A Model for Pricing under Risk in Electronic Marketing

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Abstract Applying the electronic marketing has led to enhance the relationship between customer and seller by understanding requirements of the customer and making it dependent to the goods and services of the seller. Considering the importance and increasing growth of the role of internet and information technology in today's marketing, this work intends to propose marketing operations for companies presenting products via internet and design the website. Employing a web mining technique, the visiting time of the viewer is used to estimate the number of demand for products. Whereas, profit making is the main objective in marketing, the research examines how to calculate the profit. The focal element in determining profit is price. Thus, pricing based on the obtained data from the proposed marketing website is designated. Due to electronic concepts applied in designing protocols and extracting data, risks are unavoidable. So, risks are defined and inserted in computations to obtain a more reliable result.

Keywords E-Marketing, Pricing, Expected Risk

1. Introduction

Unprecedented shifts in the business climate around the world have created new forms of competition as well as new competitors in the global business landscape, thus forcing firms to rethink their marketing strategies. Three developments in the global business environment stand out as having a dominating role in this shift. The objective of this article is to highlight and explore these changes. The first shift has to do with the rapid growth and greater involvement of firms' in global business activities. In particular, the tremendous growth in outsourcing activities has necessarily engaged new entrants in global business-to-business (B2B) activities (i.e., importers) to which much greater attention should be paid. The second change agent is the transition to a more holistic approach to managing supply chain systems through greater coordination of entire distribution channels, alliances, and relational exchanges. To address the needs of

their customers, firms require harmony and continuity in their supply chain systems and as supply sources are increasingly global, for example, through increased outsourcing, relational exchanges and alliances have become much more important. The third development fostering a major change in how firms conduct business and compete is the transition to electronic forms of exchange, particularly with respect to information access, storage, and retrieval [1].

Marketing managers have turned to information technology (IT) to cope with the ongoing challenge of getting more from marketing resources while simultaneously meeting greater expectations to establish durable relationships with customers. Recent studies suggest that organizations can improve customer acquisition and retention by integrating IT into their marketing practices to foster rich interactions with their customers [2, 3]. This assimilation of IT and marketing, commonly referred to as e-Marketing, encompasses a broad set of interaction-enabling technologies that are frequently used in industrial business-to-business (B2B) markets including customer relationship management (CRM) software, sales force automation (SFA), e-commerce websites, and extranets (i.e., private websites set up specifically for a customer). While researchers have presented empirical evidence that relates IT-enabled customer interactivity to firm performance [4], there remains a gap in our understanding of how IT and marketing resources are combined to develop new capabilities. Given the pervasive use of IT within marketing today, it is critical to further expand our knowledge of the drivers of e-Marketing capability and how this capability has the potential to enhance firm performance and generate a competitive advantage [5].

The adoption of information technology (IT), new technologies and the Internet has gained a lot of interest from researchers, policy makers and practitioners during the last two decades. As a result, there are a number of accepted theoretical frameworks that has been used by researchers to investigate the adoption and diffusion of IT and new technologies by the business community. Moreover, recent research into IT adoption and use has been motivated by the

desire to predict factors, which can lead to successful application in a marketing context [6, 7, 8]. However Electronic Marketing (E-Marketing) is still a relatively new concept, particularly for organizations operating in developing countries that have limited resources, bad infrastructure, and strong competition and cannot afford to make unwise investments or wrong decisions. Therefore, there is a need to have a much clearer understanding of E-Marketing problems as well as its opportunities for such organizations; and how these technologies can be used to carry out the organization marketing activities and processes in a more effective and efficient way than reliance on traditional marketing practices [9].

2. Literature Review

E-Marketing can be viewed as a new philosophy and a modern business practice involved with marketing of goods, services, information and ideas via the Internet and other electronic means. Strauss and Frost define it as: "The use of electronic data and applications for planning and executing the conception, distribution and pricing of ideas, goods and services to create exchanges that satisfy individual and organizational goals" [10].

The rapid development of commerce on the internet has made e-market sales attractive for many firms and individuals. From the customer's point-of-view, the online purchase is advantageous because it drastically reduces the search cost and is convenient since the online market operates 24 hours a day, seven days a week, and the customers can purchase online at any time [11, 12].

