Team MakeItRain

Project Proposal

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Contract Names:

- Parag Bhandari - *bhanda32*
- Yuya Iwabuchi - *iwabuchi*
- Fatima Sanchez - *sanche71*
- Gerrit Steinbach - *steinba5*
- Jai Sughand - *sughandj*

University of Toronto Scarborough: CSCC10H3

Table of Contents

1. Introduction

Online Banking is a revolutionary system that has changed the way people manage their finances. Unfortunately, the current implementations that exist are a direct translation from traditional banking solutions, while not taking full advantage of available technology. As a result, overall usability and user experience of online banking have suffered. Banking institutions have also been working independently on their services which has aggravated the problem. OneBank, a platform to allow banking institutions to integrate with others, looks to solve the problem of online banking experience.

OneBank's aim is to unite the online banking experience by linking multiple banking accounts and aggregating relevant information for the users. Users who have banking accounts across multiple banks would greatly benefit from OneBank. Users will no longer need to access multiple websites or applications to have a grasp of their financial standing. OneBank is designed from the ground up while considering usability and user experience at every corner of the product to provide a pleasant and intuitive online banking experience.

2. Target Audience

OneBank is designed to go beyond user friendly and intuitive banking. The only restrictions for the marketing demographics are that they must be a Canadian bank account holders and must be of legal age in accordance with national bank laws of account holders. The reason behind only allowing Canadian bank account holders is because the Canadian banking industry is oligopolistic and will be easier to integrate OneBank. The marketing psychographics that are heavily pressed upon is the universal nuisance of having to physically go to banks for any financial need that can easily be done through the comfort of a smartphone application. According to Doug Bruce (2007), the qualitative number of branches available in Canada by the major banks has been reduced, thus creating demand among the majority of Canada's population who have a bank account.

3. Features

Current banking solutions are inconsistent in terms of their user interface and experience. For example, Figure 1, 2, and 3 show how different the alignment of the login form and navigation is on various banking websites. Once you sign into those websites, each of them have a distinct way of accessing and displaying account balances, transaction history and payment methods. Moreover, there are very limited ways of visualizing the information in order to perform quality analysis. OneBank's main goal is to allow customers to easily access, visualize and analyse their financial data from all their accounts. The following is a list of the features and improvements that OneBank will provide:

I. Dashboard:
    A. Cumulative balance of accounts (native language)
    B. Asset distribution (pie chart)
    C. Expenditure forecast (line graph)

    The simplistic dashboard with various illustrations will cumulate and summarize the finances of a user, promoting ease of access to information.

II. Autopayments setup for bills (phone, internet, utility) with customizations:
    A. Waterfall prioritization of accounts
    B. Distribution across accounts

    Users who spread their finances across different banks will now have the ability to conveniently choose between them to autopay each bill.

III. Transfer money to people with customizations similar to autopayments.

IV. Visualizations for transaction history:
    A. Stacked bar chart of categories by time period
    B. Heat map of transaction based on location and amount

    Providing illustrations of users finances will allow them to comprehend and analyse effectively.

V. Aggregated list of transactions history with functionality to:
    A. Display additional details of specific transaction (category, location)
    B. Sort
    C. Search
    D. Filter

    With current banking websites, you cannot do much with the transaction history other than just scroll down.

Nice to have:

1. NFC payment like Apple Pay/Android Pay that decides the best benefit credit/debit card to use for that particular transaction
2. Create/destroy accounts
3. Student verification
4. Credit limit upgrade

4. Assumptions

Since the banking application will display customer data according to their banking information regarding a customer's account(s), OneBank will need to have some sort of access to the customer's data via their bank such as bank balance, transaction history, account type, payment authorization and various other pieces of data. One challenge may be that banks will be reluctant to give third parties access to their customers' data as there are a lot of rules and regulations pertaining to a customer's privacy. Our assumption is that the Canadian laws and banking Institutions grant us the privileges to do the activities mentioned above.

