

PRODUCT DESIGN OF CHILI CUTTER

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ABSTRACT

Purpose – The purpose of this paper is to design a product that serves as a tool for production using the product development process.

Design/methodology/approach – Following a literature review, the paper presents the results of concept screening and scoring. It then then discuss the selection of concepts to be used as a reference for the next stage in the product development process.

Findings – A concept development process would reduce cost and shorten the product design process.

Originality/value – This paper provides recommendations on how quality by design of chili cutter could potentially streamline the new product development process.

Key words: Product design, Product development, Concept development, Chili cutter

1. INTRODUCTION

A product concept is a general description of the technology, the principles of the workings, and shape (form) of the product. The concept of the product is a clear picture of how the product will meet the needs of customers. A product concept is usually depicted with a sketch or three-dimensional models and equipped with clear text descriptions. Good product concept is sometimes implemented is not good, but very rarely a good concept can not support the commercial success of the product. A structured approach to bring the concept of the product were able to reduce the problems that arise in this process to encourage the collection of information from various sources of information, leading product development team to a comprehensive exploration of alternatives, and provides a mechanism for integrating partial solutions.

The process of Concept Generation begins by determining the needs of the customer, the target specifications and produces a product concept that will be used as a final option.

2. THEORETICAL BACKGROUND

Product is a production output, both tangible and intangible that can be offered to the market to satisfy the needs of the buyer. (Kotler, P., Armstrong, G., Brown, L., and Adam, S. (2006). Meanwhile, according to Karl T. Ulrich and Steven D. Eppinger product development is a series of activities starting from the analysis of perception and market opportunities , then topped with a stage production, sale and delivery of the product. the product development process generally consists of the stages or often referred to as a phase. According to Karl T. Ulrich and Steven D. Eppinger in his book entitled "Product Design and Development", the overall product development process consists of six phases, namely:

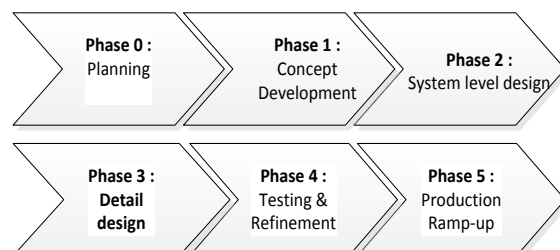














Figure 1. Product Development Phase (Ulrich-Eppinger)
 (Source : Ulrich-Eppinger, 2012)

3. RESEARCH METHOD

Table 1. Morphological Chart

Option / Function	Concept 1	Concept 2	Concept 3	Concept 4
wadah melekatkan untuk cabai				
alat pengupas cabai				
alat penghubung parting dengan wadah cabai				

Morphological chart is used to assist in determining the concept that we choose.

4. RESULT AND DISCUSSION

a. Concept 1

- A description and analysis of product architecture

In the first draft, our group using containers made of plastic, using scissors fruit and use a liaison between the scissors and container in the form of wire. Containers made of plastic chosen because it has a light mass so heavy chili will not significantly influence the masses chili. Because we want the chili can be accommodated with a maximum weight of 250 grams. While scissors are selected using scissors fruit because of the way his work resembles the workings of cutting chili. For liaison between the container and cut using wire because it has good resistance compared to other types of tools that are used as the link container and scissors.

- A description of the mechanism of action.

How it works in this first concept is the chili that will be harvested fruit will be cut using scissors. Then chili been cut will be distributed directly to a container made of plastic. This plastic container in sangkutkan by using wire. So if chili has been accommodated with a maximum weight of 250 grams, the plastic can be removed from the wire. And automatically directly knowable chili maximum weight that can be accommodated.

b. Concept 2

- A description and analysis of product architecture

We use the concept of a sack-shaped container as the use of the container if used in a state of drizzling rain, the water does not come accommodated within the container where it will make a difference in the weight of chili, sacks which used a thin sack also contained small holes so that water will quickly fell to the ground and the absorption of water falling into the container does not make container gain weight. Scissors are used has a different blade of the scissors is usually due to simplify picking cabainya chilli jam there in between the leaves. For liaison between the container and cut using wire because it has good resistance compared to other types of tools that are used as the link container and scissors.

- A description of the mechanism of action.

The performance of this concept is quite easy first learned to use scissors chili peppers that have been cut out and then fell into the container without having to use the hands, the container has been measured so if chili peppers filled the whole weight reach a specified weight, then after a full container, cabai- the chili in taro into larger containers for sorting, container function is to assist the movement of Patani minimize repetitive hand in picking by hand, so fast pentani not tired at work.

c. Concept 3

- A description and analysis of product architecture

On our third draft pick shaped container with fabric because the fabric will be more flexible if you want to cut the peppers that were somewhat into the plant then the container can follow scissors to achieve that resides in chili peppers plants, while the scissors are used has a blade that tapers so that it can enter into the sidelines of chili leaves, while the link between the scissors and the container is yarn fabric, because it is more accessible and can be firmly sewn in the container and anchored in a pair of scissors. And the thread is more flexible so as to fit into the gaps between plants can be

flexible and not rigid like to follow the shape of the wire.

- A description of the mechanism of action. Performance is the same concept as before, chili that would scissors directly into the container, only the advantages of this concept will be easier to reach inside the chili plants for containers and pengubung thread can enter the sidelines of the plants more easily because of its flexibility form and flexibility thread.

d. Concept 4

- A description and analysis of product architecture

In the fourth concept we chose a container of chili for this Chitter with shaped plastic container because the plastic material will be more flexible if you want to cut the peppers that were somewhat into the plant then the container can follow scissors to achieve that resides in chili peppers plants, as well as plastic containers is also when exposed to moist air will not like the fabric, while the scissors used to have smaller blades so they can get into the sidelines of chili leaves, whereas for liaison between the scissors and the container is the kite string, because it is easy to obtain and can be easily associated with the container plastic and scissors. And the thread is more flexible so as to fit into the gaps between plants can be flexible and follow the shape of the pepper plant, not rigid and not easily rust like wire.

- A description of the mechanism of action.

Performance for the fourth concept is the same as the previous concept, chili and will cut directly into the container of chili, there are only advantages of this concept is in picking chili peppers will be easier to reach inside the sidelines of pepper plants for containers in the form of plastic flexible and

kite string that is used as a container and scissors pengubung can enter the sidelines of pepper plants will be easier because the shape of the container and the kite string bending.

5. CONCLUSION

This tool is designed to make it easier for farmers to harvest chili. During this time he harvests the traditional way in which they use the manual method. The concept will further be develop to detail design.

6. REFERENCES

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