With growing competitive pressures, companies are increasingly deploying the Internet as a strategic tool [13, 14]. The use of information and communication technology (ICT) not only impacts on communication, control and collaboration processes [15, 16, 17, 18], it also promises a fast-track option of international expansion [19, 20]. When a firm establishes a presence on the Internet, its marketing activities, including advertising, pricing, and distribution, should reflect characteristics unique to the medium to help consumers realize the value added over traditional methods. Consumers in the Internet medium are more than just passive recipients in the marketing process [21]. The Internet is an interactive medium as opposed to traditional marketing which usually allows only one-way communication [22, 23] from marketer to consumer. Many diverse vendors, from florists to manufacturers of durable goods, as well as service providers such as airlines and hotels have rushed to do business on the Internet. In order to effectively market on the World Wide Web (the Web), companies need to evaluate the basic components of the marketing mix: product, price, place, and promotion. In the ever-changing electronic environment of the twenty-first century, firms must identify and sustain competitive advantage in order to survive [24].

This requirement is more apparent in markets populated by small and medium sized electronic commerce companies

and in the case of new start-up companies in the process of launching new businesses in electronic commerce [25]. Much speculation has arisen over the last decade concerning customers' perceptions of the value of online shopping and their trust in the internet as a distribution medium. If customers do not trust online providers sufficiently, the result may be that they do not enter into transactions because they fear the risks involved. In this event, organisations cannot maximise the potential of their online retail facilities. Mail order has been considered to be more risky than in-store purchasing [26] and users of the internet encounter more risks than they do in face-to-face transactions [27]. Not all users understand or perceive these risks, or wish to contemplate them. Some consumers may consider that just working with computers could be risky, let alone using them to make purchases. Online transactions involve a lack of control on the part of customers with anonymous trading partners and, consequently, the potential for opportunism. It may be that some risks are heightened or unique to the online purchasing environment. If customers think that they may be taken advantage of, they may not engage in online transactions at all. A typical online transaction necessitates giving the vendor access to personal data, such as address, telephone number a financial details [28]. Such access may be the source of worry (or perceived risk) for some consumers, especially if they are concerned about fraud or losing money. This concern was highlighted as one of the dimensions of internet quality by Madu and Madu [29]. Customer concerns may also include worry about the honesty of the sales proposition, and immodest claims about products when customers are unable to physically check the quality of those products [30] could be visited, worries may be exacerbated because customers cannot rely on visual and physical clues to reassure themselves of the bona fides of the selling organisation. Such lack of reassurance may result in transactions being regarded as risky. Customers may also be anxious about bombardment with unwanted messages and service guarantees [31]. Without confidence in these areas, any exchange between provider and customer may be limited [32]. The importance of brand reputation has been well documented. It is no surprise, therefore, that well-known brands are more likely to succeed on the internet. Customers' risk potential is reduced because they know the brand, and are reassured of the brand's ability to satisfy their needs. But not all online retailers have either a physical presence or a well-known brand. This makes risk management imperative to the internet marketer [33]. Tan [34] suggests that less risk-averse customers are more likely to use internet shopping services. Nevertheless, internet marketers must be able, long-term, to convince customers to shop online if they are to maximise the effectiveness of online channels [35].

3. Statement of the Problem

In this study, we assume one marketing company that does marketing electronically and via web site for different

producers who have several product and markets. All marketing models are seeking to maximize the profit of company by suitable market to sell the products, as common marketing methods are used for this job. In this study, because of assuming the marketing via IT, which addressed the shortening of the marketing time, decisions are taken immediately and then reported to the superior manager, that is, by its on-line mechanism, this company can specify the potential customers, their geographical place and volume of their demands and then compare them with the same companies and finally report the results to the supplier company. Thus, the structure of such system through the design of information systems should be configured. As we said, the marketing aims to identify different markets, which result in profit-maximizing of company. Therefore, given attention that the benefit is yield of the difference between revenue and cost and the income is calculated by multiplying the price with by the number of demands. Consequently, in order to maximize profits, the company must set prices for products in different markets. The Price for customer, by considering the price on ledge to ledge point and the price with desired parentage of profit, as well as having in mind the demand rate and with the help of mathematical models of pricing, is obtained. Due to the determined prices for different products in different markets, we can calculate the expected profit. And because the recognized markets are potential, so, we cannot give exact and accurate opinion about income and amount of sale and also there are unpredictable agents in decision making, especially in immediate decisions under IT, so, in this case, the considered risk a yield of the probable distribution of sales and potential customers. Whereas, the risk affects on the rate of expected demand and this amount also affects on the profit, finally, the effect of risk on profit rate can be seen.

