



Needietary: Digital Platform for Providing Dietary Needs

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Abstract. Eating healthy foods has a long-term impact on achieving body health. A healthy diet can also cure disease and maintain a healthy body. Running the right diet program is still difficult for the community to implement because there are obstacles so solutions are needed to overcome them. This study aims to (1) identify the problems experienced by consumers while on a diet, and (2) design a diet digital platform that can be a solution for consumers who are on a diet. The method used in this research is customer discovery in customer development. Sampling was done through purposive sampling using 30 respondents who are domiciled in DKI Jakarta. The results showed that the problems faced when on a diet where the difficulty in determining the diet menu and boredom with the diet food menu. The results of the diet program design are in the form of an application prototype called Needietary which presents the features and products offered. The excellent features offered are in the form of a diet menu plan, a choice of diet food ingredients, a notes feature, a community feature, a shop feature, a short questionnaire, a dietitian/trainer subscription feature, and a review and rating feature. Based on the test results of feature solutions and products being laughed at, Needietary has become an accepted solution in solving problems related to diet.

Keywords: customer discovery · diet · digital platform · healthy foods · prototype

1 Introduction

A person is categorized as overweight if they have a body mass index (BMI) greater than or equal to 25 and below 27 and obese if they have a BMI greater than or equal to 27 [1]. The percentage of overweight in the adult population (age > 18 years) is 13.6%, this has increased compared to the 2013 Rikesdas of 13.3%. The obesity rate in the adult population (age > 18 years) also continued to increase in the 2013 Rikesdas 2013 by 15.4%, while in the 2018 Rikesdas it was 21.8%. Graph of the Development of the Proportion of Adults (> 18 years) who were overweight and obese, 2013) and 2018 can be seen in Fig. 1. Obesity has a harmful impact on the body. Obesity is the main cause of the burden of non-communicable diseases, especially diabetes mellitus, hypertension, stroke and cardiovascular. According to WHO estimates, there is a proportional increase

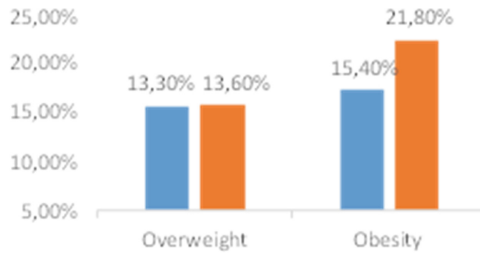


Fig. 1. The Development of the Proportion of the Adult Population (>18 years) Who Are Overweight and Obese, in 2013 and 2018



Fig. 2. Comparison of the Number of Respondents to the Knowledge of the Correct Diet

in deaths due to PTM in Indonesia from 50.7% in 2004 to 71% in 2014 [2]. Some things that can cause being overweight include genetic factors, environmental factors (dietary patterns and physical patterns), drug and hormonal factors.

Diet is an arrangement of eating patterns, both portions, sizes and nutritional content needed by the body. Diet consists of various types and is carried out depending on the type of diet that suits human needs. Diet will have a good impact on the body of individuals who understand diet because if the diet does not match the body, it can be bad for the health of the body. The wrong diet pattern can cause the body to experience unfavorable effects such as easily feeling hungry, often experiencing sudden changes in mood (mood swings), feeling weak, body often feeling sick, experiencing digestive problems, gaining weight. Erratic, and feel less happy [3]. There are still many consumers who do not know about the correct diet pattern [4]. The comparison of the number of respondents to the knowledge of the correct diet can be seen in Fig. 2.

Diet is an arrangement of eating patterns, both portions, sizes and nutritional content needed by the body. Diet consists of various types and is carried out depending on the type of diet that suits human needs. Diet will have a good impact on the body of individuals. The most common obstacle experienced when undergoing a diet program was the lack of information about the number of body calories per day (36%), difficulty in managing meal schedules (27%), lack of information on food providers for diet (14%), no delivery order service (14%) and financial problems (9%) [5]. Based on the data that has been described previously, an e-commerce design is needed to overcome these problems. The design of e-commerce features that are made must be able to provide solutions to the

problems experienced by dieters, and the customer discovery method can be used to find the right business model.

