System Proposal

Executive Summary

Target US is steering clear of the rivalry between Walmart and Amazon by introducing its own digital model and programs that bridge consumers to the future of commerce. In order to carve out a niche for sustained growth by executing well on what Target's existing customers love, Target has introduced an omnichannel model that enhance its online presence. However, a stagnant industry caused from monopoly makes Target a weak candidate against Amazon or others risen in particular niches. Therefore, Mr. Stan, the Chief Operation Officer has announced a 2020 initiative to incubate a system to strengthen its online presence, drive online traffic, increase brand loyalty, and defend market share erosion in e-commerce.

As a group of interns, we were fortunate enough to be selected to work along the project sponsor on this project from scratch, helping system analyst draft proposal, prepare requirement documents, and oversee the development of the product that automates current online shopping experience. Though we approached problems critically, with little to none system development experience, we failed to identify some of the major aspects during planning and analysis phases. Our team therefore has summarized the feedback from management executives and refined the scope with the modified details to pursue gradual refinement. We thoroughly walked through every piece of feedback and analyzed the perspective wearing management shoes: 35.43% believe that the proposed system has issues with industry and the likelihood to succeed with current business model is hypothetical; 21.39% of feedback are not convinced the system is feasible from a technical perspective, in particular, the algorithms runs the bidding process and security-related concerns; 15.70% are concerned with the cost structure, growth potential in terms of return on investment (ROI), and future cash flow; and roughly 25% is concerned with our resource allocation strategy such as time and human capital.

Target utilizes Target.com as its major source of online traffic. Our research suggests that 45.80% of traffic directly comes from Target website, 46.50% of traffic comes from search engines, and roughly 10% of traffic are redirected from social media and referral websites. With strong reliance on search engines and other websites, we believe a platform that helps Target establish its presence in e-commerce to overcome Amazon is a long-term vision.

The current system (as-is) doesn't support a shopper who likes to compare prices amongst a wide range of options. Similar to other on-site shoppers, online users also sort options themselves through various vendors' websites to maximize their purchasing power. Thanks to algorithms and Target's long tradition of forward thinking, the to-be system is to allow users to select a product which is sorted by the algorithms in the backend. In other words, GogoMart will be an all-in-one deal search platform that empowers customers with the rights of choice by automating the filtering process. GogoMart is driven by helping customers finding the best rates by comparing a million deals across over 250 small-to-medium e-commerce sites. This to-be system is going to redirect the traffic to the home sites of the vendors therefore GogoMart will avoid taking lavish sales cuts and substitute with dedicated services for customers.

GogoMart is believed to help Target maintain its 30% gross margin by focusing on two revenue sources: advertisement from partners and sales shadowed from increased traffic. The platform has no intention to charge fixed commission for transactions occurred on the platform as it's a form of advertising based on real-time price comparison. Referral revenue will be the driving force of operating income, which is earned when users click on a particular deal from the search results. Retailers are charged based on a cost-per-click (CPC) basis, whereby e-commerce pay GogoMart for the clicks that users make on GogoMart when selecting deals and products. CPC in this case for each spot is determined through a bidding process that takes place on marketplace. In 10 years, GogoMart will be happy to launch small business program that supports the onboarding of small-to-medium sized businesses such as local farms.

Candidate Matrix

To serve the request and help Target realize a higher brand value, a platform called GogoMart will be introduced by our team. Three feasible alternatives- in-house, custom development, outsourcing- are to be evaluated in depth to ensure the selected design strategy is tailored to the organizational needs.

In terms of development speed, purchasing a packaged software are desired because the likelihood of an application with similar features which have been developed in the market is extremely higher. Outsourcing is also a winning design strategy in speed. However, Target has to compromise confidential information or lose control over future development considering the large customer base. In contrast, customized solution eliminates the concern by allowing our team having full authority over the development of core contents along with data access which

are essentially the most valuable intangible assets.

The data processing methods are client / server, and the client uploads data to the server. The server is deployed based on the cloud space. The data store uses SQL Server in the background and AWS in the front end. All security authenticated users can log in to our APP. A user will be redirected to the vendor website from GogoMart application and websites once a user clicks on a selected product. If we implemented strategy with heavy focus on in-house development, the codes are in compliance with our company's regulations. For the option of outsourcing, their company's code rules may be different from ours, but they need to provide us with an interface that can be used.

Now we are going to compare the following measurement indicators: operability, technical feasibility, time feasibility, economic feasibility. The self-developed operability is the strongest. Because it is developed by the company itself, all desired requirements will be developed. In the case of outsourcing, there may be inefficient communication. For technical feasibility, outsourcing is the best. Because the outsourcing company has more experience and expert on that, and the staff is familiar with the process and steps of APP development, but it may cause security risks. For time feasibility, outsourcing is the fastest. Because their job is to help others make outsourced apps, they will be faster than our own development. And last part economic feasibility, complete in-house model requires the company to invest a lot of manpower and resources to create a maintenance system, which the cost is not effective. Complete outsourcing provides the basic system, but it does not require maintenance. Thus, we may need to improve the algorithm and maintenance, make higher security and technical feasibility and reduce time.

