

SHORT COMMUNICATION

Development of Mobile Application for Product Pricing

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ABSTRACT

Nowadays food product industry is growing in a large network to attain the food security. Setting a price for the developed food product is very hard for the processed food business professionals. The price has to be low enough that customers would see the price value, but high enough to earn a profit by the business professionals. In the product point of view, if the fixed price value is low, then it is not affordable. If the fixed price is too high, then it is a high struggle to sell the developed product. In general, there are many methods to follow for fixing the price. In this mobile application, cost based pricing is adapted which is a simple and mostly followed method. The cost based pricing conventional method is time consuming. However smart phones made our life simple. Hence, product pricing application comes a handy calculator which finds the price of the developed product. And this application provides an output in portable document file which can be used for further documentation. This application will be more useful for the entrepreneurs, small scale producers and food business professionals.

Key words: Food product, mobile application, entrepreneurs, small scale producers and food business professionals.

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INTRODUCTION

Nowadays food product development is the leading venture in the market areas. In that, pricing the developed product is the important area where producer can know how much profit they can earn. To a successful entrepreneur it is essential to know how much is the products cost and how to price them in a way that it will make them profit. Entrepreneurs, small help groups and food business professionals are having 'a rough idea' of the products cost and they think how to set the strategy for success. Too often, it turns out that the price these entrepreneurs are charging is not covering their production costs. Hence the need of product pricing calculator is a useful tool for fixing a profitable price for small food businesses.

In general, competition/cost based methods are mostly adapted for pricing the products (3). Competition-based pricing method looks at prices fixed by the manufacturers of products similar to the developed product. Also cross check the locations where it can sell and see the prices for available products. Then compare with the developed product to project with those of competitors products. Different perceptions of "premium," "specialty," and "store brand" bring to mind unique positions in the market and corresponding price ranges. After this thought process, they set the price accordingly. Advantage of this method takes just a little research to come up with a price. Pricing new products lower than competitors' prices may increase the sales. On the other hand, all the costs of producing the product may not be covered. A start-up business needs to include establishment costs for self sustainability. Drawback of this method such as fixing a low/introductory price and then raising it later confuses the regular customers (1). Cost based pricing takes all the costs (variable /fixed costs) of doing business into account to determine the price of each product unit. Variable cost includes how much amount paid for ingredients, labor, packaging, and sales commissions. It increases in direct proportion to the number of units sold. Whereas fixed costs remain fairly constant regardless of how many items sold. They include building rent, loan payments, insurance, and utilities. Gather all the information about your costs associated with a unit of the developed product, determine how much profit you need to make, and then set the price accordingly. Advantage of this method like selling price is backed up by the actual costs of doing business, not just about guess. This makes it easy to calculate a price that accounts for how much money it costs to do business and what kind of profit might expect. Limitation of this method such as

when start-up costs are included in pricing, new products may not compete well with established brands (2).

The conventional method of pricing the developed product includes many calculations and time consuming. However, the method output cannot be helpful for documentation. The development of mobile application solves this issue. Since developments in mobile technology has reached great heights and helps to simplify our day to day activities. Right from keeping an alarm, news reading, purchasing, money transfer etc. can be done through mobile application. Hence, mobile applications are developed in the food industries too. In this paper, the developed mobile application for cost based pricing will be explained.

DEVELOPMENT OF MOBILE APPLICATION

Development of mobile application involves quite an extensive pre-planning. Need to really make it stand out in function, in its use and in its design to attract the consumer's attention. The process of building an App consists of detailed one step at a time approach is called Mobile App Development Lifecycle. It is just a representation of the conventional Software Development Lifecycle (SDLC) and contained eight steps.

