

Vision: Market Research

Explore the way color can help shoppers cultivate and achieve their vision.

Devansh Desai | Shamika Kulkarni | Shweta Patil | Nate Wilson

Problem:

“An interior designer attempts to find the final accents to a room, but color matching using preselected colors through major retailers rarely provide accurate enough tones. Without an accurate representation of color, the designer must purchase many variations to fit their vision.”

Color names do a poor job at describing the exact color they represent. A blue to one person may not be the same blue to others. Although manufacturers usually know the precise color value of their products, that information is rarely transferred to the retailer. Even if this information was shared regularly, the logistics of tracking and maintaining this data through multiple suppliers would be nearly impossible. Too often, color data relies on stock managers approximating from supplied datasheets or emails and worse case, if the color can not be determined in the documentation, it must be done subjectively which can be prone to error. Furthermore, most retailers only use up to 16 color categories, instead of the possible thousands, which further distance the customer from an accurate representation.

Partially due to this disconnect, \$40 billion in online sales are lost due to size and color initiated returns.¹ By providing a better representation of color, consumers, retailers, and manufactures will reap the benefits. Vision sees this as an opportunity.

Partner company:

Vision is taking the initiative to solve this complex problem by providing the user with a truer representation of color without relying on the color data reaching the retailer. Their mission is to help shoppers cultivate and achieve their vision with accurate color representation of a variety of products such as furniture, clothing and other color sensitive projects.

Vision is looking at both sides of the market space. They help retailers determine the exact color of their products and can match them with consumers looking for that color. Likewise, Vision can connect shoppers with products and suggestions that fit their palette. Their algorithm takes into account color accuracy, color palette options as well as customer preferences. They are expanding the retail standard 16 color palette to a 3600 color palette to provide true color to the user.

¹ Benning, M. (Presenter). (2018, October 1). *Vision*. Live presentation NC, Charlotte.

Our Contribution:

Vishion was contacted UNCC Computer Vision Professor Stephen Welch and our group was contacted to assist with this monumental undertaking. We will be handling a small subset of the problem, determining the true color regardless of the photo's lightning, shadow and other environmental conditions.

Given any photo, the color of an object is differs not only in the exposure and condition of the camera but by the way an object is lit. Ideally, objects lit evenly and a consistently between pictures would allow their colors to be compared, however we know that the temperature and intensity of the light alters the perceived color. Our goal to create a model to predict the color under ideal conditions. Vishion will be able to use this prediction to better assist their clients in finding the exact color match they desire.

Market Scope:

Strengths of the product:

Currently, there are several ways to determine accurate color, all of them require the actual product and specialized equipment such as a calibration gray card or a color reader. Unless the consumer or retailer obtains and manually checks the product, only approximations of the tone can be made. Customers routinely purchase multiple versions of a product and return the ones that don't match the desired color, costing them and the retailer time and money in unnecessary shipping costs. Not only are does Vishion direct them to products matching their description and color but the tool offers suggestions for accent colors and related products thereby increasing value to both retailers and consumers.

Unlike many retailers of today, Vishion is moving away from a manual transfer of color metadata. They are using an image to image based approach to determine color by using a photo, something every item already has associated. Furthermore, by comparing objects in a variety of lighting conditions accurate prediction will work for a wide variety of photo compositions.

Financially, there are several planned monetization methods: click-throughs or impressions, targeted advertising and/or data collections of color trends and user interests. The click throughs and impressions allow Vishion to work closely with retailers and leverage their product stock to provide a wide variety of options for the user. Eventually, advertisers will be able to create advertisements to reach the users that color matters to; top brands interested in sharing their color-oriented options will be able to do so. Finally, by collecting metadata on consumers, retailers and manufactures can better understand market trends in color.

Challenges:

The technology assisting color selection is complex. Challenges include user preference, identifying what object the user is trying to match and finally lighting and camera sensors. Progress has already been made in color identification and user preference as well as producing a large dataset to work with. By creating their own samples in addition to partnering with CSI Color (<https://csicolors.com>), Vishion has set the groundwork for a powerful algorithm that can accommodate a wide variety of variables.

Potential market:

Color sensitive consumers are already frustrated with the current marketplace:

- 68% of interior designers say it takes at least an hour to find a product by color online.
- 55% of shoppers have abandoned a purchase, unsure if they could find items that match.
- 85% of shoppers say color is the primary reason for selecting a certain product.²

Industries that require exact colors such as design and fashion would greatly benefit from color based searches. A more accurate representation of furniture or clothes not only assists customers but the retailers providing the products.

Online retail as a whole seems to be preparing for a more customized offering in the near future. "Over 70 percent of retailers are trying to personalize the store experience, ... nearly three out of four consumers responding to personalized offers, recommendations or experiences."³ By tapping into this market and creating the connection between the consumer and merchandiser, Vishion is positioning itself as an indispensable partner to both parties.

Potential competitors:

Because Vishion has picked up the job that many large retailers have neglected, companies such as Amazon, Walmart and Etsy would seem to be posed to edge them back out of the market. However, most of these merchandisers are unable to meet customers demands due to their scale. Vishion's niche of color-matching provides the color-sensitive consumers with a tool to find and be confident in their purchase, something that wouldn't be feasible financially for companies with millions of products where a color tool would only marginally improve suggested results. In this case, Vishions scope allows for them to be best posed to make use of this gap in the market.

² Vishion. (2018). Retrieved October 3, 2018, from <https://vishion.co/>

³ Tynan, D. (2018, January 29). Personalization Is a Priority for Retailers, but Can Online Vendors Deliver? Retrieved October 3, 2018, from <https://www.adweek.com/digital/personalization-is-a-priority-for-retailers-online-and-off-but-its-harder-than-it-looks-in-an-off-the-shelf-world/>

Summary:

“Consumers spent \$453.46 billion on the web for retail purchases in 2017, a 16.0% increase compared with \$390.99 billion in 2016.”⁴

With e-commerce still on the rise, Vishion’s product will fill a hole in the market space and solve a problem for millions of designers and the color conscious. With a powerful algorithm on the backend to overcome the hurdles of color prediction, Vishion is poised make a large market impact. Vishion is the only mobile app that uses a product’s true color data, style trends and user preferences to help shoppers find the ideal color-matched accent or centerpiece. The product is slated for a Q4 2018 delivery.

⁴ Zaroban, S., Enright, A., & Demery, P. (n.d.). U.S. e-commerce sales grow 16.0% in 2017. Retrieved October 3, 2018, from <https://www.digitalcommerce360.com/article/us-ecommerce-sales/>