Term Project :

Automatic dog feeder by using smartphone

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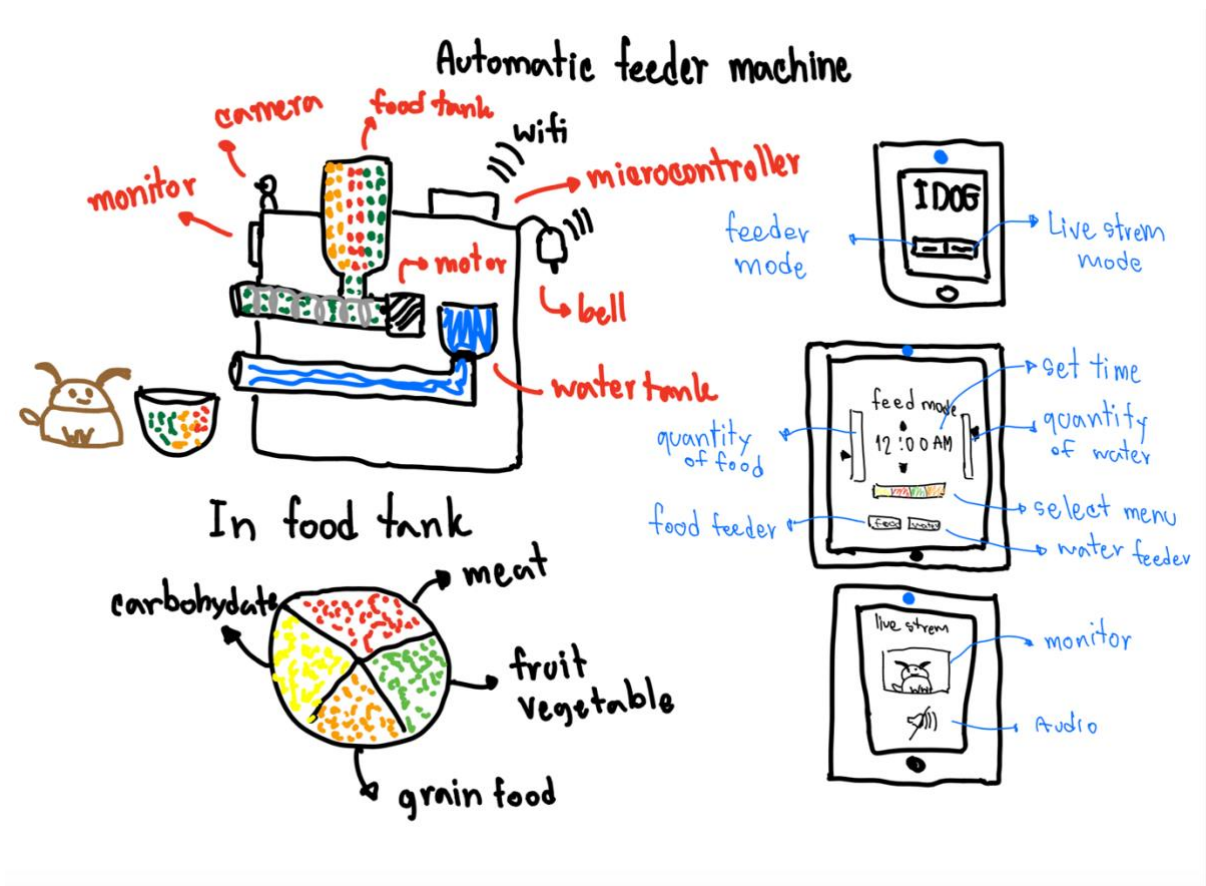King Mongkut's University of Technology Thonburi

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Automatic dog feeder by using smartphone

Problem analysis

Nowadays, people who have a dog face with feeding dog problem which is the main obstacle to raising dogs. Dog lovers, officers, students that love their dog and want to solve this problem because they can't feed and take care of their dogs, when they go away from home for some reason such as working, learning, etc. From the above problem, I will invent an automatic dog feeder by using a smartphone to control feeding This machine can solve the problem of dog feeding which is beneficial to people who raise the dog. They can go away from home to do some activity that they want without having to worry about feeding their dog. When they use this machine, they can feed their dog everywhere that smartphones can use the Internet to connect machines in their house. In another problem, they miss their dog ant and want to see their dog when they aren't home. My dog feeder has a live steam feature to solve this problem, so they can see their dog from live steam. Not only people miss dogs, but dogs also miss their owners. The dogs can see their owners by the camera that streams in this machine. Also, my machine is suitable for people who are lazy to prepare food for dogs in every dog because this machine can feed the dogs automatically.

