NAME : Syed Muhammad Ahmed Zaidi
STUDENT ID: 20972008

ENGR6005 New Product Development
Assignment 1 Part 2
SECTION 1 : Summary of Product Innovation (100-150 words)

AIRGO

Air travelling has become an essential part of human transportation. However, there are still inconveniences every passenger faces during their layover period on Airports. These issues include pushing heavy luggage weights, queues around weighing machines, security of belongings, real-time information about flights and delays, and locating correct terminal gates. AIRGO will address each of these issues as this motor operated trolley introduces multiple innovations to traditional airport trolleys. With the intelligence powered by a microprocessor called Rasberry Pi, this machine will combine ultrasonic sensors, Pi Cameras and Push buttons to assist passengers in the movement of their luggage in any direction. It has a built-in load sensor that allows luggage weight measurements, saving passengers from long queues and helping them adjust weight according to flight requirements. The machine also has a GPS-fitted display screen to guide passengers towards their respective terminal gates while providing real-time information about flight and airport facilities.

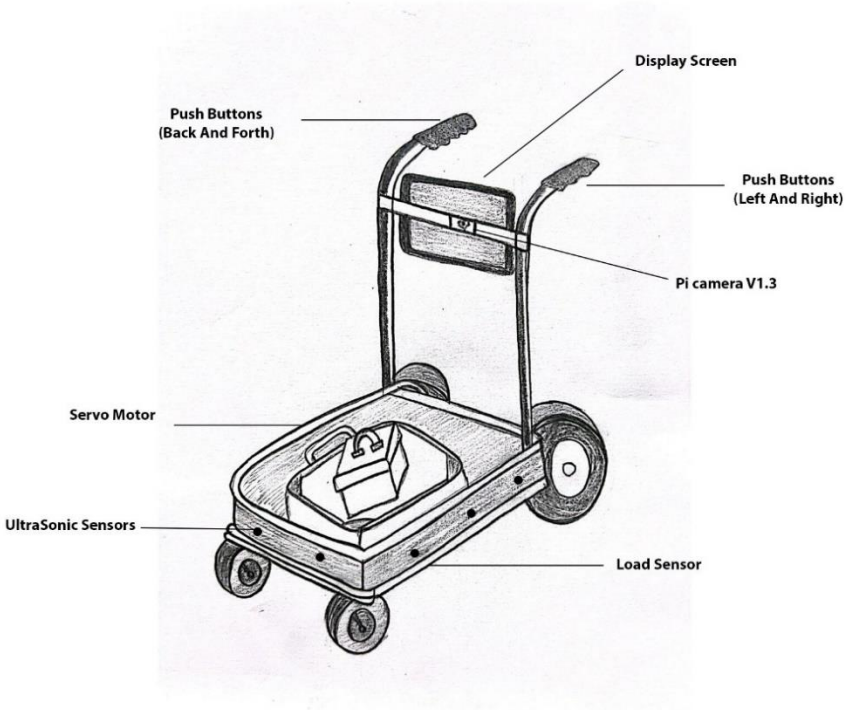

FIGURE 1 : Labeled Sketch of Exterior with Components

Lean Canvas DRAFT	Designed for:	Designed by:	Date:	Version:
	ENGR6005 1-2	Syed Muhammad Ahmed Zaid	12/04/2024	1

Problem	Solution	Unique Value Proposition	Unfair Advantage	Customer Segments
1. Pushing heavy weighted luggage within the airport 2. Waiting in long queues to weigh the luggage Or paying high excess fees due to being overweight according to flight requirements 3. Not having complete knowledge about the right terminal gates and flight status.	1) Motor operated trolleys to assist moving heavy weight luggage to reduce manual effort 2) Built-in Load sensors to measure weight anywhere 3) GPS Display Screens to guide towards the right terminals/gates and provide real-time information about flights.	A motor-powered trolley that uses push buttons to assist passengers at airports in moving heavy luggage. Also providing a guided route, using a screen display, towards their correct terminal gates based on real-time flight status.	- First Mover Advantage - Exclusive contracts with airports and airlines	**Target Customers:** - Government Aviation Departments - Public and Private Airports - Airlines **Target Users:** - Family travellers with multiple luggage bags - Frequent travellers - Business Travellers - Elderly and Disabled
Existing Alternatives	**Key Metrics**	**High-Level Concept**	**Channels**	**Early Adopters**
- Use of traditional Trolleys involving manual Push - Self Weighing machines or Boarding platforms - Airport Displays and Signage Boards	- Number of Sold units - Number of Airports incorporating the technology - Number of brand requests for advertising on screens - Ad impressions and engagement	- AIRGO = Automated Bellhop for Airports - Google Map's Live View for Airport interor	Trade Shows and conferences Professional Sales Team Online Presence (Website) Government Bodies and officials	**Customers:** - Technology forwarded airports competing to incorporate innovations to improve passenger experience **Users:** - Frequent travelers who can comfortably adopt digital interfaces eager to make travelling more convenient.