Research Question:

With pricing in e-marketing, is it possible to examine the profit risk?

Research assumptions:

There's a significant relationship between sale risk and price of products.

There's a significant relationship between the transmission rate of marketing decisions and profitability.

There's a significant relationship between risk factors on expected sales and risk.

4. Problem Configuration

Any company in competition with other companies in the field of competitive market exchange and supply of goods to customers and thereby more profits needs marketing and advertising. We are a marketing company that electronically and applying the web receives information required by customers to introduce and desirably present them the products from supplier companies, and then by categorizing that information, we provide a condition to compare the products with each other. By attracting the customer for a

company, we increase its profitability and by sending the accurate weekly reports to the companies, inform them from the process of presenting the product and the help their developments. In this study, noticing the marketing via IT, which addressed the shortening of the marketing time, decisions are taken immediately and then reported to the superior manager. Thus, the structure of such a system through the design of information systems should be configured.

Based on the continual visits by customers in web, different data and information which are obtained from companies and customers in web, accurate and comprehensive reports relate to register the time of observation for different products can be created and then send them to the companies. It should be considered that based on these reports, new information will be obtained that uncover the specifications of products for management system as follows:

Report chart on the proposed site:

1- The report of geographical location of customers: The report relate to all customers around the world will be sent to all the companies involved. Users' location through Internet Protocol (IP) from their computers can be registered.

2- The report of customers' favorite products: In this report, the customers' favorite products which are shown by some supplier companies will be sent to all companies.

3- The report of successful companies' notification: In this report, companies that have the most visitors or most of the pages of their products were visited, will be introduced to all the companies.

4- The report related to inform the unsuccessful companies: This report only to companies that have not visited or been visited by only a few of them will be receiving products.

When the company entered the web, at first, before entering the page for company registration, the system will treats it as one customer. When the company clicks on "register now" button on the page will enter the "Welcome" page. In this page, the option of "register" is there. After entering the registration part, the registration will open. Then the company enters the page of "receive company information". This page must be requested in cases such as: name, company, e-mail address, mailing address, telephone and fax are completely filled by the enterprises. In section of more details, the company provides a product; additional items on your order may be more customers to express confidence.

After that, the company provides a product enters the page "field of operations". In this page, the company can choose a specialty within that field of activity. Once a company has defined the scope of its activities, should focus on the selection of the products in a particular area.

When a company chose all of its products and completed details relate to each product includes type of packaging, size and weight of product, brand, how to deliver (transportation) of product in especial window, entered into stage of "period of contract". In this step, the company should specify the duration that the desired product in order to introduce and

present is on the web. By inserting its specifications, scope of activities, goods and specifications of goods, information on the website, the company completes the information relate to the website. Then company observed all information and confirms them if is correct. The final step is to get a tracking code.

After data acquisition and processing companies, product providers, and the website was screened electronically, customers from different markets web browsing. Given the interest of customers, products have specific characteristics are more observing time, which indicates that the product is customer-focused mind. We are seeing the pages as a tool we use to optimize customer relationships.

When a customer enters the website, the IP of that customer will be stored and the record time of that customer per page when viewing by the client starts. Accordingly, we have used the technique to observe and accurately record every product we have on one page. Also, companies offering every product placed on a separate page. With this job, the time period that the client is examining a special company, or sees a special product, can be recorded and on that way we use more sale of products. Longer registration shows a longer visit a page that here we mean the page relate the companies or products. Moreover, we consider that the longer visit a page show the more interest of the customer to that product and the probability of purchasing by the customer is higher, but due to electronically we must consider the risks.

