FORECASTING TECHNIQUES IN FAST MOVING CONSUMER GOODS SUPPLY CHAIN: A MODEL PROPOSAL

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Abstract

This research contains supply chain analysis of Fast Moving Consumer Goods (FMCG) and it shows working styles, tools, organization structure, relations with other departments, procedures and all the processes in the supply chain management discipline. Furthermore, it focuses on the return/stale products that are date expired, damaged and then return from customer side to the company. “Return/Stale Products” has a big impact on the Profit & Loss Statement (P&L) of the company and also it is an important part of total sales volume. To solve this problem, with analysis of supply chain of the company was started with some key parameters, reviewed the return/stale process and updated account-based processes. After the analysis phase, the new concepts of the global world about return products were searched and in the design phase they were integrated into the alternative solution ways that were presented to the company. On the other hand, forecasting methodology was an important concept to search while the alternative solution was being designed.

Key words: supply chain analysis, return/stale products, forecasting methodology

INTRODUCTION

International trade is growing day by day with the effects of globalization, economic and political integration with the disappearing borders, capture and integrate the efforts of countries in the globalizing world, trade liberalization, the discovery of new markets, new companies to join the national competition, advancing communication and information technologies, developed transport infrastructure, increasing the importance of transport corridors and so on.

Firms operating in international markets create the competitive advantages via responding global demand more quickly and economically from its competitors. The importance of international logistics activities step in this point. Companies can attack more powerful with establishing a more efficient logistics infrastructure within their global markets. International logistics management focuses on the achievement of international markets by understanding the expectations of the production of tradable goods preceding the final stage of the supply to the consumer movement in the global supply chain network in a manner to provide the lowest cost, highest customer satisfaction. Supply chain management provides important support to the logistics studies.
“SCM is a set of three or more companies directly linked by one or more of the upstream and downstream flows of products, services, finances and information from a source to a customer.” (Mertzer, 2001).

“A supply chain consists of all stages involved, directly or indirectly, in fulfilling a customer request. The supply chain not only includes the manufacturer and suppliers, but also transporters, warehouses, retailers and customers themselves...” (Chopra and Meindl, 2003; Simchi-Levi et al., 2003). Although the information flow in Supply chain systems consists of cumulative data about costs parameters, production activities, inventory systems and levels, logistic activities and many other related processes; bethinking the definition exposes that the performance of a successful Supply chain system concerns mostly with accurate and appropriate demand information as this vital data influences all decision making processes of supply chain (Tozan and Vayvay, 2007).

Supply Chain Management is a discipline that starts from the planning process specifically forecast of the goods that will produce and ends with the services that are provided to the consumer after sales operation. All the transactions and links between these processes are the elements of the supply chain. There must be a balance and optimization between these transactions (Hugos, 2002; Schary and Mikkola, 2001).

Supply chain operations can be classified like this:
- Planning includes forecasting, market research
- Production and supplier coordination
- Delivering to the customers
- Customer services after the sales

As a field of SCM has taken an importance over the last few years. There are many indications that the field will continue to grow both in terms of research and cases. SCM have benefits but the required conditions necessary to achieve those benefits, such as process management and cross functionality, customer satisfaction, process orientation, and information sharing. However, SCM also has many problems that many researcher discuss on and try to solve with new methods. FMCG is a one of them that is also main focus of this study (Dvorak and Paasschen, 1996).

Lambert and Cooper (2000) has indicated that FMCG industry is linked with closely in managing Supply Chain and Logistics between factories and customers. Working together is crucial in order to carry out consumer wishes better, faster and at less cost.

The FMCG Industry is on a high growth path with the overall demand expected to raise varied over the next decade. This is most likely to be accompanied by significant structural ways such as changing customer preferences, emergence of modern retail formats, and growing rural tendency (Giunipero and Brand, 1996).

Technology also effects FMCG sector on good way. Technology improves the potential benefits of supply chain management through reduction of inventory losses, increase of the efficiency and speed of processes and improvement of information accuracy with RFID technology. A number of companies in FMCG industry have begun to use radio frequency identification (RFID) technology extensively. Some studies also carried out by researchers in literature (Bottani and Rizzi, 2008; Sarac et al., 2010).