5. Literature Review

5.1 Inconsistency and Unusability of Current Banking Websites

A group of chinese researchers conducted a study to analyse the usability of online bank interfaces by tracking eye movements (Yuan, X., Guo, M., Ren, F., & Peng, F, 2014). Three banking website's homepage and personal banking login interface were chosen for the experiment. The websites had noticeable differences in their user interface. College students aged between 20 and 35 were chosen at random. The experiment was divided into 4 stages: Explaining the tasks, calibration of eyes, performing the tasks, and inquiry about the impression. While the tasks were being performed, the eye trajectories, heatmap and clusters were tracked using the software. Analyses of the eye movements, blinks, and gazes was performed after the experiment and the overall results were fascinating. One of the login pages had the credential form and navigation fixated towards the top-left section of the screen which allowed the user to locate them quicker than the other login pages. Gaze and blink analysis of the different pages also suggested that showing too much information increased the time to complete the tasks as it distracted the user. Through inquiry, they found that the users preferred the website with clear navigation, moderate amount of information and warm style settings. The conclusion was that the key information of a banking website should be placed around the top-left region with appropriate proportion, reasonable font size and comfortable styles otherwise the user may get distracted and take more time to perform the intended task.

5.2 The Mobile Payment Revolution

The Mobile Payment Revolution by Sunil Gupta addresses the topic of electronic banking and how its development has benefited customers and the economy. Gupta explores the changing dynamic in developed and undeveloped countries and takes a more global view in the way electronic banking paved the way for innovation. Though the need for online banking is apparent, many developed countries are still new to online banking, and many of the benefits are more evident in developing countries due to the lack of banking institutions as a whole. But electronic banking still leads: "The 7

billion people in the world have 6 billion mobile phones but only 2 billion bank accounts". The Mobile Payment Revolution addresses the fact that electronic banking is less limited by the physical aspects of banking, and can therefore provide more of a universal service to its consumers. Mobile banking also allows for innovative services to be invented that are now leaders in the emerging electronic market. Services such as Safaricom amounts to 31% of Kenya's GDP, and Paypal's quarterly revenue amounts to $1.37 billion. Gupta stresses the importance of mobile banking on the modern economic market, and the need for modern institutions to join in this emerging trend rather than letting it pass by. The Mobile Payment Revolution gives the reader an economic snapshot and an outlook of what should occur next.

5.3 The Rise of Paperless Banking

Doug Bruce, the Director of Research for the Canadian Federation of Independent business, analyzed the results of a survey which reflected the views of small business owners in Canada on banking issues. At quick glance, Bruce (2007) generalizes that "the banking sector is not making significant strides towards better serving the small business sector" (p. 1). Though the product is initially designed for personal financing, it may be seen in the nearby future to aid small business owners as well. What was interesting about this article was that there were nine performance indicators used to rate by small business owners. It was based on a four point scale which included their feedback on online banking and rated their access to full-service branches of their personal banks. There appears to be a need for this product, as the latest findings indicated that apart from two banks, most major banks had dwindled when compared to previous years. A major need of small business owners is asking for loans. Some may argue that this process must require an account manager, however it has actually become, according to Doug (2007), a "widespread automated credit scoring among the banks to assess business owner's credit applications" (p. 9). This indicates that local bank branches are not the ones deciding, simply passing along information that user could submit instead. This seems inconvenient, as users should have the opportunity to submit paperwork online, allowing them to bypass appointments required for simple paperwork.

5.4 Sluggish Canadian Payment Solution

Shaikh and Karjaluoto (2015) conducted a literature review on various research articles which focused their research on mobile banking. According to them, the use of mobile phones to conduct banking transactions and access other financial information in mature markets has not widely been adopted. Factors like ease of use, usefulness, trust and social influence affect whether people will use a banking application. Ease of use and the usefulness of the banking applications were significant factors affecting the attitude of users towards using the apps. Their research concurs with Pellegrini 's (2015) article in the Financial Post which states that Canadians have not been

