OVERVIEW

In the 1950s, there was no standard color system in the design industry. People involved in the different stages of design process are not consistent in selecting, organizing, interacting and maintaining colors. The lack of color standardization caused a substantial amount of design work being reproduced and reprinted. Pantone, a commercial printing company grabbed the opportunity and created a standardized color reference system now known as the Pantone Matching System, to solve the problem. In the Pantone system, colors are described by their unique numbers and printed on a collection of color cards. By organizing and categorizing the colors, manufacturers, designers and printers can all refer to the Pantone system to make sure colors match and be consistent in product design.

What is being organized?

Simply saying, the resources that the Pantone system organizes are colors. In daily life, people use colors as resource descriptions to support the interaction with physical and digital resources (e.g. websites, clothes, furnitures, etc.). Colors are normally considered as internal and static properties of other resources, whereas Pantone’s resource focus determines that colors are treated as primary information resources in its system.

It is important to understand the scope of the Pantone color system. Despite the ubiquitous nature of colors, the resource domain of the Pantone color system is not all the colors that human can perceive and differentiate (which is impossible to organize). The purpose of the Pantone color system is to provide support for designers, printers and manufacturers to select, organize, interact and maintain the color collections of their product design. Pantone has identified three domains that its target users are specialized in, which are graphic design, fashion, home & interiors design, and industrial design. Thus it has created three color categories to support users’ different interactions with colors in their own domains (Pantone’s categorization will be discussed further in the “how much is it being organized” section).
Why is it being organized?

Back to the 50s, information was scarce. The dominant purpose of the Pantone color system was to enable more interactions and seamless integration of heterogeneous organizing systems to select, organize and retrieve colors more efficiently in the design production process. Pantone served as a color dictionary or a color catalog with a primary emphasis on resource description reference. Today as the Internet, computers and mobile devices have become an essential part of people’s everyday life, every designer can open Photoshop or other online software to get any color’s RGB, HEX or CMYK numbers. In the digital era, what is the real value of using the Pantone system with the hard printed color cards?
Based on my research, I found out that the Pantone color system as information resources has more uses today than it was originally designed to do, and it enables more interactions between design experts, businesses and governmental agencies, and general public, which include:

- Forecast color trends in fashion: Pantone has been selecting the “Color of the Year” since 2000 and producing a series of biannual fashion color reports since 2014. By partnering with leading fashion experts, Pantone selects the colors which best define the global zeitgeist and fashion trends. This is a pure arbitrary selection based on externally derived properties: preferences and popularity of colors among a group of color experts and fashion influencers. These collections of colors arguably could increase the quality of interactions between Pantone system and fashion designers by increasing the context awareness.
- Help customers develop their branding identity: Pantone color system has been widely used in the branding identity of companies, universities, and even government agencies. See Figure 2 below for a few examples.

Figure 2: Pantone colors are recognized in the brand identities of USAID and UC Berkeley (source: USAID and Berkeley websites)
How much is it being organized?

The extent of the Pantone color system increased over the years. It began as 500 standardized colors, and today it consists of more than 10,000 colors in its system. More importantly, the granularity of the organizing system also increased. It started with only one category for graphic design, and today the category of graphic design divides into three sub-categories of logos & branding, print & web, and marketing at a granular level. It also expands its scope to include two other categories of fashion, home & interiors design (FHI), and industry design. That being said, it surprised me that Pantone, as one of the mostly recognized color authority in the world, doesn’t have a comprehensive taxonomy to describe the relationships among its resources and resource descriptions. Thus, based on my research on Pantone website and app, I created a diagram to describe the Pantone’s class hierarchy (see Figure 3). The diagram shows clearly that the granularity varies, which reflect the company’s richer experience and knowledge in the graphic design field in comparison with fashion or industrial designs.

Figure 3: Taxonomy of Pantone color system based on Pantone website and app
During my research, I noticed that there are only very few resource descriptions in the Pantone system. Each Pantone color only has a Pantone number and its color values in RGB, CMYK and HEX. Some colors have more resource descriptions, such as “Dark Blue C” or “Aruba Blue”, but not all colors and the naming are not consistent (resource naming are discussed later under “other considerations” section). The primary resource descriptions are the numeral color values, and they don’t show any semantic relationships between the colors. It is insufficient for the purpose of comprehensive retrieval of all colors that relate to a particular design task. Pantone might have realized this issue: it has been building an early version of its color cross-reference tool by calculated and analyze the similarity of color values (see Figure 4).

When is it being organized?

When a physical Pantone color card is created, it comes with some internal properties. For example, a beige Pantone color (Pantone 11-0107 TCX) printed on a cotton swatch card has a certain color shade, and given its textile, it is part of the fashion design cotton collection. When a Pantone color is added to the digital color system, the RGB, CMYK and HEX color values are generated automatically by the computer. The resources are organized “on the way in” in this sense.

On the other hand, the Pantone color system imposes very little structure within each color collection. For example at first I was surprised that Pantone doesn’t have collections of red, blue, yellow, etc. Then later I realized that considering the granularity of colors that Pantone is organizing, some colors are very hard to classify. In addition, since Pantone is an international
standard, it also has to take into consideration of the cultural context. People from different cultures and countries might define colors very differently. A Chinese designer might have never heard about salmon colors, and it would be impossible to have an international consensus on what colors should be classified as salmon colors.

Therefore, Pantone has a flat structure and simple naming method in its color system to address the complexity of the issue and avoid any controversy. Instead, Pantone encourages users to organize their colors “on the way out”. Its physical color cards are bound by a pin on one side, which allow users to unfold and spread out the cards to locate and reorganize color families and ranges. In its digital version, figure 5 shows that users can enter a color name, or pick a color from the color spectrum, and then Pantone will calculate and analyze the color values and retrieve a series of recommendations in response to the user’s query.

Find a PANTONE Color
Enter a PANTONE Number, color name or pick the color that you are looking for.

How or by whom is it organized?

The Pantone color system as a very specialized organizing system, is organized and maintained by color experts. It is worth mentioning that its color professionals also interact with graphic designers and fashion icons all around the world, and it constantly increases its color collections.
to reflect the latest social and cultural trends. For example, Pantone recently added 112 new colors to its most popular “Formula Guide” collections. The 112 new colors consist of more neutrals, blues, and greens in respond to the overwhelmingly popularity of blues among American corporates’s branding identities, and the trending lifestyle of going “green” and being environmentally friendly.

Other considerations

There are a couple of issues with Pantone’s naming mechanism. Pantone’s color identifiers are in different formats under different categories. For example, in the “Formula Guide” collection, some colors just have identifiers in the format of “Pantone xxxx C” or “Pantone xxx U”, where “xxxx” is a 3-4 digit number, and “c” stands for “coated”(or “u” stands for “uncoated”). Some other Pantone colors have more descriptive names such as “Dark Blue U”, or a combination of both such as “Blue 0821 C”. In the FHI Cotton TCX (which stands for Fashion, Home + Interiors Textile Cotton) collection, each color has both an numbering identifier in the format of “Pantone xx-xxxx TCX” and a descriptive name. My interpretation of the naming inconsistency is that Fashion and Home designers’s activities are based on physical objects, and they are more likely to interact with the physical Pantone color cards, which leads to a higher demand for descriptive names and more precise color shades, whereas graphic designers are more likely to interact with the digital Pantone color system on their computers, and they can rely on Photoshop or other color picking tool to support their design process.

References

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