

# **A Methodology for Development of Market Share Analysis for Dutch Lady Milk Industries Dashboard**

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## **Abstract**

*Manual processing can be a totally complicated and thoughts numbing process. Data entry consists of transferring records from a physical kingdom into a digital state with other numerous techniques worried as nicely. In recent instances, in which technology is at an all-time high, there may be less and much less need for manual statistics access due to the fact the whole lot is being done through computer systems and superior era. The project aim is to develop a Data Mart and Market Share dashboard to help Dutch Lady to understand the trends and position at a single point of click. The first project objective is to identify the right attribute and factor to develop the dashboard, the second objective is to develop a data mart where to automate all the manual data extract, transform and load process, and the last objective is to create a dashboard to monitor the market share trends. This paper outline the methodology use in the development of Market Share Analysis for Dutch Lady Milk Industries Dashboard.*

*Keywords: Market Share, Competitors analysis, Dashboarding, Nielsen*

## **1.1 Introduction**

Dutch Lady Malaysia is Malaysia's leading dairy company with more than 50 years of history and more than 140 years of Dutch dairy heritage. Royal Frieslandcampina N.V, one of the largest dairy cooperatives based in the Netherlands. ("RFC"), as the company's ultimate holding company, Dutch Lady Malaysia has been seeking to further strengthen its position as a leading local dairy company. Headquartered in Petaling Jaya, Selangor, Dutch Lady Malaysia is the first milk company listed on the Kuala Lumpur Stock Exchange in Malaysia. Today, it continues to focus locally, maintain relevance and stay close to consumers, while benefiting from the size and scale of its membership as a global multinational organization. [1]

Data is important to Fast-Moving Consumer Goods (FMCG) manufacturers for many reasons. It allows businesses to accurately assess the performance of their products, understand how their products relate to competitors and the market more generally, and gives them insight into their channel, category and geographic region. It's hard to find a FMCG manufacturer that doesn't rely on data of any kind

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internal or external to inform at least some of their business decisions or gauge market opportunities.

Since Dutch Lady in lack of dashboard technologies to monitor its competitors, very hard to assume where is the gap we stand compare the competitors. And, the biggest issue is on creating manual reporting will take some time. This project will help Dutch Lady to create a dashboard to monitor the competitor and market share day by day, which can act and take decision faster.

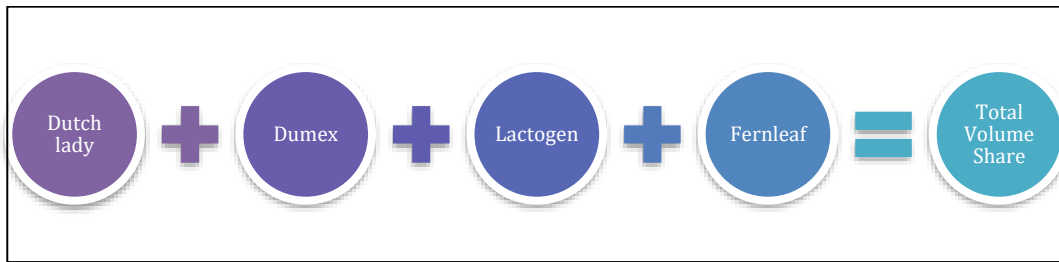
Since Dutch Lady Milk Industries do not have market share dashboard to monitor the shares between Dutch Lady and competitors, Marketing team having hard time to do all the manual process of data extract, transform and load in Microsoft Excel and only view the solid number of sales. It may cause delay on finding any sudden drop in market share compare competitors and without market share dashboard it is very difficult to monitor the pattern of competitors and to identify who is the real competitors that always take our market share in percentages. As a goal of the project would like to develop an automated dashboard that can monitors market shares. It may help Marketing team to do more other analysis on top of the result such as finding with region highly impacted, so they can act very fast.

This research represents the step in understand Dutch Lady competitor their strength and weakness by creating market share dashboard to monitor Dutch Lady current stand and other competitors. This project is focusing to achieve the following objectives

1. To identify factors and attributes that influencing competitors on the business pattern in the organization.
2. To create a data mart that can automate the manual data processing.
3. To design the dashboard that represent competitors' profile for Dutch Lady in monitoring their market share trends
4. To evaluate the proposed visualization solution and results.