The paper especially focuses to optimize efficiency of the taking orders from customers, delivering the product to the customer and customer services after the sales optimization in snacking sector; slate, delist products that means products come back from customers to the firm due to slate, delist or another reasons.

Figure 1. Project Focus

SALES MANAGEMENT

A sale is the pinnacle activity involved in selling products or services in return for money or
other compensation. It is an act of completion of a commercial activity.

It is an end point of the whole organization. Purchasing, Production, Marketing departments etc. work to build a potential for “the Great Volume of Sales”. Service sales, product sales, it is not important what you sale, you have to satisfy your customer needs to keep the customer long period work – partner. It is called win & win strategy.

In the global markets, Organized trade forms more from half of the Sales part. The increasing trend of the retail markets and discounts markets makes the organized trade “shining star” on the global markets.

Organized trade is the new concept of Sales. In organized trade, selling high volume of product in case of determined agreements are made together customer.

In Turkey, Sales process on traditiona l channels generally but due to multi-national companies, new concepts are speak out and applied in many companies in Turkey a little late, too.

Sales organization’s key points are:

- Sales peoples, who are in touch with customer,
- Distribution channels, that have to reach every point you want to stand,
- Warehouses, that located optimum points and it has to answer the orders,
- And, Manager team to lead these points, accurate forecasts, well-built organization structure.

In addition to this, on Fast Moving Consumer Goods sector In Turkey, Organized Trade is newly adopted and it is an increasing trend concept. As Pepsico, Coca-cola, P&G, etc. huge profitable companies makes their distributions major percentages in traditional way.

FORECASTING

Forecasting is an ancient activity and has become more sophisticated in recent years. For a long time, steady steps in a time series data set, such as simple trends or cycles (such as seasonals), were observed and extended into the future. However, now a mixture of time series, econometrics and economic theory models can be employed to produce several forecasts which can then be interpreted jointly or combined in sensible fashions to generate a superior value.

Recently, firms have begun to realize the importance of sharing information and integration across the stakeholders in the supply chain (Zhao et al., 2002). Although such initiatives reduce forecast errors, they are neither ubiquitous nor complete and forecast errors still abound (Carbonneau et al., 2008).

Forecasting accuracy is a critical element of supply chain management, but it is an area that continues to challenge most companies.

FORECASTING TECHNIQUES

Moving Averages
When seasonal patterns exist without trends, simple smoothing methods work well with deseasonalized data. Intrinsic forecasting methods are those that use the past behavior of series to predict the future value of that same series. The term intrinsic denotes that the information used to forecast the series is internal or within the series. The terms time series analysis, univariate forecasting methods, and smoothing methods are often used as synonyms for intrinsic methods (De Lurgio and Bham, 1991). The moving average forecast uses the average of a defined number of previous periods as the future forecasted demand (Carbonneau et al., 2008).

Moving averages model is useful when the patternless demands exist. Patternless demand defined as one that does not have a trend or seasonality in it. A patternless series is random with either smooth or erratic variations.

Weighted Moving Averages (WMA)
It is normally true that the immediate past is most relevant in forecasting the immediate future. For this reason, weighted moving averages was used, when more important period (sales, or return data) were considered. For example, sales amounts are high before Christmas, so in January expected sales amounts are low, and then lower index was used to calculate the January’s forecast.

The most important reason for not using moving averages is that exponential smoothing is as accurate as moving averages while at the same time computationally more efficient. When using moving average, it is more difficult to determine the optimal
number of periods to include in the average. In contrast, it is somewhat easier to find the optimal number of periods using the exponential smoothing model.

**Exponential Smoothing**

Exponential Smoothing refers to a set of methods of forecasting, several of which are very popular – Brown’s double, Holt’s two parameter and Winters’ three parameter EXPOS.

EXPOS is the most widely used of all forecasting methods. The trend and seasonally adjusted exponential smoothing methods are used in many computerized forecasting systems for production, inventory, distribution, and retail planning (De Lurgio and Bhame, 1991).

**Single Exponential Smoothing**

Single exponential smoothing is easy to apply. Uses – the most recent forecast, the most recent actual demand, and a smoothing constant (alpha). The smoothing constant determines the weight given to the most recent past observations and therefore, controls the rate of smoothing. It must be greater than or equal to zero and less than or equal to one.