The customer at first based on the classification of products in the customer's web site, select its required product. At this stage, the customer will be familiarized with companies that offer specific product.

After selecting the target company is the holder of the product, a unique product of its kind to be found. Next stage, the customer after selecting desired product in selected company, gains more information about that product and will be familiarized with type of packaging, size and weight of product, brand, how to deliver (transportation) of product. Whereas, the time of every opened webpage can be recorded, the visibility time of a separate product can help to identify the electronic market.

5. Modelling the Problem

The aim of marketing is to maximize profits. Therefore, since profit is equal to the difference between revenues and costs, the profit maximizing firm will set prices for products in different markets. Mathematical models for the pricing of use. The price for various products can be expected to calculate profit.

For pricing and profit calculations we use the following parameters.

Index:

i: index for products

Parameters:

α : total expected demand during the planning

$i\beta$: proportion of the total demand for product i in the total demand for goods

Q_i : the demand for product i

q_i : the capacity for product i

P_{ri} : product prices based on expected demand

$PrBi$: even price of product i

$PrFi$: cost benefit of product i

M_i : Cost of product marketing i

P_i : production cost of product i

N_i : maintenance cost of product i

T_i : Product transferring the cost of i

CV: variable costs

CF: fixed costs

Π : Profit

C: Total Cost of Goods

There are several ways to determine the price. We'll research the demand-based pricing method we use to determine the price of their products. The demand is amount of products that a person wants and according to its price and other constant agents is able to buy. The demand for product is affected by factors such as price i, consumer income, consumer tastes and preferences and advertising, and the like are for product i. If the price of product i, and other factors affecting demand are held constant, the demand function is obtained. In fact, the demand function is a function that shows the relationship between one product and amount the demand for that product assuming the other agents are fixed. Now, Prices are based on demand function we can obtain the inverse demand function.

In this study, the demand is in three ways including the total expected demands during planning proportion to the demand for product i to the total demand for all products, and the demand for product i.

Accordingly, the price is:

$$P_{ri} = \alpha + \beta_i Q_i \quad (1)$$

The relation in this equation forms from demand for different products to help fit the coefficients. The calculation base of this relation is single-variant linear regression that with the help of minimizing the sum of squared errors is obtained.

Whereas, even price of product i, economically viewpoint is the least presentable price and a price with desired profit is the most desirable price, a price of product which is calculated based on the demand is better to be an amount between these two prices.

The even price of product i, according to equation (2) below, is calculated.

$$PrBi = [(q_i * [CVM_i + CVP_i + CVN_i + CVT_i]) + (CFM_i + CFP_i + CFN_i + CFT_i)] / q_i \quad (2)$$

The price of profit obtains the following way:

$$PrFi = PrBi * X\% + PrBi \quad (3)$$

Finally, whereas, is tried to maximize the profit, so, we multiply the specified price to numbers and then deduct it from costs to get the desired profit. So, based on the defining the benefit we have:

$$\pi = \sum (P_{ri} * Q_i) - c \quad (4)$$

$$C = \sum (Q_i * CV_i) + CF_i \quad (5)$$

Risk Considerations

As it's been said, whereas the realized markets are potential, so, the exact and definite opinion about the price and amount of sale cannot be presented and also there are unpredictable agents when making decision especially immediate decisions under IT. For this purpose, the assumed risk is yield of probable distribution of sale and potential customers. As a result, the effect point of risk is on number of customers and consequently number of products. This job will lead to evaluate the different markets from the viewpoint of income and sale which will result in better decision about markets.

