



HILLSIDE TRAM

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INTRODUCTION

The New Product Development (NPD) consists of the activities carried out by firms or entrepreneurs when developing and launching new products. For our group's new product development, we are developing the hillside tram, an inclined elevator can go up tilted grades.

1. Problem Statement

- Difficulty to transport item or people up an incline hill
- People with disability have issue to use the staircase with their wheelchair
- The time to climb the hill or the tilted surface is quite long and tiring when using the stairs

2. Methodology

- The survey method is being used to develop the hillside tram.
- We ask people who their house and facilities that located on top of the hill and near to the river bank at Sungai Pahang.
- Pusat Perhilitan UiTM is one of the respondent who need this kind of technology to be install at their facilities, Kuala Keniam, Pahang.

3. Limitation

- Existing product (escalator conveyer belt) cannot be install outdoor due to durability of the product
- Escalator conveyer belt cannot withstand the weather change in Malaysia.
- The existing product have high maintenance. At least 2 times per month.
- The escalator give disadvantage for handicap. For example, people in wheelchair.

NEW PRODUCT DEVELOPMENT

1. Definition

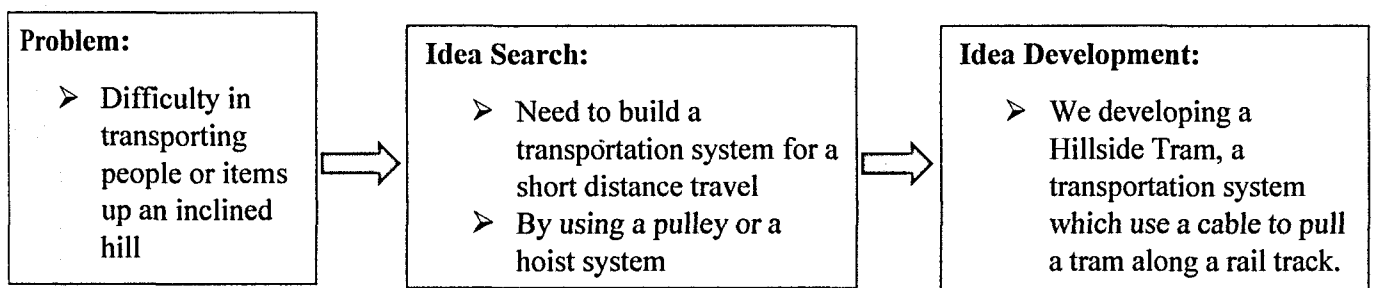
- The team is developing a hillside tram also known as an incline platform lift or incline elevator.
- The hillside tram is like an elevator that runs in a direction diagonal to the ground.
- But unlike standard elevator, inclined elevator can go up tilted grades.
- A hillside tram is a type of cable railway in which a cable is attached to a tram-like trolley on rails or tracks to move them up and down a steep slope.

2. Classification of NPD

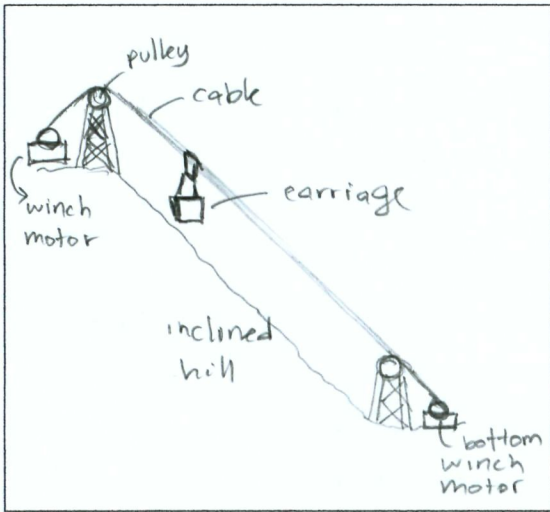
- A hillside tram is already existed in this world with a different function of usage.
- The team choose this existing product is to improvise and revision.
- This product really need to improvised because of the designing of the product must be compatible with environment surfaces, improved safety performance, life span of the product and generated with some new features.
- Hence, the team need to do the revision of the product to achieved the future marketing target.

3. New Product Development Process

I. Research and Development:

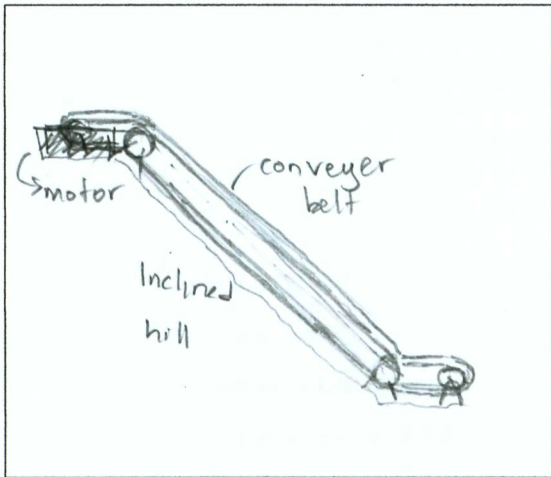


a. Idea Generation:



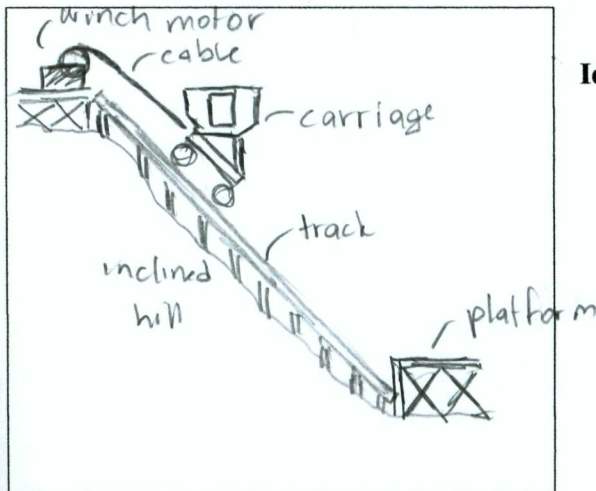
Idea 1:

- We used a cable and hang a carriage to the cable to transport an items or goods or people.
- Use two winch motor, one placed on top of the hill for moving the carriage up the hill, while the other motor is placed at the foot of the hill for moving the carriage down.



Idea 2:

- We use a conveyer system to transport the items.
- Use an electric motor to move the conveyer to transport the item up or down the hill.



Idea 3:

- We use a cable to pull the tram or carriage along a rail track.
- Use a winch motor to pull the tram up the hill, and release the cable to move the tram down the hill.