**Smoothing Constant**

Optimal values of alpha should be used in exponential smoothing.

The function of the smoothing constant is to give a relative weight the most recent actual and forecasted values.

*With high(low) autocorrelations use high(low) alpha. With high(low) smoothness in demand use high (low) alpha.*

Determining the alpha values is the critical to get more accurate forecast values for the data. If you try to forecast in seasonal trends, you have to calculate in the high alpha level (Finch, 2006).

**Regression Analysis**

Regression analysis is a general approach for modeling the casual relationships between one variable, such as product demand, and one or more other variables, such as price, industry sales, or other economic variables. Regression analysis distinguishes between the variable that is being predicted, called the dependent variable, and the variables used to predict that dependent variable, called independent variables (Franzese and Kam, 2007).

**ESTIMATING TRENDS WITH DIFFERENCES**

A trend is an increase or decrease in a series that persists for an extended time. For nonseasonal data, many use a rule of thumb that a trend exists when seven or more observations show a consistent increase or decrease. Trends can be difficult to detect when a series has significant randomness and seasonality.

Remembering that a trend is a consistent increase or decrease over time, it was understood that using differences identifies trends. Definitionally, **first differences** are:

\[ Y_t - Y_{t-1} = \text{Change from Period } t-1 \text{ to } t \]

**Forecasting with Differences**

\[ Y_t = Y_{t-1} + b \] (Mean of the differences)

\[ Y_t = Y_{t-1} + b \]

\[ Y_{t+m} = Y_t + m*b \]

Where \( m \) is the number of periods forecast into the future. It was assumed that the mean of the first differences reflects a trend. The mean could have been the result of random influences. The value of zero is important because if the mean is nearly equal to zero, then this is consistent with the assertion that there is no trend in the data.

**Advantages and Disadvantages of Forecasting with Differences**

Using differences to model trends has advantages and disadvantages.

**The advantages** are;

- The trend is easily calculated,
- The trend is easily interpreted,
- The significance of the trend can easily be tested using the simple hypothesis test.

**The disadvantages** of using differences arise from this method’s weakness in dealing with outliers. Differences do not smooth out the effects of extreme outliers as much as smoothed averages, such as double moving and double exponential smoothing.
Nonlinear Trends and Second Differences

The process of differences can be used to forecast nonlinear trends using either multiple differences or logarithms. Logarithms are useful when the trend is a percentage growth function and double differences are useful when modeling quadratic functions. The formula for using second differences is;

\[ Y_t - Y_{t-1} = \text{First differences} \quad (5) \]

\[(Y_t - Y_{t-1}) - (Y_{t-1} - Y_{t-2}) = \text{First differences of first differences} \quad (6) \]

(called second differences)

In the forecasting form, the process of second differences is;

**Forecasted amount** = 2Y_{t-1} - Y_{t-2} + b \quad (7)

b = The mean of the second differenced series and represents a trend estimate

SUGGESTED MODEL – “ReACT”

Determination of Pilot Area

To select the pilot areas to analyze the data and make assumptions about the forecasting of return/stale product amount, some factors were considered as:

- Sales volume
- Potential for return products
- Customer oriented return/stale issues
- Effectiveness of the OT channel

In the decision phase, 7 regions of Turkey were evaluated, through these criterion and the Marmara region, due to its high sales volume, potential for return products, return/stale issues and effectiveness of OT.

In the analysis phase, the data in two breakdowns were assessed: Account based and brand based. It is assumed this type of analysis gives both qualitative and quantitative insights for return/stale products.

Technical Infrastructure

Firstly let’s start with identifying how the “React” works, it has three critical main parts which are parameters, sales and return past data and forecasting techniques.

The parameters as follows,

- Product Life Cycle (16 weeks)
- Strategic Sales Targets (grow rates)
- Sales Procedures
- Customer Alliances
- Point of sales activities(POS) Indexes

It has a short product lifecycle to manage which creates difficulty for supply chain. React provides to see sales and potential stale/return in the base of product and location week by week.

In addition, there would be some tools like Excel Macro, ERP, and Java, to build it in software. There is an uncertainty about the digital environment for the ReAct to be used in. It will be decided by IT personnel later.