Cost Structure	Revenue Structure
- Cost of Production (Material, Wheels, Motor, Battery, Microprocessor, Pi Cameras, Display, Sensors etc.) - Distribution and Logistics (Warehouse storage, transportation to airports, Packaging) - Research and Development - Support and Maintenance (Repairs, warranty claims) - Salaries, Sales Commissions and Wages - Marketing and Advertising to Target Customers	- Direct Sales : Selling Trolleys in Bulk to Airports and Airlines. - Advertising Revenue: Shops/Restaurants/services can advertise their brand/promotions on Trolley Screens by paying for screen time. - Misc Services: Revenue from providing initial setup, maintenance, support and software integrations with the airport database.

Section 3 Customer Segments (350-400 words)

AIRGO is an innovative improvement to the traditional trolleys currently being used at the airports. This creative solution addresses majority of the basic difficulties passengers face during their layover periods. However, this being an industrial product, it cannot be directly targeted to the end users and hence, for its market segmentation, there is a clear distinction between its customers and users.

AIRGO would specifically be focusing on targeting large-scale institutions, which include government departments for aviation, airports and airlines. Such organizations, working in the same industry of aerospace, have a mutual goal to reduce stress, anxiety and complications faced by passengers by introducing novel enhancements to the entire journey by adding safety, convinience and engagement. AIRGO provides value by offering all these with its inventive functionalities of luggage locking, assisted movement and enticing displays. The early adopters in regards to customers would be the technology-forwarded airports that are competing to incorporate digital breakthroughs that would make the travelling experience smooth and pleasant.

The advanced capabilities being introduced by AIRGO are intended to be utilized by commuters who are categorized as 'end users'. From an aerial perspective, a broad range of travellers can gain advantage distinctively with the use of the proposed product. However, the targeted segment in regard to end users comprises of large families, having more than the average number of members. They hold a substantial cumulative luggage weight, which makes it very hard to traverse carrying multiple baggage. The feature of assisted movement can be a saviour in this context as it allows energy saving during prolonged layovers. This segment is also categorized as the extreme users as they will test the true potential of AIRGO, with its unique functionalities being employed differently by each member of the family. Another significant segment would be the business travellers who are frequent flyers and have high service expectations. AIRGO's built-in weight sensors will provide value by saving their considerable time at check-in counters. They are categorized as the lead users as they are efficiency-oriented and can use their tech-savvy backgrounds to provide valuable feedback for improvement. Another niche this product can be found highly valuable for would be the elderly and disabled. They face limitations with mobility due to stamina and digital understanding. AIRGO, with its user-friendly interface on digital screens with multiple language inputs can allow them to feel self-sufficient and independent.

Section 4 : Customer Research Interview (15-30 mins)

Date : 14/04/2024
Time : 11:30 AM
URL LINK: https://youtu.be/WhG7Bm9YqWM

Person Interviewed:
Name: Animesh Kapoor
Email: animeshkapoor94@gmail.com

Relevance to the Problem

Animesh Kapoor is a frequent traveller who commutes across cities and countries for multiple reasons. He has his family living in Sydney where he visits them every two to three months. His profession of Hotel Management requires him to travel to different cities within Australia for site visits, training programs and industry conferences. His hobby of seeking adventure and sightseeing makes him a travel enthusiast who loves exploring new places for leisure and fun. This is evident from his most recent travel to his home country, India and then to Bali with friends. Animesh falls under the category of a lead user as he is a tech-savvy individual who appreciates technology and can adopt innovations easily.

Brief Background, Experience, Profession

Animesh Kapoor is originally from India, he came to Australia as a student of Hospitality at Southern Cross University, Sydney. After completing his degree, he shifted to Perth and has pursued his career as a Hotel Manager, Hotlier and front desk manager for the last 8 years. Currently, Animesh is employed as a Duty Manager in Pan Pacific.