1. Comprehensive research and Preplanning Find answers for the following
 - Is the app is free or paid one?
 - What is the main aim of this developed application?
 - Who is the targeted audience?
 - What are the targeted audience looking for?
 - How the similar app works?
 - What are the similar apps offers to the customers?
 - What are the similar apps lacking features?
2. Conceptual prototype Draw a flowchart based on the ideas for the prototype and get feedback from the concerned experts about the perspective of the idea/determine loopholes in that.
3. Asses Technical viability To check back end system support the App's functionality or not in the various platforms (Android/iOS) and its formats (tablet/smartphone).
4. Actual Prototype Build a real prototype of app to experience how it works interacts with the users. Get information from the users about that the app is fine or require changes.
5. Design app before development App design is a complex process that needs to be done precisely before the code development. This exercise gives an idea of how app looks real and feels.
6. Developing the app This is the core phase of the app development process. Where the developer build the app in the decided development platform. Though several platforms available, agile methodology offers more flexible operations such as revisions, collaborations, iterations etc.
7. Testing the app Beta testing is a proven technique for test the app by the user. Since it allows user to test and give feedback for effective guidance before launch the app.
8. Final app launch Need to get approval from the app store, since it may require regular updates, addition of new features etc. for further version development.

Based on the above eight steps, app was developed in the Android studio (Version 1.5) Mobile application platform and deployed (Figure 1) in the APP store (4).

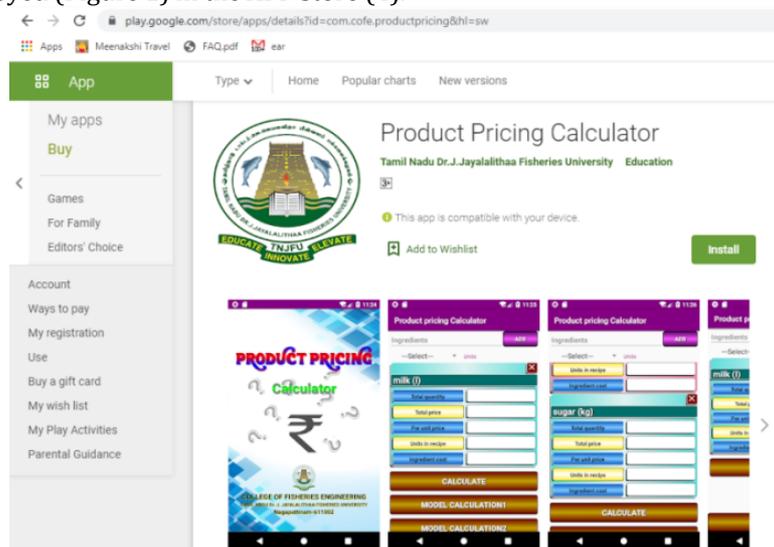


Figure 1. Product pricing calculator in Google APP store

METHODOLOGY

Cost based pricing method for Price per unit = $(A + B + C) / D$; Where A – Direct cost, B – Indirect cost/ Over head charge, C- Margin / Profit and D- No of units produced respectively. Direct cost associated to the entire cost involved in production, indirect cost includes establishment cost/maintenance cost of machineries used for the production.

Let us assume a processor is preparing 2 kg of pickle inclusive of forty pouches. He wants to fix the price per pouch based on his expenses. The processor needs to consider his profit and maintenance cost too.

A. Direct expenses for preparing 2 kg pickle is follows

| Ingredients | Total quantity | Total price | Per unit price | Units in recipe | Ingredient cost |
|---------------------|-----------------------|--------------------|-----------------------|------------------------|------------------------|
| Fish (kg) | 4 | | | | 700 |
| Ginger (g) | 1000 | 80 | 0.08 | 300 | 24 |
| Garlic (g) | 1000 | 150 | 0.15 | 300 | 45 |
| Green chilly (g) | 1000 | 40 | 0.04 | 250 | 10 |
| Curry leave (g) | 500 | 10 | 0.02 | 100 | 2 |
| Asafoetida (g) | 100 | 75 | 0.75 | 15 | 11.25 |
| Chili powder (g) | 500 | 150 | 0.3 | 250 | 75 |
| Turmeric powder (g) | 250 | 12 | 0.048 | 15 | 0.72 |
| Pepper powder (g) | 100 | 100 | 1 | 50 | 50 |
| Spices powder (g) | 100 | 100 | 1 | 50 | 50 |
| Salt (g) | 1000 | 20 | 0.02 | 300 | 6 |
| Vinegar (ml) | 1000 | 40 | 0.04 | 300 | 12 |
| Sun flower oil (ml) | 1000 | 100 | 0.1 | 500 | 50 |
| Packaging | | | | | 120 |
| | | | | | 1155.97 |

