MAKING WEALTH MANAGEMENT DIGITAL

Presenting UBS Updates

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Overview

UBS Updates ties both design and engineering innovations in order to curate financial information more effectively for UBS Wealth Management's mobile application. The "news-feed-like" product displays important and relevant information with minimalistic and professional user interface. The information is sorted through different layers of machine learning and data analysis techniques. The design is inspired by a social theme, in order to recreate the social aspect of wealth management in a digital environment. Furthermore, UBS Updates allows for users to receive customized, relevant information and is an important stepping-stone to making wealth management digital.

Problem Statement

Across the industry, clients are overwhelmed by data from publicly available financial information and banks' proprietary research. As part of continued innovation and our commitment to service excellence, UBS is seeking a new methodology for identifying the most relevant information for each client from all available data and delivering dynamic personalized content, tailored to the individual client's needs and investment preferences.

Competitive Advantage

Our solution is the combination of design and engineering innovations, specifically targeted to wealth management clients. In comparison to other techniques, we offer a unique solution, where we intertwine the curation of relevant financial information into a social environment.

Customer Insights

Wealth Management is Relationship Management

When creating digital product, it is important to understand that wealth management is essentially about building relationships and less about investing. Furthermore, the digital product must simulate the social aspect of wealth management if it is to be seen as an alternative. In Figure 1, it shows that wealth managers contact their best clients almost three times as often as do investment generalists. This increase in contact has provided wealth managers with the upper hand, when comparing the amount funds that are brought into the private bank. According to CEG Worldwide, wealth managers on average outsource more than three-quarters (76.8 percent) of their money management business, which means money management is not the most important part of the wealth management business.

Figure 1: Times Per Year Advisors Contact Each of Their Contacts, Source: CEG Worldwide, 2007.

The Wealthy Are Willing to Trust Information on Social Media

According to a study from LinkedIn on investing and social media, the Ultra Affluent ($5M+ in investable assets) are passionate about investment research, with LinkedIn proving to be an invaluable resource. It also showed that Ultra Affluent are 37% more likely to trust information from their LinkedIn network and 157% more likely to trust articles that are shared on LinkedIn. In fact, Figure 2 below shows that 5 million Investors with $100K+ assets who use social media to research and make financial decisions. Due to the accumulation of trust between investment decisions and social media, the design for UBS Updates simulates a professional social media "news-feed" like LinkedIn.

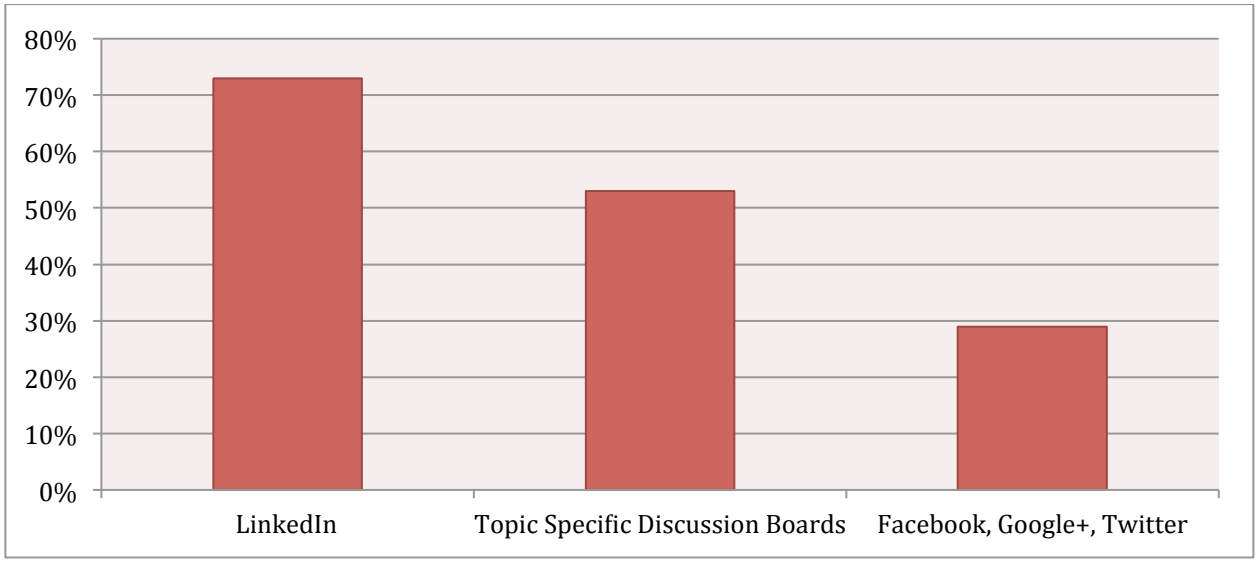

Figure 2: Use of Social Platforms for Finance Decisions, Source: LinkedIn, 2012

Clients Ask Specific Yet Common Questions

Wealth management clients tend to ask similar questions. These questions are most likely related to portfolio management or investment opportunities. In order to accommodate the underserved 80% of wealth management clients, it is important to be able to answer those questions with two conditions – either minimizing the wealth manager's time spent on answering the question or being able to answer the questions without involvement from the wealth manager.

