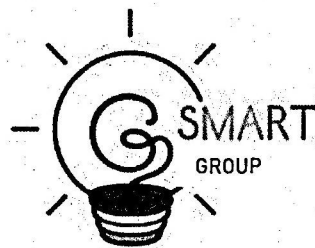




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UNIVERSITI
TEKNOLOGI
MARA

NEW PRODUCT DEVELOPMENT



PRODUCT: SMART WINDOW

SUBJECT: TECHNOLOGY ENTREPRENEURSHIP (ENT 600)

FACULTY: FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING (FSPU)

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1. EXECUTIVE SUMMARY

- The team are going to produce an innovative product called "Smart Window".
- Smart window can contribute to fulfil the requirement of public needs.
- Smart window can help the community and at the same can improve the mall services.
- From the prediction, the "Smart Window" are going to be provided in every shopping mall area especially supermarket.

2. INTRODUCTION

2.1 PROBLEM STATEMENT

- From our observation at Tesco Puncak Alam, we found that many disabled people not be able to shopping like others which they don't have ability to take many things in one time and it's hard for them to push the cart. Based on our observation the disable people cannot shopping like other people that they do not have ability to wait in a long queue, to grab many things by their hand and etc.
- We also found that in U.S. there are some research been done by observer about this matter. *12 Ways Businesses Can Better Serve People with Disabilities* by Tiffany Carlson, The Mobility Resources.

https://www.huffingtonpost.com/2013/08/20/business-disability-n_3785971.html

2.2 METHODOLOGY/DATA COLLECTION

- The above problem was observed hundred time by team member that mall is a big place, and have sell various choices.
- The team project is reflected in the support it offers at all stages of the project from a dedicated team, with precise needs analysis as well its ability to rapidly design better solutions.
- One of the team member noticed that walking in the mall for disable people can make them having a hard time.

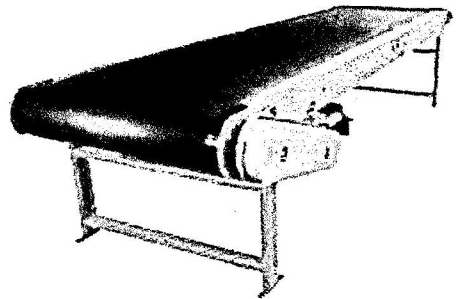
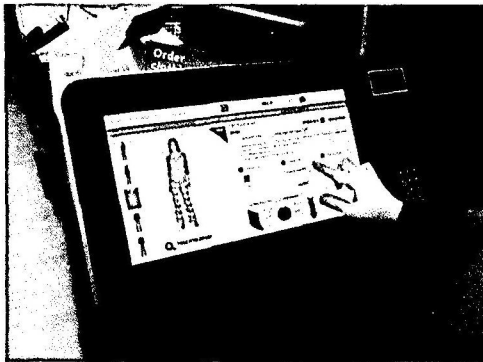
2.3 LIMITATIONS

- The limitation of the product includes an electronic window provides with application apply.
- The safety of the product and the usability of product.
- The electronic window suitable for any users especially for the disable one.

3. NEW PRODUCT DEVELOPMENT

3.1 DEFINITION

- The product of Smart Window main purpose is to help the disable one. By providing this technology at the mall, they can buy thing easily by using the Smart Window. We have been seen the disable people hard to reach the products that located higher at the shelf. This machine is a technology that could create an easier way for them to buy things from supermarket. It is a brilliant solution to overcome the above issues.
- The Smart Window is combination of apps such as online shopping on the tablet that attach to the smart window. They have to order by choose the product on the screen, and the order automatically sent to the staff and the product will be send by a belt conveyer.



The idea of ordering system to the Smart Window

3.2 CLASSIFICATION OF NPD

- Addition to existing line :
 - ✓ -Subsets to the new product line of Smart Window.
 - ✓ -Perhaps targeted to same market segments.

- Improvement and revision to existing product.
 - ✓ -New product to replace existing product with cosmetic and functional enhancement.

3.3 NEW PRODUCT DEVELOPMENT PROCESS

PROCESS	MATERIALS	MACHINES/ EQUIPMENTS	MAN
1. DESIGNING PHASE Idea sketches, Mechanical drawing by hand, inserting the technologies. Making the vision concrete, and then fine tuning the drawings to fit the various components together CAD system.	Traditional stationaries - Fill tip pen, mechanical pen, paper CAD system	Computers	Operation officer and Part time – Computer Engineer
2. MAKING MODEL Come out with design model that complement all the technological specification involved.	Raw Plastics mold	3D plastic mold machine / printer	External engineer
3. SEARCHING FOR RAW MATERIAL Ordering of raw materials.	Electronic components –Attach tablet, gears, steel, roller,		Chief finance officer.
4. MANUFACTURING Assembly of such processor must be performed carefully and methodically, the most essential aspects of the manufacturing process are in the assembly of the electronic components.	Electric components – circuit board and cables	Surface Mount Technology (SMT) machine	Hired Computer Engineer, Operation officer and technicians.
5. FINALISING PROTOTYPE After all components were put together in one piece is completed. A few tests is done such as comfortability test, strength test, soaking test, and system test.	Smart Window prototype	Computerized Universal Testing Machine (UTM), system monitor	Operating and marketing officer and volunteers (comfort test)