An automatic dog feeder is an invention that helps people who raise dogs for feeding. For example, Officer must go away from home to work in the office and he has a dog at home. He experienced a problem with feeding dogs during the day because he was at the office and worry about the dog's existence. When he uses my machine that I invent which helps him to feed his dog by he just uses his smartphone connect with the machine that is a house and then clicks the feed button to feed his dog. He can feed and see his dog that is at home everywhere and every time. If he doesn't use my machine, he will not be able to feed the dog when he is at work and the problem is the dog will not have food to eat, which is a problem that can't be solved in today of people who has dogs and if his dog is sick, he will not be able to take care his dog, but if he uses this machine, he can use a camera that installs in this machine to live stream with his dog for watching his dog while he is at the office. Automatic dog feeder also helps people who are lazy to prepare food for dogs because this machine has a tank for storing food, he just put the food into the tank, which the tank can contain dog food for one week. He will not waste time preparing food for dogs every day.

Detail of your product & Benefit to customers

In my product has 3 main features. First, this machine can ring a bell to call their dog for feeding or live stream, but people who are raising dogs must train the dog to listen to the bell first so the dogs know that now that it is time to feed or want to live stream. When they want to use this feature to call their dogs, they have to use the smartphone to connect the microcontroller that has wifi module and then opens the application in smartphone to use this function by clicking the bell button that is in the figure above to call their dogs. Another benefit of this feature is they can train their dog to have discipline. Second, an automatic feeder is the main feature of this machine in which they can use this function by turning on the application in the smartphone and config quantity of food that feeds their dog and then clicks the food button. Even though they go away from home, they are also able to feed dogs by using a smartphone to connect with the machine via the Internet, so they can feed their dog everywhere that has the Internet. They can set time for feeding. For example, in the figure above, they set this machine to feeding at 12:00 am every day. Third, when they miss or worry about their dog that is a house, they can use live stream feature to see and listen to their dogs, and dogs also see and listen to them. This function will increase the closeness between them and dogs

when they are not together. This machine will install a camera and monitor for a live stream when they use this feature, they just open the application and click on live stream mode. There are many dog feeders in the market which working in feeding is very similar to my feeder, can feed dogs by using a smartphone. Then what is the reason they will choose my feeder, which the reason is my feeder has more functions when compared with feeder in the market such as live steam that people and dogs can see and listen together, ring bell function, and the area of the tank is divided into yards to store various types of food? In the part of the price of this feeder, I will sell it for 5000 baths because my feeder uses high-quality equipment, can be used for a maximum of 5 years, 1-year warranty, and has more modern technology than dog feeder in market. The cost of this machine is about 3000 baths which after the sale, I will get a profit of 2000 baths per unit. I will sell this machine at a pet shop and focus on online sales such as Lazada, Shopee, etc.

Step of using automatic dog feeder, the first step after they purchase my product, they have to put this feeder in their dog's place which this feeder uses the electricity as a supply, so they should choose an area that is easy to power and then they must config this machine to connect with their wifi and download IDOG application which application for controlling this machine by smartphone. They can download in the App Store for ios and Play store for android. Now, this feeder is ready to use. In the next step, they open the IDOG application that downloads in the previous step. in my application, it has two modes which are the feeding mode and live stream mode. Before they use these 2 modes, they have to know about the ring bell feature. This feature is in feeding and lives stream mode because this feature is important for calling their dog to feed and live stream. They can use the ring bell feature by click on the bell button in the application in which the order will be sent to the microcontroller via the Internet and Then the microcontroller will control the ringing of the bell. Before they use this feature, they must train dogs to listen to the bell. In the next step, after the ring bell to calling their dog to the front of the feeder. In feeding mode, it has 2 sub-function, first, they can set time to feed, and second, they can choose food to feed their dogs because, in the food tank, there are many nutrients that dogs should receive each day and this feeder has a water tank to feed water to dogs. When they want to feed, they will select food that appears in the application and then click on the food button to feed their dogs which they can control the quantity of food to feed by setting in application and click on the water button to feed water to their dogs. In another way, they can set time to feed, this machine will feed according to time that they specify. In the feeder working principle, after that click feed in the application, the microcontroller in this machine will control

the servo motor that connects spiral when the spiral turns, food in the pipe will be pushed onto the plate that prepared for the dogs to eat. In another feature, live stream, they can use it by selecting this mode in application. They and their dogs can see and listen together. If they don't want to listen, they can click the mute button to block sounds. In the principle of this feature, the microcontroller will control the camera and sound system ON/OFF by receive the order from the smartphone and send live video to their smartphone. I installed the monitor into this machine, so their dogs can see them because the dog also misses the owner.

