Collect Your K-Pop

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ABSTRACT

With a rapid expansion of K-Pop industry, K-Pop fans have created a unique culture of collecting albums and photo cards of their favorite artists. As more fans desire to trade their collections with other fans, they started to use some existing platforms like Twitter. However, existing website has shown some issues like frauds. Thus, people need more structured K-Pop focused marketplace where they can safely sell and buy collections of others. Collect Your K-Pop, the new platform for K-Pop fans, introduces new features to make K-Pop fans' collecting hobby safer and more enjoyable.

1   Introduction

The K-Pop industry has expanded rapidly over the last decade all over the globe, generating international sales over $4.7 billion [1, 3]. One of the most famous K-Pop groups, BTS reached the top 10 of the Billboard 200 Chart in 2017 [2], and Blackpink's album EP Square UP reached top 40 in 2018 [3]. As the K-Pop industry grows, K-Pop fans have established their unique music culture of collecting albums, photo cards, posters, concert tickets, and other goods of their favorite artists. Not only K-Pop fans collect them, they also sell their collections to other people to replace their current collections with new ones or buy from other fans to expand their collections. Many fans currently use Twitter or Naver (Korean web portal) Café to post what they are selling or looking for and those who are interested in contact the posters. Even though increasing number of fans wants to sell, exchange, or buy collections of their favorite artists, there is no marketplace that handles only K-Pop related items among fans.

The use of unstructured platforms has led to many frauds, creating infamous hashtags in Twitter such as #포카사기 – *pocasagi* (means photo card fraud) and #굿즈사기 – *gusjeusagi* (means goods fraud). Due to these frequent frauds, K-Pop fans prefer exchanging their items in person rather than shipping. There are many existing platforms where people can sell and buy stuff but none of them focuses on K-Pop. This study introduces a more structured online marketplace specialized in selling, buying, and exchanging of K-Pop collections among fans. Moreover, the new platform helps them keep track of how many albums and photo cards they have collected for their favorite artists and members.

2   Background

Though there are few K-Pop market platforms that sell products to customers, there is no place for fans to exchange their collections with one other. There are many C2C websites such as eBay and Amazon, but they do not focus on one category rather allowing sales of any products in general. This paper describes how some of the generic e-commerce implementations can be modified to be suitable for K-Pop fans.

2.1   Trust in E-Commerce

Trust is from an existence of uncertainty and involves some risk [5]. Many consumers foresee possibility of uncertainty on websites where they need to enter their personal information, such as credit card number. One way of overcoming the uncertainty on online marketplace is to use trusted third-party application, such as PayPal [5]. Length of relationship determines the strength of trustworthiness. [5, 6]. Hence, the longer the online platform interacts with customers and provides good services, the more trust they get from their customers. One way of building trust is not to collect "personal information unless necessary" [5].

This paper is focusing on how to ensure the trust among fans since the platform allows K-Pop fans to directly sell, buy, or exchange with other fans unlike businesses sell their products.

2.2   Search in E-Commerce

Search method in e-commerce is very important to provide quality results to customers. One basic example of the search techniques includes tag-based search [7]. Tags are created based on user input, but it can be difficult to use this method if there is a lack of user input or various preferable word choices among users [7]. To overcome the drawback of simple tag-based search, collaborative tagging systems was introduced. Instead of using individual tags created from the user input, those tags are categorized into similar topics, which are used for the actual search [7, 8].

Like user input plays an important role in search, seller's descriptions of items matter a lot. Various sellers upload their products on online platforms, but they all use different formats describing products. Some use key-value pairs while others use multi-line sentences to present their products. To solve this issue, Sawant and Gable suggested multi-task learning which performs better than prior method Name Entity Recognition (NER) [9].

This study generalizes tag-based search algorithm. Unlike other C2C platforms, the new marketplace only specializes in K-Pop related items. Those items can be represented by a set of few tags. For example, one of the K-Pop groups, TWICE, has an album called "Summer Nights". The tags associated with this album would be a group name, name of the album (both in Korean and English), and year the album was released. Another instance can be found when people are trying to sell photo card. A photo card of TWICE member DaHyun from the album "Summer Night" would have tags with a group name, member name, name of the album, version of photo card if any, and year. Simplifying tags associated with the items K-Pop fans are trying to exchange makes people to search their desirable products easier and faster.

2.3 Product listings on E-Commerce

The research conducted by W. Hong et al. shows that the product listing design on e-commerce significantly affects users' search time, familiarity of brand names, and usage of the website [10]. In general, providing both brand names and images is more effective than just displaying brand names. Also, using a list format is better than using an array format [10].

This paper utilizes the list view of product listing page with the image associated with the products users are selling. There are only set of official albums and photo cards (meaning those that are directly from the entertainment company they are part of). Images of album covers and those of photo cards are stored in the database so that when the users post their products, the consistency and uniformity of images can be ensured.