After all the comparison above, we conclude that GogoMart would choose a combination of packaged software and In-house to customize the development.

Technical Feasibility

The technical feasibility of our project is assessed based on four criteria, namely familiarity with functional area, familiarity with technology, project size and compatibility.
Firstly, it is very risky if the analysts or users are not familiar with the business function of our new project. And in general, developing a new system is riskier than producing extensions to an existing system because existing systems tend to be better understood. Our project team is under target corporation and the product we deliver is basically online shopping platform just like target.com with added features and improved ranking algorithms. Hence, our application

development will start efficiently with smart time allocation to familiarize ourselves with the functions. And most users from other shopping platform could have a smooth transition to our platform.

Secondly, the risk of the project is associated with the familiarity of technology, and risk increases dramatically when the technology is emerging. In this case, our team members are equipped with knowledge and technologies required for this project. And our application development engineers have years of experience with UI interface tools like adobe XD, relational database management systems like MySQL server, and web page design languages such as HTML, JavaScript, CSS, and java. Hence, the problem will be less likely to occur and project is believed to be delivered on time without delay.

Moreover, project size is also an important consideration because for a large project, there are more features need to be built and it is prone to mistakes and miscommunications. Our project's use cases include account sign up/sign in, security check, store or update payment information, making purchase, managing orders, tracking delivery, customer services and account safe exit. It is obvious that our use cases are simple to understand and hence the features should be easy to deliver. Since most of the use cases are commonly found in other existing platforms, the incorporation of existing system can further simplify our project to a manageable size.

Lastly, it is also very important for the new system to incorporate the technology form our existing system as it is almost impossible to build `a new system from scratch. Our project is highly compatible because it has strong connections to our existing resources. For example, our Gogo Mart platform and Target online website can share the same customer database. In that way, we are able to successfully redirect the flows from one website to the other and at the same time keep their taste and preferences across both websites. Besides, our project team is able to enjoy all the conveniences in terms of communication and support from other teams. With the help of our existing system, we will be able to deliver the project smoothly and effectively.

Given that our project produces only extensions to our existing system combining with our existing database and communications infrastructures, we have fully adapted the technology to develop our limited number of features. Our project is highly feasible technically since the risks can be easily contained and managed.

Organizational Feasibility and Project Timeline

As we move to the design phase, requirements gathering is done and now we need to set an execution strategy, in addition to the many other design requirements that should be established.

The strategy should rely on organizational, economic and technical feasibilities which are company specific, would require a deep understanding of requirements and should be aligned with our business goals. We aim therefore to identify three candidate solutions that best accomplish our project and optimize its benefits which are: full in-house development from scratch, custom development that combines some packaged software that will be internally customized to best fit our requirements and lastly an outsourcing option.

There are many organizational factors that can have an effect on the project, hence making sure that our organization's structure is ready to handle the load required by the project and the sustainability of future implications of the project as to supporting the company's business goals is very important. One of the success measures of this project is estimating the dedication of our organization to the project. In our case "Target" is a large corporation that can easily handle the accomplishment of "GOGO MART". The project aims to increase sales volume and online presence of "Target" and therefore a proper execution of the project will greatly benefit the company. From an operational perspective, "Target" is required to allocate some of their resources such as accounting and probably marketing and technical expertise to fulfill the project and these will vary depending on our best chosen strategy. For our first candidate, in-house development, the company is required to allocate a significant amount of resources, which we estimate to be ranging between 10 to 15 employees covering different areas of the project for pre-completion and post-completion respectively. The required expertise for this option will be functional and technical distributed upon management, administrative, accounting, marketing and IT professionals, hence this option will be expensive and require relatively a long timeframe. The second alternative will be outsourcing the project to external developers. This option is more practical in comparison with the first one since it will not rely on internal resources and the project delivery will be much more faster considering that external vendors have high exposure to such technical challenges. Project Marketing can also be outsourced, relieving "Target" from more functions and limiting them to some administrative and technical consultancies carried by the project manager and later on assisted with some accounting experts. Although less stressful, this option can be more expensive and will leave our internal expertise concerning this project idle. Lastly, the third option will be custom development, which will be using some packaged software to speed up the development process and saving on allocated employees. This option

has many advantages over the previously described ones since it minimizes to demand of resources from our organization and at the same time keeping the control of the project and its expenditure internal. System users will be much more involved knowing that they are reliably directing their company's interests and driving up sales, also with minimal dependencies from an organizational standpoint. For this option, the required expertise will be mainly technical with only 9 employees overall and thus less expenses and again hedging this option over the others.