The first benefit of using automatic dog feeders, this machine can solve the feeding problem of people who don't have time to search for feed their dogs or have to go away from the house to work, study, or some activities. When they use my feeder, they will be able to feed their dogs everywhere and every time. They just open the IDOG application and click the button to feed, after that their dog can eat food or drink water happily which very easy to use it. They don't worry about dogs being bored with food because the tank for storing food in this feeder has many foods that are essential for dogs. For people who are lazy to prepare to feed or don't have time to feed dogs, this feeder has a function for setting time to feeding. They can set time to feed their dog every day, this function is very useful for people who don't have time. Tank in this feeder can contain dog food for one week which suitable for people who are lazy to prepare food to feed in every day. The second benefit, they can see and listen to their dog every time because they miss their dogs or see when their dogs are sick. This machine has a live stream feature, they just download the application and use it to live stream with their dogs. Their dogs also see the owner via a monitor in this machine which this feature makes dogs not feel lonely because they fell owners are always close to them and the owners feel happy that they can look after their dogs closely. They also can train their dogs by using voice to communicate with dogs. The last benefit, this machine can help comfort and reduce costs in the long run for the dog business because on each day of the Dog café, there are a lot of dogs which staffs are responsible for looking after them. if the operators of this business use my machine, they will be able to reduce the cost of hiring staff to prepare food and feed dogs because this machine is automatically feeding dogs which will help the operation of this business become easier and more efficient.

Customer Analysis & Market Segments

1.Dog lover

Dog lover are the people who want to use this machine because this machine is made especially for dogs which suitable dog lovers who are single lifestyles, stay home alone with their dog, often go away the home, worried about feeing their dog, and also wanting to look after the dog closely all the time. they are currently interested in dog feeders that controlled via mobile phones and tools for dog care. In the age group, this machine suitable for people aged 20 years or over who have a job and making an income of about 25,000 baths per month. Most dogs that are appropriate for this machine are foreign dogs, must be placed in the low-temperature room, can't go outside because Thailand is very hot. For example, Siberian husky, Pomeranian, etc.

2.Officer

Officer who leave the dormitory to work every day, don't have time to look after their dogs. They are single, living in dormitories with dogs and like to pet dogs. When they go out to work, they have to let dogs in the room alone. They raise foreign dogs and dogs can't go outside. In the age group, this machine suitable for people aged 20 to 50 years who job and making an income of about 25,00 bath per month. They are interested in automatic dog feeders that able to feed when they aren't at home, looking for a camera to see dogs in the house.
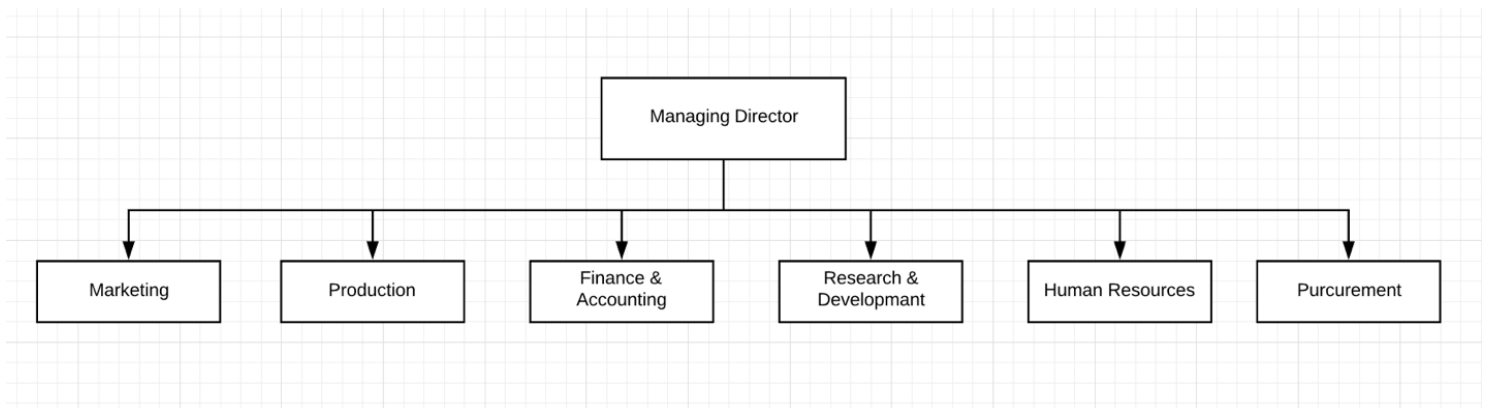
3. Dog Café