The 2019 DKI Jakarta Health Office data collection from 1.3 million respondents in Jakarta showed that 35% of people were obese and 49% had central obesity [6]. Obesity can occur due to an imbalance of calories that enter the body and calories expended by the body. Obesity is also an entry point for non-communicable diseases such as heart disease, stroke, diabetes and cancer. One way to reduce obesity rates can also be done with a balanced diet. In order for the diet to be successful, an application design is needed to solve consumer problems while on a diet. The customer discovery stage in the customer development method can be used to help analyze dietary problems in consumers, so that it can be used as a solution in the form of an application to overcome problems and meet consumer needs while on a diet. This study aims to 1) identify the problems experienced by consumers when going on a diet; 2) designing a diet application prototype that can be a solution to consumer problems when doing a diet; 3) develop the right diet application business model to solve problems when doing a diet.

2 Materials and Method

The study was conducted in the Jakarta area from March 2021 to June 2021 with the consideration that based on research conducted by iPrice Indonesia on 2,000,000 iPrice users, 42% of them stated that Jakarta was the most active city for online shopping in Indonesia [7]. This shows that Jakarta is a potential area to find research respondents because the application to be designed is an application that sells diet products online. This study uses primary and secondary data. Primary data was obtained through questionnaires while secondary data was obtained through literature study.

Determination of the sample or respondents in this study was carried out using a non-probability sampling technique (non-random/deliberate sampling) through a purposive sampling approach. The test was conducted on 30 respondents. The initial stage in customer discovery is to design a business model canvas (BMC 0) based on the results of brainstorming from the literature study. The business model canvas is divided into nine elements, namely customer segments, value propositions, channels, customer relationships, key resources, key partnerships, key activities, cost structure and revenue streams. The results of the design of BMC 0 are used for the problem testing phase.

The second stage is problem testing which aims to find out consumer problems or consumer constraints. In the problem test, questionnaires will be distributed to 30 respondents who are currently or have been on a diet. The technique used is purposive sampling because there are predetermined criteria and adapted to research needs. The results of the problem test contain consumer constraints when going on a diet, which is used to repair the previous business model canvas (BMC 0) to BMC 1. After designing BMC 1, a Neediary prototype design is carried out which contains features to provide solutions to consumer problems.

The third stage is to test the solution by providing a prototype of the Neediary application to be tested on potential respondents to find out whether the solution provided can solve consumer problems. The results from the solution test are used to update the previous business model canvas (BMC 1) into a new business model canvas (BMC 2).

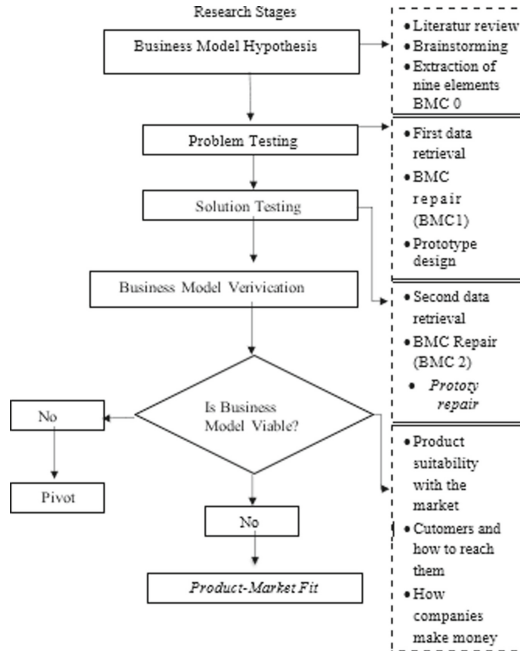


Fig. 3. Conceptual Framework

The last stage of customer discovery is verification of the business model. This stage aims to see the suitability and feasibility of the business model created based on three aspects, namely, the suitability of the product to the market, the size of the market and how to reach customers and how the company can make money. If this business model is feasible and verified, it can be tested in the market and continue to the customer validation stage, but if the business model is not feasible, a pivot or re-iteration must be carried out. The conceptual framework can be seen in Fig. 3.

3 Results and Discussion

3.1 Problem Identification

Market Size Hypothesis

The market size consists of total addressable market (TAM), serve available market (SAM) and target market (TM). TAM is the overall market potential that has the opportunity to become consumers of the products or services offered. TAM in the Neediary is the number of adult population (over 18 years) in Indonesia who are overweight and obese of 94,840,200 people. Service Available Market (SAM) is a potential market that has a tendency to use the products offered. The adult population (over 18 years) in Indonesia who are internet users who are overweight and obese is 69,897,277 people. The target market (TM) is the market share that is the user of the company’s products.