RUNNING OF ReACT

Forecasting Studies of ReACT

In all the forecasting techniques that searched, applied 2008 – 2009 actual data was and compared with 2010 actual data to measure the efficiency of the forecasting method. These are methods that were searched for ReACT implementation;

Moving Averages

It is a simple way of making forecast and also this method works well with patternless demand. 2, 4, 8 month Moving Averages applied as it is shown in the graph these methods results has high error rates and does not fit well to actual return product percentages. On the other hand, this method is a basic to start further forecasting studies and show a way to find the right distribution and forecasting style.
Exponential Smoothing

Exponential Smoothing gave the best fit forecasts for the sales data also that ReACT also gives the sales forecast as an output. As shown in the graph, blue line shows the actual sales and seems confident to actual values also has low error rates. As mentioned before formulas were used Exponential Smoothing.

Trend Estimation with Differences

These 2 sub-methods were used, 1st and 2nd differences on 2008 – 2009 Actual Return Product Amount Data to find which method is more appropriate and fit actual data. Then compare the forecasted amounts with 2010 actual values monthly to find the error rates. Tables show the differences between 2008- 2009 data through the 2 sub-methods and their mean values to use in the forecasting phase.

After the determination of 1st differences for the actual values, it was found the mean of the 1st differences that is 99 and it was set this to b value in the following formula.

\[ Y_{t+m} = Y_t + m* \]
Table 2. Forecasts with Estimating Trends with 1st Differences

<table>
<thead>
<tr>
<th>Month</th>
<th>Return Products(KG)</th>
<th>Forecast</th>
<th>Difference</th>
<th>Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>4.634</td>
<td>5.413</td>
<td>779</td>
<td>17%</td>
</tr>
<tr>
<td>February</td>
<td>4.376</td>
<td>6.912</td>
<td>2.536</td>
<td>58%</td>
</tr>
<tr>
<td>March</td>
<td>6.701</td>
<td>7.488</td>
<td>787</td>
<td>12%</td>
</tr>
<tr>
<td>April</td>
<td>3.472</td>
<td>7.172</td>
<td>3.700</td>
<td>107%</td>
</tr>
<tr>
<td>May</td>
<td>3.243</td>
<td>7.911</td>
<td>4.668</td>
<td>107%</td>
</tr>
<tr>
<td>June</td>
<td>3.519</td>
<td>7.445</td>
<td>2.919</td>
<td>53%</td>
</tr>
<tr>
<td>July</td>
<td>5.385</td>
<td>7.684</td>
<td>2.299</td>
<td>43%</td>
</tr>
<tr>
<td>August</td>
<td>8.249</td>
<td>8.643</td>
<td>394</td>
<td>5%</td>
</tr>
<tr>
<td>September</td>
<td>5.679</td>
<td>9.308</td>
<td>3.629</td>
<td>56%</td>
</tr>
<tr>
<td>October</td>
<td>4.069</td>
<td>7.304</td>
<td>3.235</td>
<td>80%</td>
</tr>
<tr>
<td>November</td>
<td>8.438</td>
<td>8.429</td>
<td>-10</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>62.620</td>
<td>89.886</td>
<td>27.266</td>
<td>44%</td>
</tr>
</tbody>
</table>

These are the results of Estimating Trends with 1st Differences method for the 2010 Return Product Amount and compared them with 2010 Actual values. As it was shown in the graph there are lots of error rates over 30% error rate. Moreover, average error rate for this method is 44% which seems uncomfortable.

Actual Results of 2008 – 2009 Return Products & Differences (2nd Differences Method)