The coffee shop that raises a lot of foreign dogs and doesn't have much time to look after their dogs and feed dogs. There are a few staff in the shop. Their business has money to invest in purchasing my machine. They are interested in automatic dog feeders, cameras for looking after their dogs that controlled via smartphone, new technology, decorations to improve the shop, and also interested in reducing costs in hiring a dog sitter.

4. Dog Shop

Dog shop that sells various accessories for dogs and modern accessories for convenience. The shop owner is fond of new technology and interested in investing in buying automatic feeders, machines for looking after dogs via mobile phone, technology about live stream, and accessories for foreign dogs.

Organization Management

Business Functional Structure

and experiences are grouped, it makes production more efficient and of a higher quality. This streamlines communication and reduces confusion among employees. They can feel confident about what they are doing because It's standardized. A business function organizational structure provides a perfect environment for learning for new employees. At this time, my company only has one branch, so there is no need to use a Hybrid structure and Matrix structure because this structure is used when the organization produces more than one type of product.

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SWOT & Strategies

Strength	Weakness
S1. Live stream function S2. The machine can store many kinds of food. S3. Can control by using smartphone S4. Easy to use S5. Multifunction S6. Dog calling system S7. High quality product S8. Automatic S9. Sell on online shopping	W1. New Brand W2. Has only one product W3. Must connect with Internet W4. Lack of promotions W5. Suitable for foreign dogs W6. expansive
Opportunity	Threat
O1. 5G technology O2. IOT technology O3. Pet lover trend O4. Single trend O5. Increase demand of healthy dog food O6. Trend of playing TikTok app O7. Foreign dogs raising trend O8. Increase of dog café O9. Growing of mobile shopping	T1. Work from home T2. High competition T3. Dangers of hacking (using of camera on the Internet) T4. Bad economy T5. COVID-19 virus T6. High delivery cost

Strategies

1. (S7+O6) use strengths about high quality product to promote our product by TikTok application. TikTok is an app for making and sharing short videos which this app is extremely popular now because people like to watch shorter videos than longer videos. Our team will create short video to promote our product, how to use our feeder which we will contact who have dogs and hire them to promote our products with their dogs.

2. (S9+O9) create automation café campaign and discount 15% promotions for dog café that interested in buying this feeder, amount 3 or more by using the strength of automatics feeder to attract dog café entrepreneurs and explain the importance of automation system that will help them save money in hiring people to look after dogs and also make their café look modern and attractive.

3. (S8+O8) use the strength of selling on online shopping to create discount 5% promotion to increase product sales from people who buy through online shopping.

Work in process

LEVEL 1	LEVEL 2	LEVEL 3	M1				M2				M3				M4				Action By	Budget
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Automatic dogs feeder byusing smartphone	Strategy 1 promote on TikTok with celebrity's dogs	1.1 Discuss the terms agreement with celebrity and TikTok for promoting our product via TikTok	■																Marketing	200,000
		1.2 Create content for pomoting		■	■														Advertising, Marketing, Celebrity	50,000
		1.3. Create and edit our short video				■													Advertising,Celebrity	50,000
		1.4 Posts short celebrity's dog video for pormoting our product on TikTok app					■	■											Celebrity	N/A
	Strategy 2 automation café campaign	2.1 Create automation café campaign and discuss the detail of this campaign						■	■										Marketing, Design & Development	200,000
		2.2 Create a video to present this campaign on the internet, pet café community							■										Advertising	100,000
		2.3 Report details about campaigns and promotions for interested dog café & make an agreement with that café shop.								■									Marketing	100,000
		2.4 Perform automation café system installation								■	■								Customer service, Operation, Logistics	500,000
	Strategy 3 online marketimg	3.1 Discuss the terms agreement with Lazada, Shopee, and logistics partners about promoting our product.									■	■							Marketing, Lazada, Shopee	200,000
		3.2 Explore customer online shopping habits.											■						Marketing	N/A
		3.3 Create video and photography about our product for product descriptions on online shopping												■	■				Advertising, Product Design	100,000
		3.4 Launch it on LAZAD and Shoppee with a discount promotion														■	■		Marketing	N/A