Product Functionality

UBS Updates adds a social aspect to the Wealth Management digital platform. Through collecting and sorting various financial content from UBS, which is most relevant to the client through machine learning and data analysis techniques, it is presented in a simplistic and professional way in order to appeal to wealth management clients. Technical methods are explained in greater deal in Technical Description section. UBS Updates customizes the information to suit the users of the application. Content is sorted using more stable variables, such as expertise or financial goals, while also optimizing content towards content history and trends within the client's investing portfolio to determine the most relevant topics. UBS Updates also collects the data for usage trends, such as time spent in app, content read per day, to determine the optimal design for UBS Updates. As for the beta product, UBS Updates only consists of 20 pieces of financial information per day. The amount of content shown will change after a thorough analysis of the data gathered, thus creating a more representative design.

Three other important aspects of UBS Updates are the share feature, approve feature, and ranking system. The share feature allows for the user to share the content with their wealth manager, along with a short message. This replaces emails and speeds up and simplifies the communication process between both parties. The approve feature provides users with the opportunity to approve content they think is helpful towards reaching their financial goals. This enhances the social aspect of UBS Updates. Lastly, the ranking system takes into account all variables during the sorting of financial information, and presents a ranking on the platform, and further more providing a benchmark for relevancy inside UBS Updates.

When wealth management clients decide to research financial information, it is often for one of two reasons: investment management or investment discovery. Furthermore, in order to curate content that is more relevant to users, UBS Updates curates information within two modes: management and discovery. It has a quick-change button on UBS Updates home-screen as shown in Figure 3. The content is sorted and ranked based on relevance, urgency, and popularity.

Management mode is specifically designed for users looking for financial information regarding to their portfolio. Discovery mode is specifically designed for users looking for financial information regarding new investment opportunities. For

Management mode, financial information is sorted based on relevance and urgency to this current performance of the portfolio. For example, if the client is a shareholder in equity x, relevant and urgent information about equity x is curated on the management platform. Discovery mode evaluates multitude of variables (explained in-depth in Technical Description) to present content that helps support or disprove investment opportunities. It also pushes content about investment opportunities and updates about the clients' watch-list.

The problem of conflicting content between Management and Discovery mode is displayed in Management mode. This based on the hypothesis that wealth management clients utilize the UBS Wealth Management platform more often to complete research about their current portfolio, in comparison to finding new investment opportunities.

Technical Description

The technical aspect of UBS Updates is based on layering different types of machine learning and data analysis techniques in order to provide clients with the most relevant information on the UBS Wealth Management mobile application. There are three layers with a combination of these machine-learning techniques: rule-based, decision-tree learning, and artificial neural network. Layers 1 and 2 are implemented within the application consecutively, while Layer 3 is used for building a better design for the future.

Layer 1

The rule-based scoring metric is the first layer activated. All information entering the application is filtered through this first layer. The variables used are based upon the clients' needs and financial goals. In order for a more customized approach for the clients, all new information resources are sorted utilizing this rule-based approach. Furthermore, this rule-based approach needs certain variables to focus upon in order to sort through this information. The variables for this layer will be predominantly based on expertise, location, favorite types of investments, investment history, and other financial variables determined by experts.

$$\sum_{0}^{i} w_i v_i + e$$

Notation: w = weighting, v = variable, e = error constant

Financial experts determine the weightings. The answer returns differently for each user. If it hits above a certain threshold, the financial content is passed onto Layer 2.

Layer 2

The second layer of machine learning uses two types of machine learning models to provide subsequent recommendations for the financial curation. Throughout the process of using the mobile application, I have determined two main purposes for financial curation – investment management and investment discovery, as stated in the Product Functionality part of the report. In order to sort financial content into the two divisions, we have to comprehend the algorithms for both management and discovery. This means that they are mutually exclusive.