Types risk in online shopping:

Deficiency in internet connection:

If a user is visiting the website of our company and because of computer or internet disorders, is disconnected, and also when a user is not beside his/her computer for some reasons (for example telephone call) but its observation is also being recorded on the server of marketing company, we should include the risk. As a result the risk associated with possible defects in connection with an exponential distribution with parameter λ . λ is the average number of failures per time interval.

$$F(x) = \lambda e^{-\lambda x} \quad (6)$$

Wastes in transfer:

When transferring a product to the customer location, the possibility of any damage to the product or its packaging is there, as the total amount is calculated at the time of planning and possible distribution can be presented. Wastes in transformation have uniform probable distribution. As, a and b are distribution parameters.

$$f(x) = \begin{cases} \frac{1}{b-a} & \text{for } a \leq x \leq b \\ 0 & \text{for } x < a \text{ or } x > b \end{cases} \quad (7)$$

Lost Sale:

Because the production capacity, ability of responsiveness of production system for products in different times is limit, but the demand is dynamic and it may sometime be more than capacity of production or because of some reasons including incorrect estimation of demand, lack of confidence, lack of transport cost savings to the customer or to be able to meet customer demand, in such circumstances, responsiveness will not happen. Whenever it happens, the amount of no responded demand will be recorded and then a probable distribution program will be expressed. In this study, normal probability distribution, μ and σ are the mean and standard deviation.

$$f(x) = \frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{(x-\mu)^2}{2(\sigma)^2}} \quad (8)$$

Returned Order:

After identifying the mount of order and send it to

customers, clients may see the reason (such as quality, size, color, material), irrespective of product purchase and give it back. In each period, a number of marked and can be returned for a uniform probability distribution with parameters a and b according to equation (7) assessment.

The risks associated with rising costs and declining sales is as follows:

Parameters required in relation to risk:

Index:

j : number of risk factors j

Parameters:

$\lambda(x)$: loss function

x : The continuous random variable corresponding to each of the risk factors

$f(x)$: the probability density function associated with each risk factor

Λ_j : the risk associated with each risk factor

$$\Lambda = \int_{-\infty}^{\infty} \lambda(x) f(x) dx \quad (9)$$

Loss function in Equation (10) has been determined that it is usually a constant value is 1, the value of the random variable is continuous.

$$\lambda(x) = C |t - x|^2 \quad (10)$$

By putting $\lambda(x)$ and $f(x)$ in equation (9) the expected risk can be calculated.

After calculating the expected risk, this amount will be deducted from the expected value of the number of products; the expected number is obtained without risk. Then put this number in the utility function, we will gain good profit.

6. Case Study

The cooperative company of dairy products of Kabood Val, located in Industrial Town of Ali Abad Katool, north of Iran, in 2004, with numerical capacity of 4tons per day with the trade name of Kabood Val-e Saraban, has started its activity by producing products like Yogurt, buttermilk, Cheese, Pasteurized Milk, and in 2008 they changed the brand name to the Corporation of Negah-e Shahand (Koome) has continued generating process.

In this investigation, a company we assumed to conclude a contract with proposed website system, is Corporation of Negah-e Shahand (Koome). This company intends to do marketing for its products including Yogurt, buttermilk, Cheese, and Pasteurized Milk by this website. We, as marketing company, by using the technique of registering the time of observation of the customers from each product, we should calculate the number of potential customers and consequently the expected volume of demand for each product. Then, calculate the price of products by using the pricing based on demand and considering the even pricing and the price with expected profit. After determining the expected demand and prices, we can determine the profits

pile. Finally, the identification of risk factors and calculates the expected value of each of them, to show their impact on profitability.

The advertising responsible of Koome Company in order to register and display its products enters the homepage of our website. Then, after entering the registration, completes all essential information about company and its products and finally gets a tracking code. We assume in this web site, the client is looking for a yogurt product. The main page of the website, when the customer clicks on the product Dough, represents companies offering this product will appear in the provinces. Customer selects buttermilk produced by Koome Company, and enters the page of types of buttermilk presented by Koome Company. After click on desired buttermilk, a new window will be opened; then the customer will see information about the product.

