and valuable.

1) **Useful**

   Useful is a quality that applies an innovative approach to a functional solution to a problem. User feedback towards the product and system is essential for in-depth input.

2) **Usable**

   Usable is a quality that underlines usability and ease of usage. A designer should keep in mind that specified content will invite specific users, which is why it is vital to conduct adequate research.

3) **Desirable**

   Desirable is a quality that shows the importance of emotional design's element. It is vital to consider the compatibility of the user's emotional circumstances for a suitable approach.

4) **Findable**

   Findable is a quality that focuses on the location and position of the design component. A poor layout arrangement will decrease the user's experience of using.

5) **Accessible**

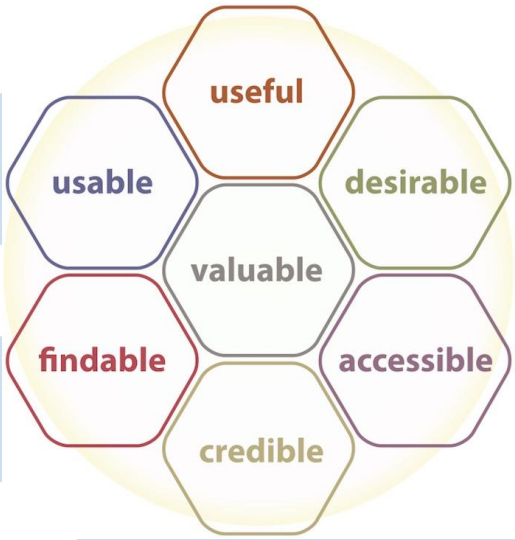
   Accessibility is a quality that implies helping people with disabilities. A disability-friendly design will be more ethical and inclusive towards difference.

6) **Credible**

   Credible is a quality of whether or not a design is trustworthy and speaks the truth. A professional design will give users a sense of reliability and safety.

7) **Valuable**

   Valuable is a quality that reflects the value to a user. A designer should emphasize the benefits that the user will receive.



Picture 2.23 User Experience Honeycomb

Source: Morville (2004)

2.2.3.2 Law of UX

The Law of UX is a psychological point of view that intersects with user experience. It was found by Jon Yablonski when he researched a deeper grasp on empirical evidence of the design decisions he was making. Psychology flourished a deeper comprehensive information and understanding of the mind of humans (Yablonski, 2020). Yablonski defines the law of UX as follows:

1) **Jakob's Law**

   Jakob's law showcases that users will have a more effortless experience when situated in a design that is familiar. A standard and convention design will ease the process of understanding and will increase productivity. In addition, the sense of familiarity optimizes the user to complete the task needed. Creating a user persona to create an imaginative representation can help further study the design case by defining possible traits.

2) **Fitts's Law**

   Fitts't law explains that the duration of time a user will spend is relative and depends on the sizing and distance of design

components. An essential aspect of the design is its usability. Therefore, it is vital to map out an easy to apprehend. Three key points to consider are that the touch target should be in a comfortable size, equipped with compatible space in between, and placed in an accessible acquired area.

3) **Hick's Law**

Hick's law states that the duration of time users spend on determining their decision correlates with the amount and complexity of choices. A designer should be able to simplify information accordingly to reduce the amount of choice and ease the user's mental thought. Cognitive load is a psychological concept that occurs on the Hick's Law, a mental resource used to understand and interact. A card sorting technique can be used by identifying topics, organizing topics, naming categories, and an optional step of debriefing participants. However, a designer should not forget a crucial key consideration, which is oversimplifying, as it can reduce users' performance on their goals.

4) **Miller's Law**

Miller's law emphasizes the working memory humans can afford to put on in a moment. George Miller published research that states the limit of human capacity on processing received information, approximately seven items. In addition, a psychological concept of chunking can be an optimal way for a designer to inform content with a distinct visual with a smaller group of information. A key consideration to note is that the number seven of the theory is not a strict number but what is more important is the design being designed effectively.

5) **Postel's Law**

Postel's law acts as a connector between humans and machines. A designer needs to be open to critique and input from users but still

be able to interpret in a form that machines can process. A key consideration to be mindful of is design resiliency, which is by anticipating and projecting variables that may happen.

6) **Peak–End Rule**

Peak–End rule is when the user mainly remembers and focuses on the peak of the event and towards the end. A psychological concept of cognitive biases explains that users will remember an experience that gives out an emotional attachment throughout the event. Designers can use journey mapping to understand the user better through understanding the user's perspective, visualizing the user's experience, and identifying the insights of major takeaways. However, it is possible to find negative peaks which may affect the user's impression of the overall experience.

7) **Aesthetic – Usability Effect**

Aesthetic – Usability Effect explains that users have a particular point of view that designs with an aesthetic visual have high usability. A psychological concept of automatic cognitive processing shows that visual take part in a user's decision-making and allows them to have a quicker reaction. Although this may be seen as a positive effect, it might cause problems by masking problems that should have been discovered before.

8) **Von Restorff Effect**

Von Restorff effect stated that an object that stands out and differs from the rest would be remembered more. A designer can use this effect to emphasize the most important content with a stand-out design. However, moderation and accessibility are key considerations that should be applied. A design with too much emphasis will confuse users on which is the most important, and different visuals will affect people.

9) **Tesler's Law**

Tesler's law states the importance of conserving complexity. A designer should be aware of not oversimplifying a design to subtract important information and component, resulting in users limited to insufficient information to understand. Likewise, it is the job of the designer and developer to take care of complexity in the most optimal approach.

10) **Doherty Threshold**

Doherty threshold explains the performance between machine and user. It is a vital aspect of design in which the designer holds a considerable responsibility to make sure that everything comes out as efficient and reduces the waiting duration so that users can achieve their goals promptly.

2.2.4 Super App

Super App is a compact application that acts as a one-stop solution for the user as it provides multi features in a single application. It can also be defined as an ecosystem built with an extent of services within such a user can be satisfied with the comfort of a singular platform (Perri, 2022). Super App has been successful through out multiple countries across Asia and has been seamlessly integrated on the daily use of the local communities (BBF, 2021).

The main indicator of a super app is through four key indicator of: user experience, usefulness, engagement, and awareness (Tan, 2022). With a high integration and seamless experience, users have a high chance of dependency on the app (Lazaridis, 2010). However, to become a Super App, the application needs to have at least two features that intersect: delivery, e-commerce, social media, and online transaction (Ponnapa, 2019). (Althouse, 2022)

2.3 Presisi Polri Super App

2.3.1 Description of Presisi Polri Super App

Presisi Polri Super App is a smartphone application developed by the Division of Technology, Information and Communication of the Indonesian National Police (Div TIK Polri). The public are able to download the application from Apple App Store and Google Play Store.

2.3.2 Function of Presisi Polri Super App

The Presisi Polri Super App has a function to assist the service and protection of the Police for the surrounding community. In addition, other function of the Presisi Polri Super App is to receive complaints and aspirations from the public to the police, and facilitate access of service and information.

2.3.3 Features of Presisi Polri Super App

The Presisi Polri Super App has several features: police hotline number, map of vulnerable location, information, administrative features, and live chat. Whereas features that fall upon the Presisi services are SKCK making, eSurvey, monitoring of the reported investigation result of SP2PH, reporting of indecent police act in Dumas, making and extending of SIM (driver's license), making and extending of STNK (vehicle registration certificate), ticket assortment, information of the Polri museum, video regarding the police institute, map of health services, TV/radio of Polri, information of the nearest police station, and information of Humas. However, the main feature of Presisi Polri Super App is the emergency feature, which is the police emergency hotline number and the map of vulnerable information.