3 System

In this section, key features of a newly created K-Pop focused marketplace, called Collect Your K-Pop, are introduced.

3.1 Database of Official Images

In this project, three K-Pop groups are used: NCT 127, AB6IX, and TWICE. One set of photo cards for each group per album was gathered. All the album covers, profile pictures, logos, and photo cards of NCT 127 and AB6IX were provided by my friends who are K-Pop fans. TWICE's images were collected one by one through online search. The collected images of each group were named uniquely and stored in the database for further usage in different pages in Collect Your K-Pop. The main reason of collecting official images is to unify what is displayed to different users. Detailed usages of the images will be further discussed later.

3.2 My Collection

My Collection page is a novel feature of Collect Your K-Pop that has never been introduced to other K-Pop related website. When the users create their accounts, they are required to select their favorite artist and favorite member among the group they selected. The K-Pop fans' favorites can be changed through the settings page (Figure 1). Once they choose their favorite groups and members, *My Collection* lets them keep track of albums and photo cards collections of their chosen ones. In Figure 2, the top of the page

Figure 1: Edit My Pop (Settings) page to select the users' favorite group and member
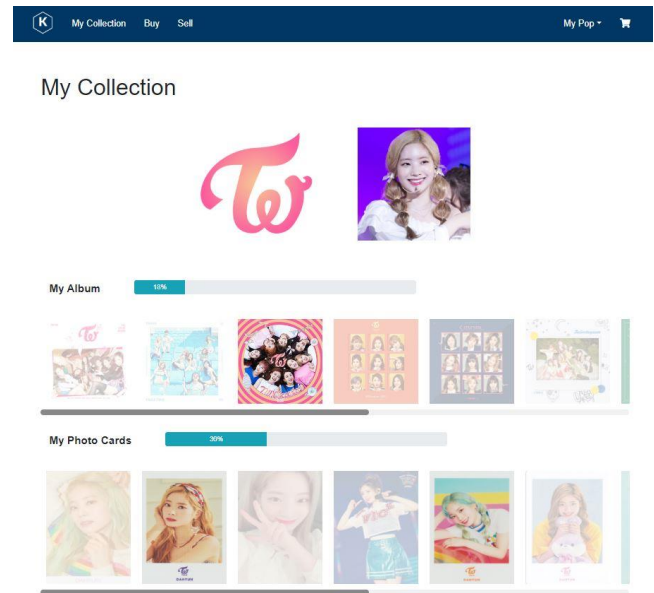

Figure 2: My Collection page showing a favorite group as TWICE and member as Dahyun

displays a logo and profile picture of users' favorite group and member from the collected image database discussed in section 3.1. Since Collect Your K-Pop is aiming for K-Pop fans, the users are expected to know logos and pictures of their own favorites. Thus, showing pictures instead of displaying actual group and member names provides a clearer idea and easier view for users.

The bottom half of the page represents the progress of users' collections. *My Album* section (Figure 2) displays all the albums of the users' favorite groups that have been released. Likewise, *My Photo Cards* section depicts photo cards of users' favorite members of the groups. Originally, all the album and photo cards pictures are greyed out, but the users can add to their collections by clicking the picture of the new collection and added items will be colored. Also, they can remove albums and photo cards from their collections in the same manner. The fans can easily see how much they have collected out of all the ones that have been release through the progress bar and percentage. Furthermore, this function can help

Buy

Reset filters

Artist

TWICE ▾

Type

Photo Cards ▾

Album

TWICEcoster LANE 1 ▾

Member

Jihyo ▾

Price

Low to high ▾

Delivery option

Free Shipping ▾

Search

Figure 3: Options for the filter function on Buy page

users decide what collections they want next instead of pulling physical albums and photo cards out of their drawers.

3.3   Buy and Sell

Buy and Sell page is a key feature of Collect Your K-Pop. In *Sell* page, the users can easily select what they want to sell instead of writing a description of what they are trying to sell. The users choose artist, type (either album or photo card), album name, and member name if applicable. When the users select artist, album and member (if selling a photo card), it displays a logo of the selected group and image of album cover or photo card associated with the album. All the images are grabbed from the database to avoid any uploaded pictures from the users. This method can reduce confusion that can be caused by blurred or incorrect picture descriptions. Each album has certain a set of photo cards for each member, which makes a filter function in *Buy* page work more efficient and it will be discussed later.

Due to the fear of fraud among K-Pop fans, many prefer trading their collections in person. Therefore, options for delivery are expanded to have pick-up in addition to the traditional method of shipping with and without extra charge. When selected pick-up, the users also choose preferred distance.

