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## Business Opportunity of Chips Small Group Industry in order to Increase Family Income

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**Abstract.** The science and technology for community (IbM) aimed to: (1) Increase production capacity through appropriate technology innovation; (2) Transfer knowledge of little industry partners on the ingredient material processing and chips' product variation in various flavors; (3) Supervise and guide in making attractive packaging to extend marketing network; (4) Help in realizing chips little industry partners' products listed on the Health Department of to get P-IRT number. The implementation of activities applied in IbM through several stages covered approach method, supervising, training/counseling, guiding and realizing problem solving in chips small group industry. The applications of appropriate technology to realize small-scale industry equipment facilities were by providing chopper and grated cassava engine and other support facilities in order to improve efficiency and production capacity, product processing training about various flavors, guiding in designing packaging and registering P-IRT so that the chips' product could be sold in shops and supermarkets.

The implementation of IbM for chips small group industry showed that: (1) There was increasing time efficiency and production capacity. The appropriate innovation technology on small-scale industry applied in the form of chopper/grated cassava engines, and its complementary facility could help to save production process time to increase production capacity; (2) There was technology transfer of making chips with varied flavors so that partners could make their own varied flavors; (3) There was improved packaging, which was still in design stages; and (4) There was registering process of P-IRT number. The indicator of success which could be achieved from the activities implemented was there was an increase in production by the presence of appropriate technology innovation such as chopper and grated engine for the ingredients. In the past the Partner I took 3-4 hours to scrape 25 kg of cassava, now it needs just 1-2 hours to resolve. Similarly, the Partner 2 in the past for chopping 1 quintal cassava manually needed four hours with six working persons, at present with the help of chopper machine, it can produce three quintals of cassava per day done by one person only. The fixing appearance of packaging was done by guiding in designing packaging with varied sizes made of plastic with sticker label containing information in accordance with the regulation of Household Food Industry so that the products could be sold with more secure, hygienic, and attractive in the markets. The varieties of products with various flavors other than salty chips are by adding sweet, spicy, onion, and barbeque, which are preferred by the society.

Keywords: *business opportunity, little industry, chips*

### 1. Introduction

In the framework to increase the poor family in continuous economic crisis, need creative, full consideration and market oriented exertion. As a man, we can't surrender to the economic crisis which the situation become difficult, so we have to work to make something creative, innovative and brave to take a decision and risk to the self-field of endeavor. Like home industry or small industry which moves in make Varian chips is called "Ibu Sumiati" and "Mawar" where the location at Tegalondo, Malang. Developing the small industry with establishment, competed and support opportunity can be improving production processing, skill, productivity, increasing society income, strengthen the economy and accelerate the National development [1]. Small industry is the work that becomes hope support of Indonesian society, remember more than 99 % work in Indonesia is the small industry that absorbs laborer about 88,30 % [2]. In other sides, [3] [4], small industry is the part of the work world integral which have the important and strategic point to get the aim of national development that in this moment, we call economic citizen. Chips' product are snack that the public like it. Crunchy and cheap that makes chips are the correct alternative choice to start the business. Chips industry that be worked the partners are well done but there are some problema. Chips industry in the name "Bu Sumiati" (partner number 1) are very simple, low quantity and

quality product, traditional, still use the kitchen tools in product processing, handy, simple package, and drying up the chips uses tray that made from bamboo. Drying up with this way needs more energy and times that the chips' product is not good enough. The chips' product has no label so it made the market just around the home and near small stalls. The "Bu Sumi" chips product serves more direct buyers such as the gift brought back from a trip, ceremonial feast, Idul Fitri and Idul Adha and Independence Day. Bu Sumi doesn't make administrative cost that means the profit is direct to fulfill the basic requirement and helps her husband that work as the building porter. In this condition, Bu Sumi's chips product can survive and the profit can help her family necessary. [5] said that small industry, and home industry has low productivity because use simple technology and gives low wages, so a lot of labour that works in this segment also works at another place, which not disturb the activity at the chips small industry. Chips industry with name "Mawar" (partner number 2) is different with another partner. The "Mawar" chips products are managed by Bu Ponisri that has bigger omzet with Varian chips such as cassava, sweet potato, and banana.