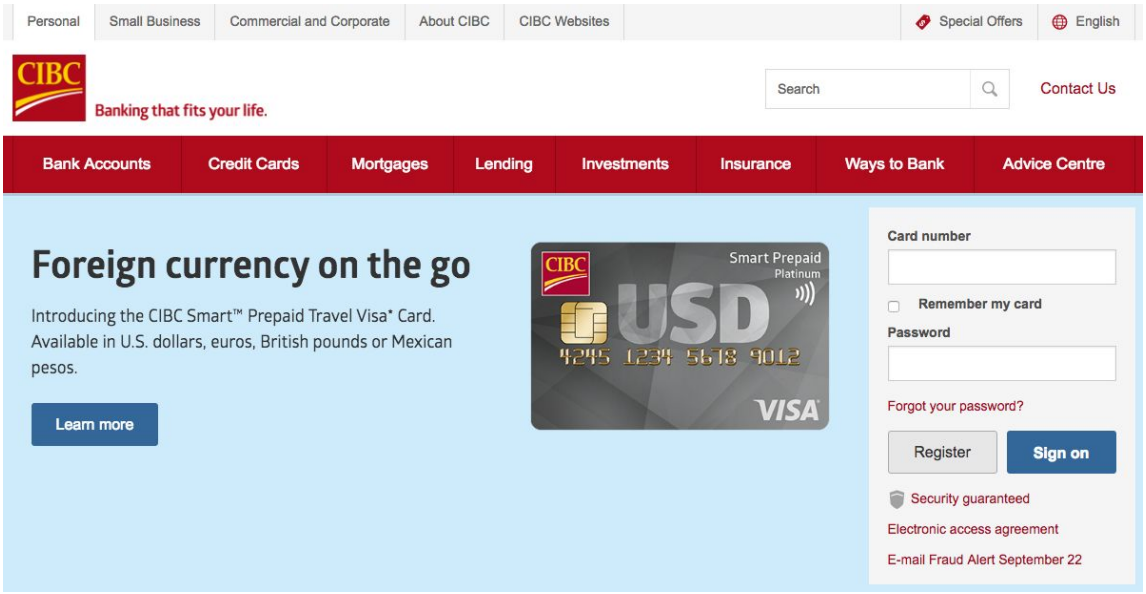
clamoring to use their smartphones to make payments and that in fact, the number of Canadians making payments with their cellphones have been so slow that the statistics wouldn't even register. Standardization, integration, consistency and portability are important aspects in order to have a usable application. Unfortunately, for banking apps, there are no existing industry wide standards regarding UI that they must all adhere to. Bank application also lack consistency amongst each other and between the same bank's web and mobile apps. If you look at Figure 4, the navigation bar is to the left however the RBC app's navigation is at the bottom. It is important to have a UI that is consistent across industry and all the banking apps and Canadian banks lack that as of now.

5.5 Positive Trend with Mobile Banking

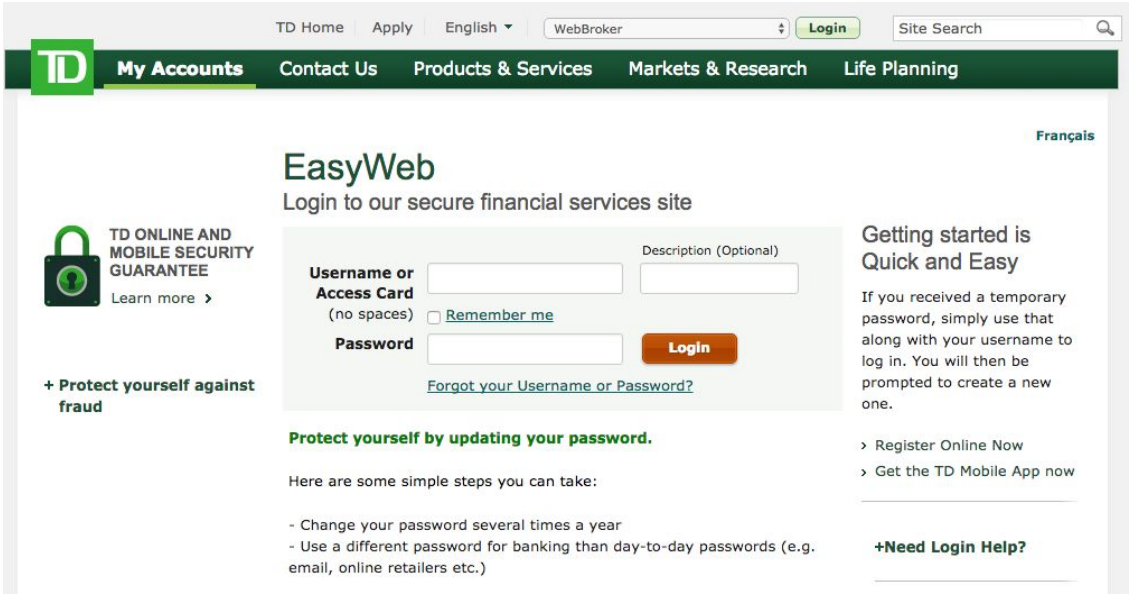
Florian Moser has conducted a study to understand current standing of mobile banking industry, and whether it is an artifact that banks have created out of the hype of mobile devices and Internet, or it is a solution that was produced to increase the efficiency and is adopted by bank users (Moser, 2014). He have researched past 13 years of publications related to mobile banking while observing the trend and patterns through those years. Through his research he have viewed positive trend indicating the adoption of mobile banking across the globe. He have mentioned that the emergence of mobile technologies, such as smartphones, and its general acceptance is playing huge role in this trend. The article concludes that the positive trend of adoption will continue, while temporal hype or recession will likely to occur due to external factors. For example, customer-driven barriers, such as privacy issues may temporarily slow down the adoption (Moser, 2014). He have also stated an integration with social networks should be considered in future. While theoretically this may provide better experience for users, this suggestions will not be secure nor realistic with current solutions of social networks. Furthermore, banking informations are traditionally kept personal apart from others, and there were no definite finding that states otherwise. Therefore, his suggestions may not be relevant to how future will play out.