Therefore Direct expenses (A) = Rs. 1155.97

B. Over head charge

Let us assume 20 % of direct cost is considering as over head charge. The overhead charge includes man power and other maintenance charge.

$B = 0.2 \times 1155.97 = \text{Rs. } 231.194$

C. Margin/ Profit

Margin or Profit amount fixation is varies depend on the processor interest. Let us assume 25 % profit ie. 25 % of total amount that he spent.

$C = 0.25 \times (1155.97 + 231.194) = \text{Rs. } 346.791$

D = No of units produced = 40

Therefore price per unit = $(1155.97 + 231.194 + 346.791) / 40 = \text{Rs. } 43.35$

The above said calculations can be easily done in the developed mobile app and determine the unit price of the developed product (Figure 2). It also helps the user to save time and fix the product price without loss.

| Product pricing calculator | | | | | |
|-----------------------------|----------------|-------------|----------------|-----------------|-----------------|
| Ingredients | Total quantity | Total price | Per unit price | Units in recipe | Ingredient cost |
| Fish (kg) | 4 | 0 | 0 | 0 | 700 |
| Ginger (g) | 1000 | 80 | 0.08 | 300 | 24.00 |
| Garlic (g) | 1000 | 150 | 0.15 | 300 | 45.00 |
| Green chilly (g) | 1000 | 40 | 0.04 | 250 | 10.00 |
| Curry leave (g) | 500 | 10 | 0.02 | 100 | 2.00 |
| Asafoetida (g) | 100 | 75 | 0.75 | 15 | 11.25 |
| Chili powder (g) | 500 | 150 | 0.30 | 250 | 75.00 |
| Turmeric powder (g) | 250 | 12 | 0.05 | 15 | 0.75 |
| Pepper powder (g) | 100 | 100 | 1.00 | 50 | 50.00 |
| Spices powder (g) | 100 | 100 | 1.00 | 50 | 50.00 |
| Salt (g) | 1000 | 20 | 0.02 | 300 | 6.00 |
| Vinegar (ml) | 1000 | 40 | 0.04 | 300 | 12.00 |
| Sun flower oil (ml) | 1000 | 100 | 0.10 | 500 | 50.00 |
| Packaging | 0 | 0 | 0 | 0 | 120 |
| Direct cost (₹) | | | | | 1156.000 |
| Over head charge (₹) | | | | | 231.200 |
| Margin (₹) | | | | | 346.800 |
| Total no of units | | | | | 40.000 |
| Price per unit (₹) | | | | | 43.349 |

Figure 2. Output format of Product pricing calculator

END USERS

- Scholars
- Small scale food processors
- Entrepreneurs
- Self help groups
- Industries

CONCLUSION

The developed mobile app allows the user to price the developed product by include the materials used and the amount spent. Hence the producers can increase/decrease the product price by modifying the parameters. This mobile app will be more useful for the product development professionals, entrepreneurs and small self help groups.

REFERENCES

1. Johansson M, Hallberg N, Hinterhuber A, Zbaracki M, Liozu S (2012). Pricing strategies and pricing capabilities. *Journal of Revenue and Pricing Management*, 11(1), 4-11.
2. Oyer DJ (2011). Pricing and cost accounting: A handbook for government contractors. Berrett-Koehler Publishers.
3. Reddy, Kasi M, Saraswathi S (2007). Managerial economics and financial accounting. PHI Learning Pvt. Ltd.
4. (<https://play.google.com/store/apps/details?id=com.cofe.productpricing&hl=sw>)

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