The TM in the Neediary, namely the adult population (over 18 years) who are overweight and obese who use the internet in Jakarta, then the TM obtained is 33,550,669 people.

Business Model Hypothesis Design

The business model canvas (BMC 0) has the following elements:

1. Customer Segments

The customer segment is dieters who care about health, aged 18–35 years who live in the Jakarta area and are internet users.

2. Value propositions

The Neediary platform has several Value propositions offered to consumers. First, it provides information about the calories needed when undergoing a diet program so that consumers get the ideal body weight. The second connects consumer dieters with verified online diet trainers. The purpose of being verified is to have an RD (Registered Dietitian) degree and have a nutritionist practice license (SIPTGz). The third provides a weekly diet food plan package in the form of a diet menu menu as well as recipes and video tutorials, a list of product needs that must be purchased and exercise recommendations for dieting. Fourth, help find the closest diet caterer to the consumer area. Fifth, find a diet community to discuss and support fellow dieters. Sixth, providing a diet journal in the form of a calorie record for consumers so that they can find out the number of calories from the food eaten and know the number of calories burned when doing sports.

3. Channels

Channels used to deliver products to consumers are through online channels, namely through applications, websites, and social media.

4. Customer relationship

The customer relationships are providing activation discounts, membership levels, updating the food menu design or adding partners, customer service and providing assessment and review columns.

5. Revenue stream

Revenue stream is obtained from product sales, product sales commissions and advertising.

6. Key activities

Key activities on the Needietary platform are platform development, producing diet menu plans, producing sports videos, finding partners, managing social media and conducting marketing activities.

7. Key resources

Key resources are resources needed to run the company. The resources of the Needietary platform consist of human resources, intellectual resources, financial resources and physical resources.

8. Key partnership

The key partnership hypotheses in the Needietary platform are payment gateways, nutritionists, government agencies, suppliers, playstore and appstore.

9. Cost structure

The cost structure hypothesis on the Needietary platform is employee salaries, marketing, platform management, research and development (R&D), diet food recipe production costs and sports video production costs.

Problem Testing

Problem testing was carried out by distributing questionnaires to 30 respondents aged 18–35 years, domiciled in Jakarta who had/is currently undergoing a diet program. The results of the problem testing data obtained are as follows:

1. Respondents' opinion about the importance of knowing a healthy diet. As many as 30 respondents or 100% said that it is important to know a healthy diet. The reason it is important to know a healthy diet is that the body is healthier and does not have a negative effect on the body (90%).
2. Respondents experience problems when undergoing a diet program

BMC Update Phase 1

Respondents have obstacles when using e-commerce platforms, namely: limited products in one store, less responsiveness of producers, doubting the quality of products and goods that do not match the photos. Respondents' opinion regarding interest in using applications/websites, based on the results of distributing questionnaires, 29 out of 30 respondents prefer to use applications compared to websites. In addition, as many as 30 respondents stated that they are interested in shopping if there is an e-commerce platform that specifically provides various needs or diet training.

BMC Update Phase 2

After testing the problem, there are changes in the business elements, namely the customer segment and the Value Proposition.

1. **Customer Segment:** Changes are made by adding the characteristics of the customer segment. The added characteristic is that consumers cook their own diet menus.
2. **Value proposition:** The changes made are by eliminating the value proposition to find the nearest dietitian and adding a value proposition in the form of an application that makes it easier to find diet products. This is based on the problem of consumers who have to go to various stores to find the diet product they are looking for.

3.2 Prototype Design

Neediary is equipped with several features to help dieters while undergoing a diet program, namely a short questionnaire, community features, subscription features, shop features, notes features and profile features.

Short Questionnaire

A short questionnaire contains questions for users to help find the calorie size and type of diet that is suitable for the user. Measurement of nutritional adequacy rates based on gender, age, height, weight and activity. Determination of the approximate type of diet that is suitable is done based on the user's allergies or dislikes to a food.

Community Features

The community feature is a place where consumers can meet other users who are also running a diet program, in this feature users can share their experiences while undergoing the diet process or ask other users' opinions regarding their perceived dietary concerns.

Subscription Feature

There are two types of subscription features found in the Dietary application, the first is a subscription to a diet menu plan. This feature helps provide inspiration about the food menu that will be cooked while on a diet within one week with measured calories. The second subscription feature is a subscription to a consultation with a nutritionist/diet trainer. Users can consult online with a diet trainer by phone or chat on the application every day within 15 days or 30 days.