As mentioned, timing techniques are used. Record sightings companies offer customers the products represent a separate product, which can help to identify the electronic market. Since the arrival of the web client, IP of the customer stored in the customer record per page when viewing the client starts. This time, when a customer sees a specific company or a specific product can be recorded and the product provider companies sell more products to use. The viewing time is more about a particular product from a particular company expresses interest in the product, the customer is more likely to buy it from a customer is greater. But because it's electronic, you should also consider the expected risk factors. So considering the total amount of IP, the most popular product and company owns that product can be identified and thus the potential size of the customer's product and then determine the potential size of the corresponding products. This is a weekly report of all the marketing information is submitted to the Koome Company. Pricing Products:

Since the main objective of marketing is to maximize profits and the price is also an integral part of the profit equation, so in this paper, we as marketers must go through the company website (milk, yogurt, cheese and buttermilk to calculate price charges.

As mentioned earlier in this paper, we apply a pricing model based on the prices we get. In order to know whether the price obtained for the product, the price is good or not, it should be priced at breakeven and price compared to the percentage of profit. The breakeven price is the price the price of considering it as a consumer product, any product provider's profit will be zero profits, as a result, it's the minimum price of product can be considered. It is the best price as well as price target profit for the company intends to maximize his profits and the price can be. As a result, the first marketing company to breakeven prices and prices of desired benefits, provided that the minimum and maximum prices for the product are according to the information about fees and weekly production capacity, the company provides a product to calculate the data provided. The cost for each product that should be considered includes:

1 - The cost to obtain a marketing company

2 - Cost of production

3 - Cost of Maintenance

4 - Cost of transfer

Any one of these expenses includes both fixed and variable part is. As mentioned, the subscript i indicates the types of products we have 4 types of products are yogurt, milk, cheese and butter milk. The weekly production capacities for each of the products are 6500, 8500, 3000 and 2000. According to information obtained from the stack, the total costs of each product (Table 1) are:

Table 1. Total costs

Cost	1	2	3	4
Marketing	6500350	8500400	3000500	2000300
Production	58000450	91000500	75000600	21000400
Maintenance	4875200	6375300	2250450	1500250
Transfer	3250150	4250200	1500300	1000100
Total	72626150	110126400	81751850	25501050

According to equation (2), after the determination of costs, breakeven prices for products in Table 2 can be calculated by marketing company:

Table 2. Breakeven Prices

i	1	2	3	4
PrB_i	12323	14356	29100	13800

Then, the marketing company through the breakeven price, and the profit for his company considered desirable that the product (i.e., the amount that the company wants more than breakeven, benefit) from equation (3) and Table (3) the price of each product for the desired profit gains. Good profit for the company, the product is considered to be 30% ($X\% = 30\%$).

Table 3. Price with expected profit

i	1	2	3	4
PrF_i	16020	18663	37830	17940

According to equation (1), to get the prices for the products, we have a number of potential products or the amount of the expected demand for the company's products to obtain. To calculate the expected demand for products, customers at various points are assumed. Because dairy products, and a supermarket as a center and customers of the supermarkets till certain radius from this point are considered. As we said, each user that enters our website, the duration of his/her visit time for each page is recorded. If the customer is a potential user of the product, he will see that the duration of the period of time (measured in seconds) is greater. Thus, for any number of users who are potential customers (i.e. users see when they set amount of time is even greater) are recorded. But the product will be sent only to areas where the number of registered customers is greater

than a certain amount. If it is less than a certain amount, shipping cost is not the point. Since for every product, the number of its type in a page number is different, the threshold for each product is not intended to be identical. For example, for milk products, because of having two types of milk (package, bag) the observation time for the customer is 12 second and also the threshold for yoghurt 180 seconds, cheese 180seconds and for buttermilk is 240 seconds.

And also the threshold number of customers waiting in one spot, for it has become a potential customer (i.e., the product should be added to that point), because different products (milk, yogurt, cheese and buttermilk, are not equal. As a result, the threshold for milk is 60; yogurt 50, cheese 45 and buttermilk 40 are considered.

Table 4. The demand for product i

i	1	2	3	4
Q_i	1980	5150	3160	3810

Prices based on equation (1) and Table (5) is equivalent to:

Table 5. Prices for consumers

i	1	2	3	4
Q_i	1980	5150	3160	3810
α	14100	14100	14100	14100
β	0.1	0.4	0.2	0.3
Pr_i	14298	16160	14732	15243

Profitability:

The pricing for the company's products stack should be calculated profit for the company. The profit according to equations (4 and 5) is equivalent to:

$$C=309333500$$

$$\pi = -93170510$$

Expected Profit:

The profit is affected by a variety of risks, including risks that are discussed include: lack of connection, transmission losses, lost sales, order returned. The probability density functions of the parameters given in Table 5 and, ultimately, the risk values as in Table 6 are obtained.