## **2. Market Share**

There are many types in market share analysis it can be value by sales value or sales volume, to evaluate company value market share need to monitor total sales by the company divided by total segment in the market. For volume share must focus on the quantity of unit sales of the company and divided by the total unit for that segment for example for Dutch lady powder milk measure for volume share need to count total unit sales for powder milk and divided by total unit powder milk out in the market, that percentage will be the state which level we are in the market. Below figure is the example of market share calculation step by step. [17]



**Figure 1 : Market Share Calculation**

## 2.1 Market Share Factor

There are many factors in market that used to measure market share for this project have selected 5 major factors that highly contribute to make a good market share dashboard. Below is the selected factor for market share analysis:

1. **Average category prices** [4]. Several studies be aware how the growth in private label share tends to lead to a discount in costs, within the early stages of share growth from zero% to ten%. Some current studies show, but, that once personal label increase ends in better use of shelf space and a consequent reduction of Stock Keeping Units (SKU) of manufacturer brands, lower intra-emblem competition can lead to an increase in average class fees [5]
2. **Product category margins** [6]. It has been empirically proven that non-public label marketplace percentage increase yields a great improvement in retail margins and fashionable profitability of the product category;
3. **Assortment rationalization** [7] In the presence of private label market share increase a growth in manufacturer brand delisting has been cited, which can reduce the poor effect of purchaser store switching;
4. The “power” **relationships** between different brands [8] It is mentioned that the growth of personal label marketplace share tends to regulate the equilibrium of aggressive positions among manufacturers, mainly in product categories wherein there may be no clear manufacturer emblem leadership and where there may be inertia in both demand and supply;
5. Perception of store image and **store loyalty** [9]. Especially in which private label marketplace proportion is under 30–40%, there is an effective courting among increase of private label percentage and shop loyalty levels measured by way of share of pockets. These relationships but are neither linear nor uniform between special kinds of retailers or store formats.

As the above factor found for narrow down the dashboard focus, and it fulfill the second objective of this project.

## 2.2 Market Share Attribute

Attribute selection is very wide scope for dashboard selection, for this project will investigate Dutch lady market share data and do research on existing attribute that useful to measure market share. Below are the existing attributes that used to measure by marketing insight team in Dutch Lady:



**Figure 2 : Market Share Attributes**

**2.3 Existing Market share analysis**

As per Wei-Chang Lee, Shu-Yao Ho and Jong-Chen Chen, they have done Market Share with a Dynamic Evolutionary Simulation Model Paper for Taiwan telecommunication. This paper is investigating the problem of market percentage, humans first perform market discrimination after which propose a version to explain, analyze, evaluate, and predict it. Traditional approach is thru remark, questionnaire, and facts evaluation with statistic mechanisms. This is a static approach, which has its constraints and drawbacks in investigating problems in a dynamic environment. [3]

Wei Chang Lee do research dynamic marketplace proportion problem with mobile automate. The entire client surroundings are represented with a 2-dimensional grid. Our motive is to investigate the interactions among clients and markets. Each grid represents a consumer, whose conduct is determined by way of itself, other clients, and marketplace. Four constructs are considered, which includes remarks, interplay, static, and term (to be referred as FIST). Through real time computation and wealthy picture display and show exclusive outcomes with dynamic picture shows. Table below shows the result of the findings. [3]

| Company    | Time    |         |         |         |         |         |         |
|------------|---------|---------|---------|---------|---------|---------|---------|
|            | 2006Jul | 2007Jan | 2007Jul | 2008Jan | 2008Jul | 2009Jan | 2009Jul |
| Chunggha   | 40.2%   | 40.0%   | 39.5%   | 40.1%   | 42.2%   | 44.1%   | 46.8%   |
| Taiwan     | 22.0%   | 22.2%   | 22.3%   | 22.5%   | 22.1%   | 21.5%   | 21.0%   |
| FarEasTone | 20.0%   | 21.5%   | 22.1%   | 22.5%   | 22.0%   | 21.2%   | 19.3%   |
| KG         | 10.3%   | 10.0%   | 9.6%    | 9.1%    | 8.5%    | 7.9%    | 7.2%    |
| Mobitai    | 2.0%    | 1.8%    | 1.5%    | 1.3%    | 1.0%    | 0.8%    | 0.6%    |
| TransAsia  | 3%      | 3.3%    | 3.5%    | 3.8%    | 4.1%    | 4.5%    | 4.8%    |