The major problems of the partners to increase chips' production are (1) less financial capital and main tools such as the scrapped machine, dried tools and another tool that help the production. The processing of basic commodity like cassava with manual scrapped use knife and coconut scrapped making longer time in chips processing (2) less information about progressing Varian taste of chips (sweet, salty, hot, balado, barbeque and corn) (3) the chips' product still can't sale in the supermarket because less information about how to make the chips products that registered into Health Department to get P-IRT number (4) less information about packaging and labeling innovation technology that makes the product can sell at board market. [6] said that needed production innovation technology, which produces the diversification products that has a certain quality, effective and efficient so the product can accept at the market. Based on priority problems of the partners, the IbM aimed to increase production capacity with innovation efficient technology, transfer knowledge of small industry partners on choose and process basic material and make various flavors chips, supervise and guide in make attractive package to extend the market, help in realize chips small industry partners's product listed on the Health Department to get P-IRT number.

## 2. Target and Outside

The outside of IbM's varian chips small industry at Tegalgondo especially is :

1. Increase efficient and production capacity with innovation efficient technology for small industry scale pass through realizing processed production tools.
2. Make varian chips with various flavors that extend the market such as sweet, salty, hot, balado and barbeque.
3. Package design with varian size and interested label
4. The partners get P-IRT number.

## 3. Implementation Method

The implementation methods which uses in this IbM program are approach method, construction. Trainee, assistance and realize of problem solving for chips small group industry. The stage's activities are:

1. **Approach and construction with product tools realization.**

The aimed to increased efficiency and chips' production capacity. IbM's team do the implementation with realization efficient technology, which has excellent technology for small industry capacity, simple, easy operation and another tool. As long as the both partners processing the chips manually with very simple and old tools from peeling, grading, steaming, drying until frying so the process inefficiency. This problem makes the both partners can't supply the demand market maximally. Unitri's team try to give the information of efficient technology, which has excellent technology, simple and easy operation with give cassava's graded machine. Ingredients graded machine, tools for dry chips with big size and another tool that can increase production efficiency so can gain higher capacity.

2. **Processing product training and business management**

The aimed to produce varian chips into various flavours, which market interested. A lot of consumers like chips with various flavours. Besides sweet and salty that produce the partners, another flavour can

produce to increase the product competitive and market demand with processing product training adds various flavours such as hot, balado, barbeque and corn. The points of processing product training, which would be given to the partners are how to choose good basic ingredients, processing chips, variation of the product which the consumers liked so the partner not just produces one kind of chips. The point that chosen appropriate with IBM's team first approach to the partner who meeting and interview with the partner. The problems are weak competitive capability, fewer tools, old tools and less information about chips' product. Attention the problems, the urgency point that IBM's team has to do immediately is arrange the processing product training would do on May 24th 2013 at Ketangi's village meeting hall that follows the partners and around society. The training gave by IBM's team and one of BLK Singosari

3. **Assistance repair the product appearance with design package**

Interested and good package in quality and design giving self-interested to the consumes. Package also has the function to product safety and to be promotion. However, the partners have the simple package just use plastics without a label whereas, in fact, the package has to be unique, interesting, giving first impression and make the consumers interesting to buy it. Repair product appearance with giving knowledge and information about how to make the good and interested package. The information is all about important things so the partners know about the government regulation. IBM's team also making design package sample aimed to motivation the partners to make good package and label that the product can supply to broad market. Tool of the package is given hand sealer aimed to repair the product appearance so can increase trade values. Complement of design product is a label that has content information about chips and can see at picture number 2.

4. **Assistance arrangement permission (P-IRT)**

Food safety for consumers needed construction and product registration. Especially for produce, the number of P-IRT (Food-Home Industry) is important that can supply the product to board market. To get number of Food-Home Industry Certification (SPP-IRT) the partners have to fulfill Health Department's Permission. IBM's team assistance the partners to arrange P-IRT number with fulfill the requirement and form to follow the processing product training at Malang's Health Department and then can get Food Home Industry Certification (SPP-IRT) and follow the next process to get Food-Home Industry Number (No. P-IRT) that can be written at the Varian chips's label packages.

5. **Monitoring and evaluation**

There are two evaluation period in this program are first evaluation than to see the partners seriously with these programs to development their industry and last evaluation will be justification the implementation the programs to the partners.

#### 4. Result And Discussion

IBM's implementation totally fit the schedule. Target analyses for each activity are;

1. **Improvement efficiency and production capacity**

Innovation of efficient technology in small industry scale that applies to the partners in the form of cassava's graded machine, ingredient's graded machine, tools for dry chips with big size and another tool that can time to economize so can increase production efficiency. Picture of cassava's graded and chopped machine can see at picture number 2. From beginning to produce miler chips, the partner has to choppy 25 kg cassava manually for four hours. With graded/chopp machine the work becomes, efficiency just needs one hours to choppy 50 kg cassava in one day. It means the machine can make efficiency so can increase the production capacity.