Table 6. Expected Risks

J_i	1	2	3	4
Parameters	0.4	6,24	35,105	11,27
T	0.4	15	70	19
Λ	0.0057	56.25	0.16	137.18

As we know the risks, which affect the expected number. As a result, the calculated values obtained from each of the four functions of risk and expected risk can be achieved. The four calculated risk factors for decision makers' weights are the same, so they are linearly together. Since each product is calculated to have equal risk, the risk of each product we get into it. This amount is then deducted from the

expected number of each product, the risk-free number to specify the charges. Finally, put the values in a risk-free profit equation, we can calculate the risk-free profit.

$$\Lambda =$$

$$\Lambda_1 + \Lambda_2 + \Lambda_3 + \Lambda_4 = 0.00572006 + 56.25 + 0.1573075 + 137.18 = 193.5930$$

$$\frac{194}{4} = 48.5$$

$$Q_1 - 49 = 1980 - 49 = 1931$$

$$Q_2 - 49 = 5150 - 49 = 5101$$

$$Q_3 - 49 = 3160 - 49 = 3111$$

$$Q_4 - 49 = 3810 - 49 = 3761$$

$$C = 74845650 + 117266400 + 87505350 + 29449050 = 309066450$$

$$\Pi = [(14298 * 1931) + (16160 * 5101) + (14732 * 3111) + (15243 * 3761)] - 309066450 = -95864677$$

7. Conclusions

In this study, a model based on pricing and expected risk in the domain of electronic marketing was examined. For this, different tools and methods such as mathematical modeling, statistical methods and marketing information system were applied. In this research, using electronic website, marketing for Dairy Factory of Koome was done. Then, after determining the number of expected product, the price for consumers, considering the even price and price with benefit was computed and using these results, we finally calculate the profit. Finally, after the identification of risk and expected profit and remove it from the profit, the risk-free profit was computed.

Results of e-marketing in company of Koome are as follows:

Through e-marketing and record viewing products by customers, the expected number for milk, yogurt, cheese, buttermilk obtained. As the number of expected demands for cheese and buttermilk were more than weekly capacity of production, as proposed, the company could increase its weekly production. Considering that the number of expected demands for two other products (milk and yogurt) was less than production capacity, so, marketer wants that company change its strategy. As a suggestion, the said company could allocate part of the milk and yoghurt production capacity to another product. After that, by calculating the price, it was seen that the price for milk, yogurt and buttermilk were more than the breakeven price, and the price is lower than the profit obtained by each of them. As a result, the prices for these products were acceptable. But the price obtained for the product of cheese due to its lower price, the breakeven rate is not acceptable. The shares acquired by the company in a competitive market and customer demand is also lower than competitors is lower than competitors. In other words, prices are determined by the competitors. In order to solve

this problem, the presenting company can introduce its products via marketing and advertisement and can get more shares in market or can allocate the production line to another product and tries to develop new product.

Whereas, the number of expected demands for two products (milk and yogurt) was less than production capacity, and also the price of cheese was less than its even price, the yield profit was negative as it means loss. So in order to improve the negative profit and turning to positive, we must increase the expected demands for two products by marketing and advertisement so that the price function, which is based on the expected demands, can increase. Whereas, price is one parameter of profitability, so, we can change the negative profit to positive one. And also by monitoring the 4 risk factors considered in this study, we can achieve better profits. For example, by strengthening the server system in the marketing department, the failure can be controlled to some extent. Having better more accurate packaging, the amount of lost can be decreased and consequently the wastes in transfer will be decreased. The amount of lost sales can be improved by transferring the appropriate number of methods to estimate the demand for the product can be controlled. And also the amount of returned order can be decreased by running and strengthening a communication unit with customer for demanded actions of customers for products.

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