Section 5 : Customer Insights (250-300 words)

Interview with Animesh Kapoor has derived numerous insights into the proposed product as his vast experience of travelling was able to identify pivotal details that need to be considered before moving to the next stage of product development.

Animesh was able to provide a thorough list of the issues currently being faced by frequent travellers around the world with most of them overlapping with AIRGO's targeted problems. He mentioned some unnoticed alternative solutions currently being used in the market, which included driveable luggage bags and cheap self-weighing tools used in homes. Upon describing the innovative solutions proposed by AIRGO, he found the offering to be filled with potential and was excited to try it. He believed that there should be a pilot launch at technology forwarded airports followed by reviews from end users on social media so public feedback can be incorporated before the complete launch.

A common theme throughout the interview was the discussion about capital requirements and affiliated costs of starting a large-scale business like AIRGO. Animesh perceived this to be a hurdle but, at the same time, an unfair advantage with majority of backward airports/airlines not having enough capital or interior structure to integrate it into their offered facilities. In this regard, the interviewee was happy to pay an extra premium for the usage of the product as he finds the offered solutions to be of high worth allowing a substantial decrease in stress and anxiety.

Based on the conversation, the model of the business would remain the same; however, there can be additional solutions incorporated within the design for example, adding foot pedal to apply emergency breaks. Another discovery is related to a new customer segment which is international students, as the interviewee believes them to be a significant portion of travellers nowadays, speaking different languages and needing assistance with their first travel.

Lean Canvas FINAL

Designed for:	Designed by:	Date:	Version:
ENGR6005 1-2	Syed Muhammad Ahmed Zaid	17/04/2024	2

Problem

1. Pushing heavy weighted luggage within the airport
2. Waiting in long queues to weigh the luggage
   Or paying high excess fees due to being overweight according to flight requirements
3. Not having complete knowledge about the right terminal gates and flight status.

Solution

1) Motor operated trolleys to assist moving heavy weight luggage to reduce manual effort
2) Built-in Load sensors to measure weight anywhere
3) GPS Display Screens to guide towards the right terminals/gates and provide real-time information about flights.

Unique Value Proposition

A motor-powered trolley that uses push buttons to assist passengers at airports in moving heavy luggage. Also providing a guided route, using a screen display, towards their correct terminal gates based on real-time flight status.

Unfair Advantage

- First Mover Advantage
- Exclusive contracts with airports and airlines
- Switching Costs can be high for competitive brands

Customer Segments

Target Customers:
- Government Aviation Departments
- Public and Private Airports
- Airlines

Target Users:
- Family travellers with multiple luggage bags
- Frequent travellers
- Business Travellers
- Elderly and Disabled
- International Students

Existing Alternatives

- Driveable luggage bags
- Weighing tools at home
- Airport Displays and Signage Boards

Key Metrics

- Number of Sold units
- Number of Airports incorporating the technology
- Number of brand requests for advertising on screens
- Ad impressions and engagement
- Net Promoter Score from users

High-Level Concept

- AIRGO = Automated Bellhop for Airports
- Google Map's Live View for Airport interor

Channels

- Trade Shows and conferences
- Professional Sales Team
- Online Presence (Website and Social Media)
- Government Bodies and officials

Early Adopters

Customers:
- Technology forwarded airports competing to incorporate innovations to improve passenger experience

Users:
- Frequent travelers who can comfortably adopt digital interfaces eager to make travelling more convenient.

Cost Structure

- Cost of Production (Material, Wheels, Motor, Battery, Microprocessor, Pi Cameras, Display, Sensors etc.)
- Distribution and Logistics (Warehouse storage, transportation to airports, Packaging)
- Research and Development
- Support and Maintenance (Repairs, warranty claims, Software Updates)
- Salaries, Sales Commissions and Wages
- Marketing and Advertising to Target Customers (Aiports/Airlines)

Revenue Structure

- Direct Sales : Selling Trolleys in Bulk to Airports and Airlines.
- Advertising Revenue: Shops/Restaurants/services can advertise their brand/promotions on Trolley Screens by paying for screen time.
- Misc Services: Revenue from providing initial setup, maintenance, support and software integrations with the airport database.
- Subscription for Software Usage

REFERENCES