Increase the production capacity will increase the income. First interview with the partner, production rates in one day for 25 kg can produce 10 kg miler chips with the price Rp.15.000,- per one kg so the omzet Rp 150.000,- with about 50.000 profit. The chopper machine can increase production capacity becomes 50 kg cassava then can produce 20 kg miler chips and the omzet Rp 300.000,- with about Rp. 100.000,- profit or there are 100% increased. In regularly produce the chips can gain Rp. 3.000.000,- profit in one month. Similarly with partner number 2, the chopper machine can increase



production capacity from one kw in a day become three kw in a day with Rp 200.000,- profit a day. Efficient technology in small industry scale with excellent technology, simple, easy operation in cassava's graded machine, ingredients graded machine and another tool can help effective and efficient chips production so don't need a lot labours to do it. Development the small industry scale is aimed to increase production capacity and management skilled production also increases certainty and industry protection so the industry becomes autonomous, continuity and ready to grow and compete [7].



**Figure 1.** Introduction of Chap Machine and Scraped Machine

## 2. Training for processing product and business management

Training for processing product and business management did on May 24th 2013 in Ketangi's village meeting hall at Tegalondo, Karangploso, Malang. There are 46 participants who follow the training. They are Unitri IbM'team, Ketangi's village headman, the partners and people around the village as a sympathizer. The activity is opened with briefing by IbM's head team about the aimed at the training. The subject matter gave by IbM's team and Mr. M. Tualeka from BLK (Trained and Skilled Bureau) Singosari.

The point of the training are :

1. Chips material election
2. Chips product procession
3. Various chips made
4. Market management



**Figure 2.** Unitri's Team and Partners Discussion

Training formations are speech, discussion and interview. The subject matter gave in short and simple with demonstration so that the partners and participant can be acceptance easily. In demonstration showed the chips procession from choosing the ingredients, peeling, chopping/cutting until packaging with good and right. Their discussion seen enthusiasm from the partners and participant that have a lot of questions about chips' procession and production. Technology transfer about chips' procession with

Varian flavours must be given because the partners's knowledge about the diversification way of chips' Varian flavours still minimum, with this training the partners can make chips' Varian flavours by their self.

### 3. Presentation packaging repaired.

Product package has basic function physically as product place and product protector. So the product package must be stronger from impact, sunray, pressure, temperature, water, dust, air, etc. Product package must be secure at danger contamination (physics, biology and chemistry), secure to serve and to send and safe at moment and after consumption and become promotion. The presentation packaging repairs still in sounding out and assistance about the form, substance which is used, the picture on the package and label to get good and interest package but this program still in the plan because the partners still calculate the cost. Presentation packaging repaired does with make interested package design and labeling with various sizes such as sticker plastic 500g, 250 g and 100 g, aimed to expand the market. Label package design can see at picture number 2. The information that is written on the label must be completed : food name, trade-mark name, weight, composition, name and address of the company, expiration date, date, production number and P-IRT number. Connection with P-IRT number for chips small industry scale, do the assistance with registered the product to the Malang's Health Departement as the requirement to follow trainee to get Certification Food-Home Industry (SPP-IRT) and P-IRT number.



Figure 3. Design Package Samples

### 4. Assistance arrangement permission of P-IRT

Assistance arrangement permission of P-IRT number did on September 19th 2013, IbM's team and the partners are gone to Malang's Health Departement with completed the requirements and fulfill the form as the participant of the production procession trainees to get certification (SPP-IRT) and then follow next steps to get P-IRT number that can be written on label chips' package. This activities still on fulfill the form to follow the trainee. The decision of the trainee for the partners waits the quota until 30 participants. After follow the trainee and business places survey, the Health Departement will be the decision small industry worthiness to get certification and P-IRT number.

### 5. Conclusion

1. Innovation of efficient technology for home industry scale that is cassava's graded machine, and another tool can increase the chips' production capacity and efficiency the time until 2-3 hours.
2. The trainee can add a lot of information to the partners about an ingredient chosen and product procession well and hygienes.
3. There are Varian chips with various flavours (salty, sweety, hot anion and barbeque)
4. The partners are motivational to make good and interested package and label for the product.

## 6. Suggestion

1. The cooperation between the partners is needed to development so experiences and information can exchange each other about chips' production that extended market.
2. The partners have to make various chips not just one kind of chips such as banana, purple sweet potato, breadfruit and pumpkin.

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