

Proposal

Recommendation System for Virtual Art Gallery

By Suzanne Coutchie

Feb. 25, 2007

Background

RedBubble.com is a virtual art gallery which sells the work of established living and emerging artists through their website. This Australian based company manufactures and markets the work of artists who upload digital images of it so that RedBubble may print it and sell it as wall art, prints, posters, cards, and T-shirts. RedBubble.com is a unique concept in that they are dealing with digital images which the artists upload on their own to the RedBubble.com website. The business of selling art on line is challenging because the decision to buy art is based on visual senses and therefore judged on appearance. This includes scale, texture, reflection of light and other nuances which are not distinguished on-line. Art.com is the most successful business of selling art on line. Their business is selling prints and posters with the option of adding mounting and framing, but their focus is different from RedBubble.com in that they do not focus on selling the work of artists living today but instead on well know reproductions of the Great Masters as Van Gogh, Klimt, Monet etc. Another new publicly held company CafePress.com has embraced the concept of using digital images which allows artists to upload their work to be sold on prints, posters, calendars, coffee mugs, and T-shirts but the artists which come to them generally use them as a printing service and the product offerings which are for sale tend to be graphic logos for sports teams and for the most part, not geared toward quality art work. RedBubble.com does have a very impressive, quality selection of artwork in their offerings.

The Issues

RedBubble.com is a fast and easy way for artists to make their work available for sale without having to spend the time and money to vertically integrate i.e. printing, framing, shipping and delivery or to have to plan and store inventory. Artists can focus on the creation of their art rather than on the business. This is a quick time to market option for artists to sell reproductions without the burden and overhead which is a very attractive feature that RedBubble.com has to entice artists to use their website. The consumer on the other hand, can easily experience visual sensory overload due to the large catalogue and may find it difficult to distinguish between each one which can inhibit them from purchasing. In order to sell the work of the artists, as opposed to becoming a catalogue of artists work, the website needs to increase the personalization to each piece, so that the customer may have a better opportunity to connect to something which they may wish to buy. The key issues which the website faces are:

1. Artists are drawn to the website because they can easily upload their work, but once their work is uploaded; it can easily be lost in a sea of other work. This website is a tool for artists to sell their work and the source of revenue for RedBubble.com. The website display alone will not sell the work and there is a need to further personalize the user experience to market the users work. Buying art work is a very personal choice and the website does not personalize the pieces so that the consumer may remember any particular piece very easily, which would help them attach to it and incite them to purchase. The display is overwhelming and like the results of a keyword search, a user has little motivation to delve very far into the collection. Except for a few pieces which make it to the main page, individual pieces don't stand out. It is likely that the artists who are on the first few pages get the most exposure for a specific reason, but it is unclear what sorting mechanism is used to prioritize the placement of the work.

2. Customers who visit the site without having prior information about certain artists and their work are overwhelmed with the amount of artwork that is catalogued. There isn't anything about the display of work that provides the human experience of seeing a piece of work in an art gallery where the full

expression of texture, light and scale which the artist has intended for the piece can transcend. Nor is the appropriate space allowed which lets the user see any given piece without scrolling through the collection. With the overwhelming display of choices even the most discerning artistic eye would have difficulty in choosing something upon which to focus but it is up to the user to decide what they may like. The information about the artists and their other works is available but not the main focus of the site. When the users choose, they may select an image and find out specific information about the piece and the artist along with other additional information which the artists make available.

RedBubble.com Current Recommendations

Search by Categories – In order to help the customers sort through the catalog, the website has created an organization structure which allows the user to search by category. This does help to break down the work into more manageable collections. Some examples of the categories are by subject, color and product offering.

Keyword Search – Users may search by the artist's name, title of the piece, or any keyword which the artists have associated with their work to help somebody find their work.

Users' comments – There is a very primitive recommendation system in place where users may comment about the artwork. Artwork is not like other products in that it may invite a negative comment, therefore all comments given are positive. Those who do not care for a particular piece of art don't bother to comment on it. This is a voluntary comment process and from a sampling of the comments, there is evidence which suggests that the comments are given largely by the artists themselves about each other's works. The comments are given with the intent of reciprocity in which they will ultimately gain more positive comments themselves. Developing an algorithm based on the ratings of the artwork would be highly ineffective, because of the motivation for the artist themselves to participate.

Considerations for Recommendation Systems for RedBubble.com

Implicit

Item – Item Algorithm – Art is already an item in itself on other websites. It could be broken down further by the category of print or poster for example but that would not be useful for this site. RedBubble.com could benefit with the philosophy of item to item, but not with an algorithm, but by incorporating the successful strategy of physical art galleries which is to establish the collections of the artists as a category on their own. Currently it is possible to select a piece of art, identify the artist and to link to the artist's page. At present this is entirely the responsibility of the artist and it varies greatly from artist to artist. A stronger item to item system would be to highlight the other work of the selected artist, because the artist's own work is highly correlated within the artist's collection. This would also personalize the artist's work which helps the user to identify with the site.