Table 3. Estimating Trends with 2nd Differences

<table>
<thead>
<tr>
<th>Month</th>
<th>Return Products(KG)</th>
<th>2nd Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>January</td>
<td>4.974</td>
<td>-1.826</td>
</tr>
<tr>
<td>February</td>
<td>6.715</td>
<td>1.635</td>
</tr>
<tr>
<td>March</td>
<td>5.172</td>
<td>2.087</td>
</tr>
<tr>
<td>April</td>
<td>5.125</td>
<td>-2.627</td>
</tr>
<tr>
<td>May</td>
<td>5.331</td>
<td>2.028</td>
</tr>
<tr>
<td>June</td>
<td>5.804</td>
<td>-2.984</td>
</tr>
<tr>
<td>July</td>
<td>6.140</td>
<td>-2.916</td>
</tr>
<tr>
<td>August</td>
<td>8.002</td>
<td>1.526</td>
</tr>
<tr>
<td>September</td>
<td>7.000</td>
<td>-2.863</td>
</tr>
<tr>
<td>October</td>
<td>4.069</td>
<td>-1.137</td>
</tr>
<tr>
<td>November</td>
<td>8.438</td>
<td>0.655</td>
</tr>
<tr>
<td>December</td>
<td>8.438</td>
<td>4.555</td>
</tr>
</tbody>
</table>

These are the results of Estimating Trends with 2nd Differences method for the 2010 Return Product Amount and compared them with 2010 Actual values. As shown in the graph, there are less error percentages than 1st differences due to 2nd differences methods smoothing effect. Furthermore, average error rate for this method is 31% which seems more confident than Estimating Trends with 1st Differences.
Consequently, as shown in the line graph, this forecasting techniques gives over from the actual values and also only in January, March, September and December it gives quite fit results for the return product amounts.

\[ \text{Figure 5. Return Products vs. Forecasted Amounts (2010)} \]

At the summary, when these 2 sub-methods compared, “Estimating Trends with 2nd Differences” gives low error rates than 1st differences due to its smoothing effect on the forecasted amount, between these methods 2nd differences seems more comfortable for the return product amount data. These are results for 2 sub-methods;

\[ \text{Table 5. Error Rates of Trends with Differences} \]

<table>
<thead>
<tr>
<th>Method</th>
<th>Forecast</th>
<th>Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimating Trends 1st Differences</td>
<td>89.886</td>
<td>44%</td>
</tr>
<tr>
<td>Estimating Trends 2nd Differences</td>
<td>81.838</td>
<td>32%</td>
</tr>
</tbody>
</table>

Regression Analysis

Regression analysis is a general approach for modeling the casual relationships between one variable, such as product demand, and one or more other variables, such as price, industry sales, or other economic variables. Regression analysis distinguishes between the variable that is being predicted, called the dependent variable, and the variables used to predict that dependent variable, called independent variables.

In regression analysis for the project, the parameters correspond:

\[ \hat{Y} = a + bX + e \]  
\[ \hat{Y} = a + bX \]  
\[ E = Y - \hat{Y} \]  
\[ S_{yx} = \sqrt{\frac{\sum e^2}{n-k}} \]  

\[ Y = \text{Actual value of sales} \]
\[ \hat{Y} = \text{Predicted value of sales} \]
\[ A = \text{Value of sales when X is equal to zero} \]
\[ B = \text{Change in Y resulting from a one-unit change in X} \]
\[ E = \text{Error that remains after fitting the model} \]
\[ S_{yx} = \text{Standard Error of the Estimate} \]
Below, the results of generated formula can be seen: For the second trial, the previously generated formula was used to find stales value of the year 2009. The result can be seen below:

\[
a = Y(\text{Mean}) - bX(\text{Mean}) \\
b = \frac{\sum XY - nX(\text{Mean})Y(\text{Mean})}{\sum (X^2) - n(X(\text{Mean}))^2}
\]

Which yields according to our data:
\[
Y = 506.39 + 0.0107X \\
Syx = 387.189
\]

Below, the results of generated formula can be seen: For the second trial, the previously generated formula was used to find stales value of the year 2009. The result can be seen below:

![Graph showing predicted amount of 2009 stales/return products using regression analysis](image)

**Figure 7.** Predicted Amount of 2009 Stale/Return Products Using Regression Analysis

When checked independently, this estimation had standard error of 1591.6 for months, which is higher than the previous estimation. However, regression analysis estimated next year’s stales values with 18.3% average error, which is quite successful in the yearly basis.

**Effects of Point of Sales Activities to Return Products**

In FMCG sector, sales activities are essential in sustaining sales continuity. Brands should always show themselves, lower their prices, or give promotions to customers in order to survive in the competition in the market. There are various types of activities, such as visuals, promotions, discounts…etc.

The company uses 5 main activities in the market, which are insert, visual, multipack, stand and discount.