Our management algorithm uses a decision tree model to compute the probability of relevance of the financial content with the portfolio. This is based on variables of securities and weighting in portfolios. For example, if there is relevant and important news about a security the client has invested in, the content appears on UBS Updates within Management mode.

Management Algorithm: ID3 (Iterative Dichotomiser 3) where $ID3(Examples - vi, Target\_attribute, Attributes - \{A\})$

Our discovery algorithm uses a neural network in order to compute the relevance of the financial content. Since the data we have at hand is ambiguous, neural networks serve this purpose best. Discovery focuses upon investment strengths, historic trades, and weighting of the user's portfolio to determine the relevance of the financial content. This algorithm also analyzes the financial content, focusing upon keywords that reflect a good buy such as undervalued, strong buy. If this security also is on the user's watch-list, there is a high chance that it is relevant. It is necessary to provide training data to conduct supervised learning for this neural network. The training data consists of financial content with 80% test and 20% real.

Discovery Algorithm: Back propagation

Layer 3

Lastly, UBS Updates thoroughly analyze the clients' practices and allow for a customized financial curation experience. The variables used in this layer are as follows: # of financial content read per day, # of investments on a monthly basis, and time spent on digital platforms. These variables allow the platform to minimize the amount of information on the mobile application on UBS Updates. By using the variable to find the optimal number of financial information, we can minimize the amount of clutter within the financial curation process to fully satisfy the clients' needs. This allows for efficient usage capacity and decreases the program runtime.

Product Design

The important part of the design of UBS Updates is that it can be consistent and complementary with web based UBS product. The design is once again simplistic and professional to cater to the demographic of users and simulates a "news-feed" for the social aspect of the product. With the innovation features of Management and Discovery content, it allows for users to access the information they need without the clutter of too much information.

