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**NEW PRODUCT DEVELOPMENT**

**“SMART VENDING MACHINE”**

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## 1.0 EXECUTIVE SUMMARY

We choose to produce this machine because we want to upgrade the common vending machine into new Smart Vending Machine. This machine combines vending machines and ovens. In just 2 to 3 minutes, consumers can get the frozen food they want, and can be eaten. This can give more advantages to frozen food company and their customers. The team got the idea to produce this machine based on the case study that have been done at one of the frozen food company. They are facing problem on ordering system is not efficient. When the costumer want to order the food, the company have the problem to give response within the promise time.

## 2.0 INTRODUCTION

The problem statement of this study is to analyses the problem associated with the delivery matters of the frozen product by House of Frozen Company. The main problem of this company are the ordering system is not efficient. When the costumer want to order the food, the company have the problem to give response within the promise time.

The method that the team use to collect data is interview method. Owner of House of Frozen company was being interviewed on 25/3/2018 in Seri Iskandar, Perak. However, the team only managed to get data for only one company. The limitation is the team do not get enough data from more frozen's food companies. So, the team are unable to capture the real problem that have been face by them. The team need longer time to collect data.

## 3.0 TECHNOLOGY DESCRIPTION

This product is the technology modification of common vending machine. It combines the vending machine and microvave. It upgrades the payment method, which it can be done by online debit, *touch and go*, and notes cash. The order system equipped with touch screen. The machine use electric and batteries so if the electricity supply is disconnected, there are batteries that can be used as backup.

## 4.0 NEW PRODUCT DEVELOPMENT

### 4.1 Definition

The team plans to upgrade the common vending machine into new Smart Vending Machine. This machine equipped with a microwave so that, the frozen food can be cooked there. It combines vending machines and ovens. In just 2 to 3 minutes, customers can get the frozen food they want, and can be eaten.

## 4.2 Classification of NPD

The product is improvement from the existing vending machine in the current market. It is a new products to replace existing products with functional enhancements such as the payment method. It is targeted to different market segments which is from snack and softdrink industries to frozen food industries. This product is more to do with consumer perception rather than technical development. The demand will be last within another decade as this machine can be used for all company that want their customer easily get their product they provide.

## 4.3 New Product Development Process

### 4.3.1 Research & Development

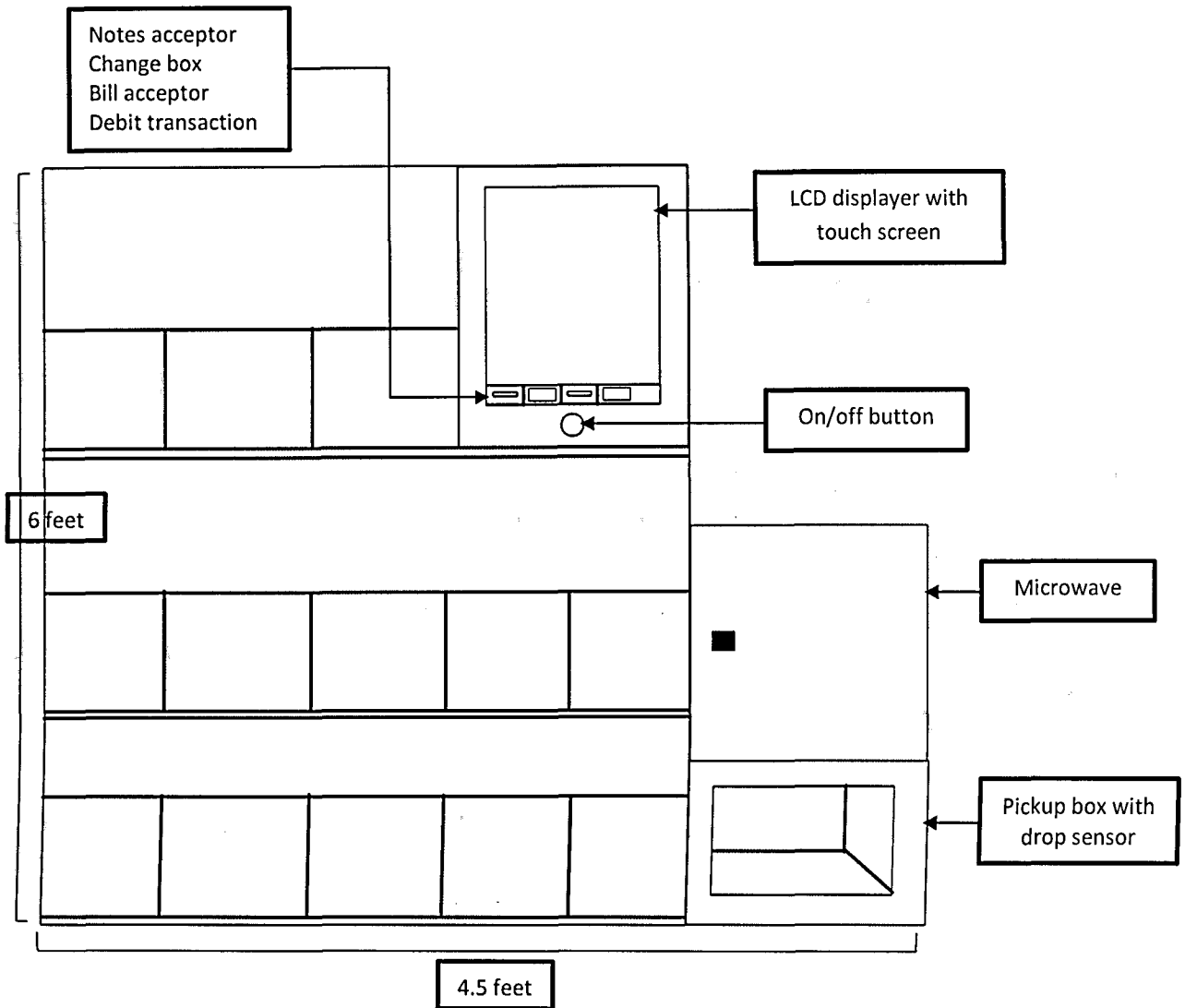
Idea generated by the case study that has been done on House of Frozen Enterprise. This company faces problem on delivering their frozen products within the promised time.

The team considered three different devices models with the same functions, which is to deliver the food product directly to the customers. The three ideas are:

- a. Delivery food truck
- b. A smart delivery machine, so the customer can get food product by self-service.
- c. Mobile application that can be used by smartphone.

After some discussion with team members, the team had decided on the second idea which is smart <sup>vending</sup> ~~delivery~~ machine. This device model is more convenient to handle without worry about internet connection. This will be useful and convenient product especially for the frozen food producer as they do not have to market their product in the supermarket. People can buy frozen food using this machine, and they do not have to worry if the store is closed.

### 4.3.2 Product Design/Features



### 4.3.3 Concept Testing

The verbal description was used to find out whether this device is convenient for frozen food producer. A survey conducted among 10 classmates. The question asked was, 'If they are frozen food producer, are they willing to purchase this machine?' and 'If this product is available in the market, are they willing to use it?'. 7 out of 10 willing to use this machine if there are available in the market, as they become easy to order and can get the food directly from the machine because the operation hour is 24 hours. About 6 out of 10 agree to purchase this machine (if they are the frozen food producer) as they do not have to worry that their food product were not marketed in any stores.