The *Buy* page shows all the products that are listed for selling. The important feature of this page is the filter. Figure 3 shows all the options available for the filter which are similar to the ones in *Sell* page. The filters are very specific to help the users have the best search results. When using Twitter or Naver café, it is difficult to search for specific collections the users are looking for due to a generalized search algorithm. Also, the users cannot easily tell whether products are sold out or whether the seller is reliable. However, Collect Your K-Pop utilizes tag-based search [7] algorithm to provide a better user experience. As mentioned in
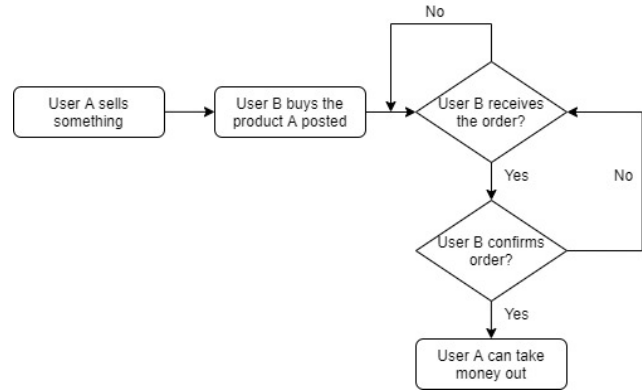

Figure 4: Flowchart of the confirmation function

Order History

Album
AB6IX: B: COMPLETE
$123
Pick-up
Within 20 miles of 19157

Your order has been confirmed.

Photo Card
AB6IX Jeon Woong: B: COMPLETE
$5.3
Free shipping

Confirm

Figure 5: Order history page

section 2.2, each listing has specific tags associated with it, and the users can filter by those tags. Furthermore, once products are purchased by one user, the listing won't be available to other users.

3.4   Shopping Cart

Shopping Cart allows the users to save their searches. On the *Buy* page, the fans can click "Add to cart" button to add the listings to their shopping carts. Adding products that are listed by the same user is prevented since all the users will be able to see the same product listing. For example, if the user A is selling TWICE album "twicetagram", A will not be able to add the product he listed to his cart though he can click "Add to cart" button. On the *Shopping Cart* page, the users can either remove the product from the cart or purchase it. When clicked "Buy" button, the users can find orders in *order history* tab under *My Pop*. Implementing an actual checkout function for this project was out of scope thus not implemented.

3.5   Ensuring Trust

Ensuring trust is a crucial matter in e-commerce. As mentioned in section 2.1, there are few ways of building trust in the marketplace. To ensure trust, Collect Your K-Pop introduces a confirmation functionality for all the orders. Figure 4 is a flowchart representing how the confirmation functionality works. After the purchase, users can see orders in the *order history* tab where they can confirm the reception of their orders. Upon successful reception of their orders,

My Selling

Figure 6: My selling page

whether it would be pick-up (in-person) or shipping, the buyer clicks "Confirm" button on the *Order History* page. Figure 5 shows the *Order History* page with 2 different scenarios: when "Confirm" button has not been clicked and when the users have successfully confirmed the orders.

After the seller posts collections to sell, they can see their postings in *My Selling* page under *My Pop*. In this page, the users can see the status of all the products that they have sold. There are three possible states: unsold, sold but waiting to be confirmed, and sold with buyer's confirmation (Figure 6). Only when the selling is confirmed by the buyer, they can take money out. This procedure can protect the buyers from frauds.

4   Discussion

Though this project implemented new features, there are some limitations that can be improved for the future work.

4.1   Raking System

The *My Collection* page displays only the collection progress of an individual user. Adding a ranking system among users who follow the same favorite group and member would provide the users motivations to collect missing albums and/or photo cards. However, this is only possible when there is large enough user group to create ranking system.

4.2   Too Many Photo Cards

In this project, only one photo card per album and member is used for simplicity. However, there are numerous albums that have more than one version of photo cards. Collecting all the official photo cards is challenging. For the future work, it would be better to simply show different versions instead of the actual photo cards. For example, TWICE album Merry & Happy has 3 versions of photo cards: A ver. (green), B. ver. (pink), and special ver. (gold). TWICE has 9 members, meaning there are 27 photo cards to collect for the database for one album. Finding all 27 official photo cards

is very difficult and time consuming but can be avoided with a following method. Since each version is associated with a distinct color, color cards without member picture on them can be used instead of the actual photo cards.

4.3   Utilizing Zip Code

In this project, users' address (city, state, and zip) and preferred distance were collected, but there was no specific use of those data. In the future research, zip code and distance can be effectively use for the users who want to trade their collections in person. Adding zip code and preferred distance to the filter function, the users will be able to find products that are close to their house and within the distance they want to travel.

4   Conclusion

In this paper, I presented few new features for the marketplace for the K-Pop fans. Unifying images of albums and photo cards makes selling easier because it avoids users' picture uploads. Keeping track of the progress of personal K-Pop collections is the novel trait of Collect Your K-Pop. This visualizes the users' collections without pulling them from the drawers. To ensure the trust among the users, the confirmation function was introduced, protecting frauds that occasionally happen in unstructured marketplaces like Twitter. Though there are some limitations and improvements that have to be made to this project to be accessible to real users, implementation of new features to build structured marketplace is a great starting point for the future work.

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