- **Insert:** Lower price for customer. So customer buys more product, increasing sales.
- **Discount:** Lower prices for consumer.
- **Multipack:** It generally refers to buying 2 or more packages in price of one.
- **Visual:** Visual advertisements which intention is attract consumer’s attention, thus increasing sales.
- **Stand:** Special shelves to be used in special days, such as Christmas. These shelves are set among the other shelves in the market, to meet consumer in various points and increase sales.

With the company of sales representatives, an activity chart was prepared to be used in ReAct system.

All these activities have different effect to sales, and also with combinations. And these effects are to be expressed with a parameter to be used as a multiplier in sales (ex. 1.35). But for the reason there is insufficient past data about activities in different markets, this calculation was left to company researchers, who will determine them as they acquire new sales data.

**Table 6. Activity Index Table**

<table>
<thead>
<tr>
<th>Activity Type</th>
<th>Activity Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insert</td>
<td>1.5</td>
</tr>
<tr>
<td>Multipack</td>
<td>1.15</td>
</tr>
<tr>
<td>Discount</td>
<td>1.7</td>
</tr>
<tr>
<td>Visual</td>
<td>1.3</td>
</tr>
<tr>
<td>Stand</td>
<td>1.4</td>
</tr>
</tbody>
</table>

At the end of project summary, the suggestion way that was coded the name “ReACT” will try 4 main different forecasting techniques that are; ✓ Moving averages,
Exponential smoothing, Regression analysis, Estimating trends (1st & 2nd differences).

Moreover, to measure the performance of the ReACT system 6 months trial period will be applied, also as mentioned at the part “Point of Sales Activities” affects directly both sales and return product process so 5 main activities were determined that affects the sales and return process in snacking sector. These are:
- Multi – pack,
- Inserts,
- Visuals,
- Stands,
- Discounts.

Furthermore, they were added into the ReACT system, by the name “Promotional Activity Indexes” that shows the “How these activities affects the sales/return products process?”.

At the end of the forecasting studies for “return/stale products forecasting”, Exponential Smoothing and Regression Analysis seems more confident and also has low error rates, but ReACT system will use these 5 techniques during 6 months trial period and then select the more appropriate method. These are the results of the forecasting techniques that were inspected;

<table>
<thead>
<tr>
<th>Method</th>
<th>Average Error Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moving Averages</td>
<td>34.6%</td>
</tr>
<tr>
<td>Exponential Smoothing</td>
<td>26.7%</td>
</tr>
<tr>
<td>Regression Analysis</td>
<td>18.3%</td>
</tr>
<tr>
<td>Est. Trends 1st difference</td>
<td>44.3%</td>
</tr>
<tr>
<td>Est. Trends 2nd differences</td>
<td>32.2%</td>
</tr>
</tbody>
</table>

Table 7. Summary for Forecasting Methods

CONCLUSION

According to the results of data analysis and the experience in the firm, one of the most essential factors in return/stale problem is rotation. Extension and development of merchandiser team, and also increasing their rotation consciousness are crucial in solving the issue. The account based observations and analysis showed that, as compared to other types of customers, the cash&carry type customers directly affect the return/stale amounts negatively. Firm’ return/stale amount is highest, as parallel with its sales volume, naturally. In addition, new product developments are also an important factor in the return issue. The success of the marketing and sales performance is leverage to NPD sales and return amounts.

In the global world, there is no applicable approach to return/stale products, companies generally do not focus on these processes. By the way, the forecasting and analysis of return/stale products directly empower the companies’ sales performance.

After the Supply Chain Analysis, ineffective processes are determined while flow charts were being investigated. These processes were eliminated. Also some processes were added to work flowcharts to identify the all work flow. This was the first step to contribute benefit on the company.

The model, ReAct, offers the important solution if it is applied in methodological discipline. After building the software, due to its features, ReAct will report the potential return amounts to take precaution before the product turns on stale. When the notification of ReAct arrives, the sales team will take actions in the related points, before stale products occur. By this way, the system will increase sales volume from stales. It is expected that amount of the return will decrease under the level of 1% from over the 2%. The studies also include alternative solution ways like “Date Identifying Color” and “New Shelf Design”. They support the objectives and purposes to reach the goal of “under 1 % return over the year”.

REFERENCES