Page-Rank – RedBubble.com is an open marketplace for artists to sell their work. Many services are provided to the artists, but it is still largely their responsibility to sell their work. Other websites such as Netflix may want to have an unbiased website, but RedBubble.com is designed so that the artists are expected to provide an artist's statement, keywords, and other information which would help sell their work. Having them link their pages to their own websites, blogs, MySpace, Facebook, etc will increase traffic to the RedBubble site. The weighting for the rankings should be higher for links to outside sites than for those within the RedBubble site.

Singular Value Decomposition – Art work is highly subjective and it is not purchased based on useful characteristics. While there are characteristics which may be pleasing to many different customers, they are not features.

Explicit

User – User Algorithm - Artwork is very personal and not purchased with the same frequency as movies or books. There are more items than users and many of the users are the artists themselves which gives

them incentive to inflate the ratings for there own gain. There is too much opportunity for shilling. While having comments about work is helpful and personalizes the system, adding ratings would not be.

Proposed Recommendation System for RedBubble.com

Ranking – *Artists who have the highest rankings should have priority in the placement of their art. The artists themselves are responsible for getting outside links. RedBubble.com is a site whose purpose is to sell the artwork of its customers. It is about artists and it is for artists. Creating motivation for the artists to bring their customers to the site and conversely back to their own personal websites adds an element of social computing which is missing from the traditional recommendation systems. Explicit recommendation systems are currently in place, but the recommendations are not rated and it would be impractical to do so because many of those making the recommendations are the artists themselves. This is not a disadvantage to the website in fact the artists who are themselves experts on art should be further exploited for their opinions on art of others. Rating their comments would not be beneficial because they would likely give high ratings in the anticipation of reciprocity.*

By adding a stronger element of social computing where the artists connect on many levels to other art networks, including upcoming events and specific news worthy items, RedBubble.com would ultimately gain the total of all links. The user base could grow significantly. The strategy of creating distinct collections of the artists themselves should include links directly to the artists own websites'. In turn the artist's websites should have links to RedBubble.com, along with other links to any other social network such as Facebook, Myspace, Linked In and to all art related events and shows. Links coming in from the outside should have a 100% rating and links within the website should be weighted as part of that. These additional links help personalize the website by helping them develop an on-line relationship with the artist both on the RedBubble site and elsewhere. This is an extremely important element in selling art. Many art buyers, base their art buying on having met the artists and which is the reason that actual art galleries have showings and why some artists have elected to sell their art exclusively at private exhibits

and art shows where they are present. (Spiegler, Marc, "Are Art Galleries Necessary", The Art Newspaper.com, 2004) .

Risk – There is a risk that a few artists would dominate the website, but since the art would be based on the artist themselves, they would not be able to use their pieces to fill the majority of the collection. More so this risk may be diminished because it may help weed out the more serious artists from those who are only passively interested in selling their work. Also, there are fewer artists than pieces so even if the top 10 artists work would be promoted to the top, it would not have the same impact on having 50 of each of their pieces which would be the top 300 entries.

Artist – Due to the amount of artists who are active on the website, the explicit ratings are very likely to be biased. Rather than passively allow comments that do not clearly indicate that they are from artists, the recommendation system should exploit the comments of the artists and feature them as such.

RedBubble should introduce a non-algorithm based series of artist's recommendations that legitimizes the recommendations of the artist as a feature called 'What this Artist Likes' or something along those lines. Starbucks sells music CD's based on favorites of well known stars in their stores and features them at the counter. RedBubble could further personalize the user experience so that they could get to know the artists and develop a connection with them. Each artist is an expert on art, so the opinion of an artist is more valuable than somebody who is not.

Risk – There are artists who will dominate the comments section, but because this is an artists open forum, the competitive spirit should not be hindered. Those artists who are serious about selling their work will help grow the RedBubble website and they should be allowed to do so. Since the work will be categorized by artists and since the artists who don't participate will begin to fall off, the serious artist of the long tail, will have a greater chance of showing their work.

Testing the Proposed System's Effectiveness

RedBubble is interested in bringing a broad selection of quality art to the public and they have maintained a professional level of quality in the work which they display. In order for them to thrive as a business, they need to increase their revenue. Since their products are low cost, they cannot increase margins by much so it is important for them to increase volume. The success of the improved Recommendation system of linking the artists to the outside world should be measured directly by measuring the correlation of links to sales, based on past performance. An increase in links should correlate to increase in volume. Separately, the number of comments in total, as all comments are a positive indication, should be measured against the increased volume to determine if a correlation exists.