Store Feature

The feature shop sells various diet products such as snacks, drinks, spices or raw materials. This feature aims to make it easier for users to find food ingredients for dietary needs in one application.

Note Feature

The note feature serves to help record the food eaten and the exercise the user does, so that the user can find out the calories eaten and burned in one day.

Profile Feature

In the profile feature there are several functions such as completing self-identity, monitoring transactions that have been made, providing reviews, and making complaints to customer service if there are problems when using the application.

3.3 Solution Testing

Solution testing was carried out on 30 potential respondents who were found in problem testing on value proposition, channels and customer relationship.

3.4 Business Model Verification

Product Suitability with Market

There are three indicators to analyze the suitability of the products offered with the existing market needs, namely:

1. The problem or need in question is important to solve. Based on the results of the problem test, the problem to be solved adapted to the problems experienced by respondents. Some of these problems have not been resolved by the existing platforms, therefore the Needietary application comes with more complete features than the previous platform by providing the latest features or products such as diet food raw materials or online consultations with diet trainers.
2. The products offered have features that can solve problems. At the problem testing stage, problems experienced by consumers who are on a diet are found, then in the solution test the researchers provide solutions that are tested by potential respondents. The percentage of solution test results shows a number of 93.33% until 100% of the solutions are accepted by respondents.
3. There is a market size that can provide benefits for the company. The number of users for web/mobile is estimated using the 30/10/10 law with details of 30% of the target market downloading, as much as 10% of those downloading and try and, 10% of who try and use it every day [8].

The number of TM is 33,550,669 people, so as many as 100,652 will become active users of Needietary per day.

Customers and How to Reach Them

Needietary customers are dieters in the Jakarta area aged 18 -35 years who care about health, consumers who cook their own diet menus, and actively use the internet. Based on these characteristics Needietary designs appropriate customer relationships to reach customers. The Needietary customer relationship that has been verified in the solution test is to provide activation discounts, membership levels, renewal of diet food menu plans and additional partners, customer service, ratings and reviews, and digital marketing.

How Companies Makes Money

There are three ways Needietary makes money, namely product sales, commissions for each sale and advertising. The products sold on the Needietary application are the purchase of daily diet food raw material packages and subscriptions to the diet meal plan plan. Based on the results of the solution test, consumers are willing to pay 50,000 for the purchase of a daily diet food ingredient package and a subscription to a diet menu plan. Commission for each product sale is the percentage that Needietary will

get from diet product partners who want to sell their products on dietary applications or nutritionists/diet trainers who want to provide consulting services on Neediary applications. The final income is obtained through advertising, if partners want to install their products in strategic locations on the application.

4 Conclusion and Recommendation

4.1 Conclusion

Problems that consumers experience when undergoing a diet program include difficulty determining diet menus, bored with diet food menus, not knowing the calories needed when dieting, needing friends or support while on a diet, visiting various stores to find the diet product they are looking for, not know the calories needed when dieting, do not have the ability to determine the type of diet that is suitable, and have difficulty finding a nutritionist/diet trainer. In addition, consumers also have obstacles when using e-commerce platforms, namely the limitations of products in one store, the lack of responsiveness of producers, doubting the quality of products and goods that do not match the photos.

The Neediary application provides solutions for consumers through the features and products offered, including the subscription menu plan, diet food raw material packages, notes feature, community feature, shop feature, short questionnaire, dietitian/trainer subscription feature, features reviews and ratings. This application also has customer service available during 24 h to help consumers who have problems running the application. Based on the test results, the feature and product solutions offered in the Dietary application have become an accepted solution in solving the problems experienced by respondents.

The last stage in customer discovery is the verification of the business model to see the suitability and feasibility of the created business model. Based on the business model verification of the Neediary application, this application has been verified based on the results of three aspects of verification, namely the suitability of the product to the market, the size of the market and how to reach customers, and how the company makes money. Therefore, researchers say that Neediary has achieved product-market fit.

4.2 Recommendation

This study uses the customer discovery method which is the first stage of customer development which focuses on testing the business model hypothesis on the customer segment block, value proposition, channel, customer relationship and revenue stream. Suggestions that can be given are that in order to create a more valid business model, further research can carry out the stages in the key resources block, key partners, key activities, and cost structures. In addition, this research is still in the form of an application prototype, so it is recommended that further research can be realized in the form of a real application so that customers can feel the benefits. Further research can also carry out the customer validation stage to build a sales roadmap.

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