Sample Screenshots

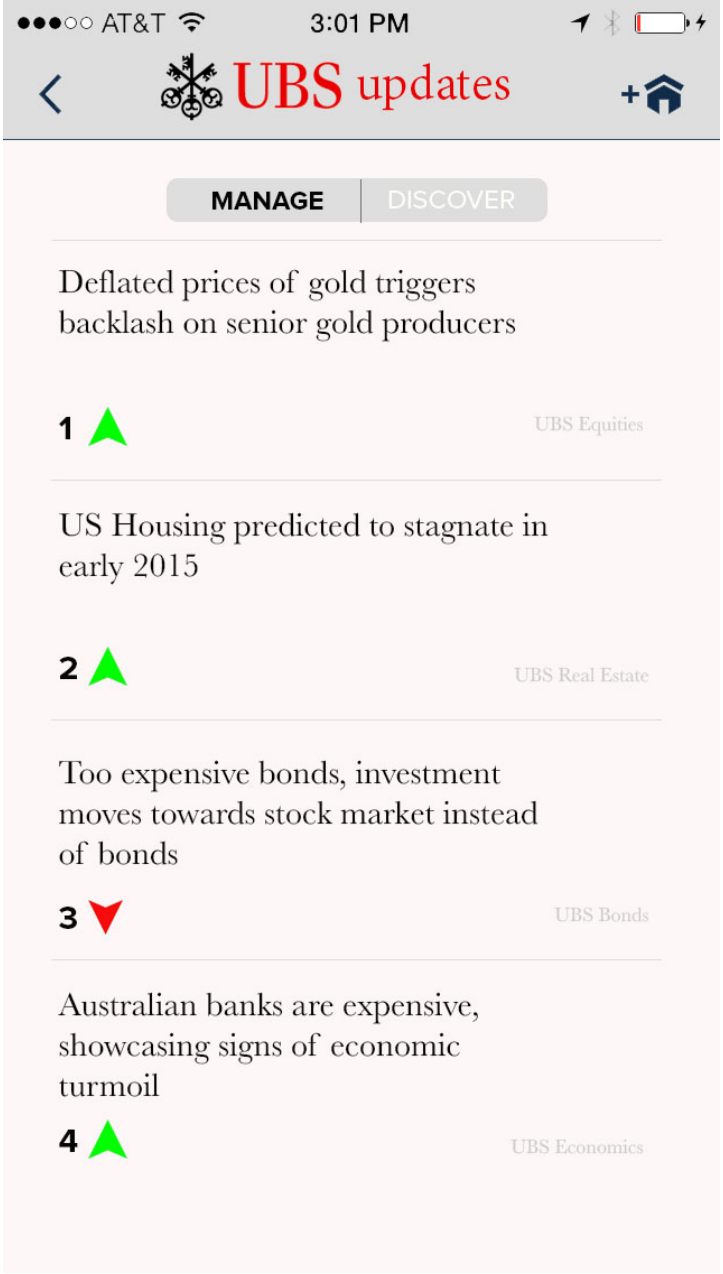

Figure 3: UBS Updates Home Page

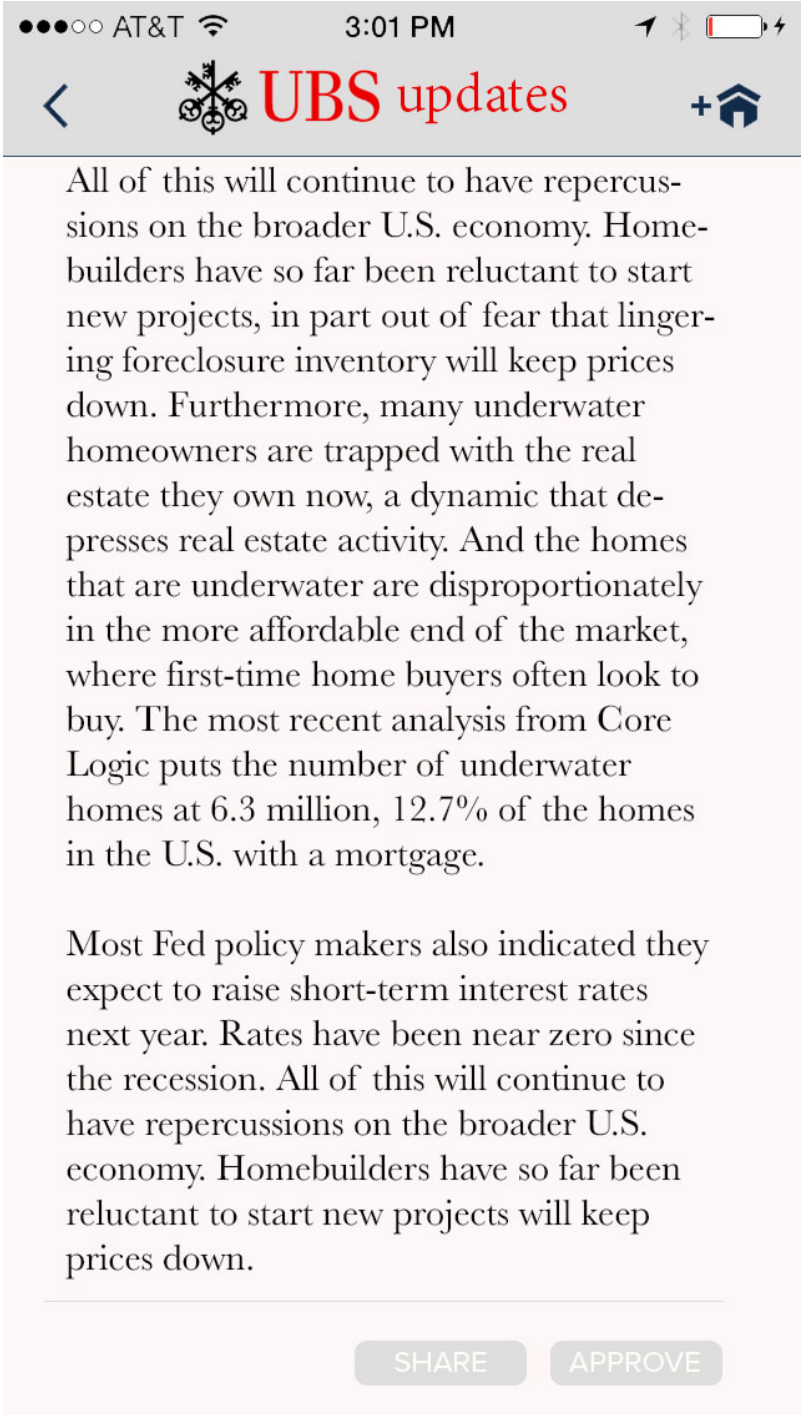

Figure 4: Content Page

Next Steps

The next steps for the development of UBS Updates are to test feasibility of the machine learning algorithms while receiving expert opinions on the variables chosen for financial curation. Secondly, test customer hypotheses stated in customer insights to solidify validation. Lastly, develop MVP for the product, UBS Updates.

Why Am I Interested in UBS Challenge

I would like to help UBS build this product from the beginning of December to the end of January. This product intrigues me because as an investor myself, I have always wished there was an easier way to get relevant financial information. I would love to test out my hypotheses and help launch the UBS WM mobile application along with UBS Updates within the coming months.