From a legal perspective, all selected alternatives require reasonable interventions. For in-house, it consists of "company-employees" standard formalities and copyright clearance for the to be system. Similarly, the custom development option will consist of the same process but with more copyrights to include the purchased solutions. Finally, for outsourcing, legal procedures will vary from copyrights to non-disclosures and penalties on contract violations between "Target" and the outsource company, making this option the most vulnerable.

On the other hand, if in-house or custom development is chosen then we need to go ahead with the implementation, testing and deployment of the project. Consequently, we need abide agile methodology with continuous and iterative delivery for a sequence of tasks that follow the design phase. With this methodology we will ensure a fast milestone completion and be prepared if any changes in requirements will occur. The schedule set for both custom and in-house approaches take into consideration some extra time allocated for unexpected events and also giving the opportunity for team motivation. That being said the estimated timeline for custom development will be 16 weeks primarily divided into 7 main tasks required for project completion; whereas in-house timeline will be double since we here consider developing everything from scratch which includes frontend and basic e-commerce functionality and reports.

In conclusion we can here infer from all the pros and cons stated in this part that custom development and outsourcing both compete for the best strategy except a slight advantage for custom development regarding future project prospects and profiting from available talents and using them to best benefit of the company.

Economic Feasibility

The economic feasibility weighs 25% in evaluating which business model GogoMart runs. We made a grand ten year economic forecasting which evaluates the profitability of three candidates. Calculations are made based on revenue, development cost, and operational cost.

Gogo Mart's revenue is contributed by three aspects: Advertisements, increased sales towards Target U.S., and later on, B2B services. Major revenue will come from advertisements. CPC (cost per click) is the model we use for advertisement income. As a shopping application platform, Gogo Mart displays products provided by different retailers. Retailers like CVS and Star aiming wider sales channels would like their products to be seen on more platforms. CPC comes into play at this part. Customers have to click on the link of the product in order to purchase. We, as the link provider, count the amount of clicks of certain products belonging to each retailer and charge the retailer for the intermediary service. The same rule applies to the companies intending to put their advertisement on our platform. We made a reasonable prediction that our advertisement revenue will be around $3 million in the year 2029. The second revenue contribution is the increased sale Gogo Mart directing to Target U.S. As the subsidiary company of Target, Gogo Mart is obligated to making revenue for our parent company, Target.U.S. All the products sold by Target would also be shown on Gogo Mart. We made a prediction that Gogo Mart will contribute $12 million by projecting customers towards Target U.S. Our third revenue contribution comes from B2B services starting from Year 2025. With more and more data, Gogo Mart can provide cloud services and consulting services for other businesses. We predict our revenue of B2B will be around $5 million in 2029.

The cost evaluation including developmental and operational cost are made separately for 3 candidates for 10 years. We considered Development Team Salaries and Hardware & Software as criteria to assess Developmental cost. For Operational cost, we considered operational team salaries, marketing, and Hardware & Software. Candidate 1(In house) has the highest developmental cost and highest operational cost. Candidate 2(outsourcing) has the highest developmental cost and lowest operational cost. Candidate 3 (customize), comparing to the other two, has the lowest development cost and moderate operational cost.

The Cash flow for 3 candidate combining revenue and all costs gives us a better estimation of ROI and break even point. Candidate 1 has ROI of 303% and break even point is 5 years. Candidate 2 has ROI of 414% and break even point is 4 years. Candidate 3 has ROI of 1288%

and break even point is 3 years. It is obvious that candidate 3 is the best economic candidate which has high return and short break even time.

Prototype

As for any new mobile application, a user must go through the process of setting up his account by having to sign up, set his/her location etc. Similarly the user who downloads our app ‘GOGO’ has to sign up with their credentials (email id, user name, password). After which they will be directed to a page where they set their location by searching for it through the places suggested by our application when given access to search by ‘device location’ or the user can lock his location by entering his/her zip code or address.

After all the initial required data related to the user have been answered, they will be directed to the main page or discover page where they can explore through various deals that changes as per season and also after he makes his first purchase, he’ll start getting recommendations as per his previous search history. He can either just scroll through random stuff visible on app or he can search for an item either doing a direct search or going through the categories. Once the user likes an item, they can click on ‘checkout best deals’ button to get the best deals. Then they can filter out the best deals by price, ratings, others etc. And after he selects the best deal, he can either continue shopping or checkout the cart by entering shipping and payment details. And then the order is placed when they click ‘place order’ button. They can confirm their order by checking their notification/messages. Once the user is done exploring, he/she can log out of the application.

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