Appendix A: Visual Aids

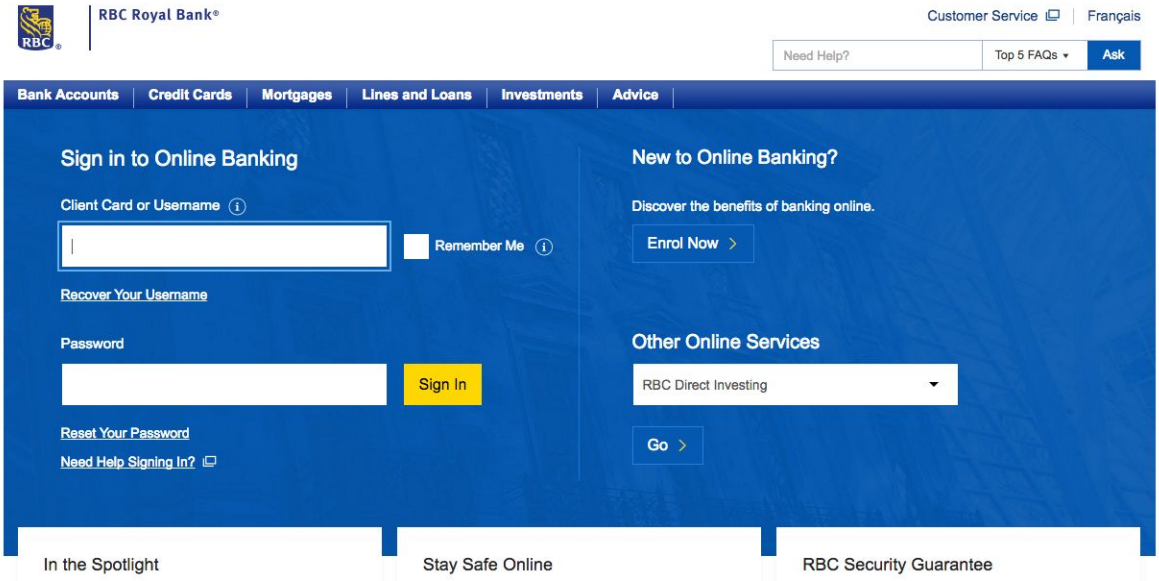
- Figure 1



- Figure 2



- Figure 3


RBC Royal Bank®
Customer Service
Français
Need Help?
Top 5 FAQs
Ask
Bank Accounts
Credit Cards
Mortgages
Lines and Loans
Investments
Advice
Sign in to Online Banking
Client Card or Username
Remember Me
Recover Your Username
Password
Sign In
Reset Your Password
Need Help Signing In?
New to Online Banking?
Discover the benefits of banking online.
Enrol Now
Other Online Services
RBC Direct Investing
Go
In the Spotlight
Stay Safe Online
RBC Security Guarantee

Appendix B: Referenced Documents

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