**Table 1: Simulate Result of 6 Telecommunication**

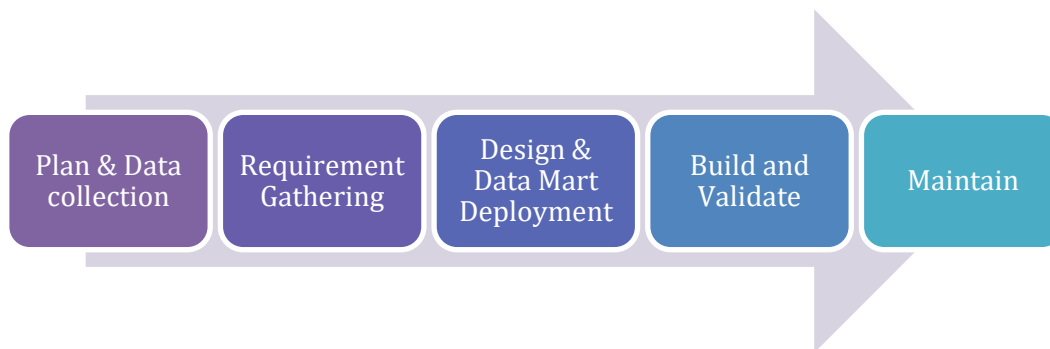
Wei Chang Lee is only focus on value share breakdown by company and there is has opportunity to focus on other factor and attributes that stated in early studies 2.1 and 2.2.

### 3.0 Project Methodology

Not so long ago a dashboard turned into something you used to measure an automobile. Now a dashboard is also something you operate to force a commercial enterprise. But like a car dashboard, a commercial BI dashboard that offers the wrong statistics, or supplies it in a difficult, non-intuitive way – that's a dashboard with the intention to get you into hassle. The key to creating a powerful superior dashboard is rooted in the technique of the system. Approach the dashboard introduction method systematically, appearing each of the following steps, and the result might be a dashboard that will help you steer your commercial enterprise to success. In this chapter we will focus on dashboard development frameworks and its phases.

#### 3.1 Project Activities

There are 5 phases of activities as shown in Figure 3 which are Plan, requirement gathering, design, build and validate and lastly maintenance.



**Figure 4: Project Development Methodology**

#### 3.1.1 Phase 1: Plan & Data Collection

##### 3.1.1.1 Plan

The making plans section is in which it all begins. Make sure to allocate enough time for your venture schedule to make sure this critical step isn't rushed. First, the assignment group participants need to be recognized, and their roles absolutely described. Who might be the government sponsor? What are the overall task goals? It's not uncommon for the number one users' executives or line of commercial enterprise managers to play a limited position within the dashboard improvement. Therefore, the group contributors must have got entry to and benefit insight into the wants and needs of this organization. In the making plans segment, crew members determine the scope of the task. What KPIs are vital to the number one customer? What facts is wanted to assist the KPIs and where is that information positioned? A dashboard is most beneficial if the metrics might be measured towards predefined conditions and thresholds. What are those conditions and thresholds? What is the timeline? If you're operating inside a good timeline, populating the dashboard is of extreme challenge. Take care no longer to underestimate the complexity of the databases in which the statistics resides.

### 3.1.1.2 Data Collection by Nielsen retail measurement services

Nielsen is a global leading research company offering comprehensive and timely information on market shares, competitive sales volumes and insights into distribution, pricing, merchandising and promotion. By combining detailed information with the professional consultative services, Nielsen offers actionable insights and expertise that help FMCG brands and retailers improve their manufacturing, marketing and sales decisions

#### 3.1.1.2.1 Data collection methods by Nielsen

There is two type of data collection scan data and manual audit. Below are the details on how to gather scan data and manual audit by shop type, frequency, methods and data collection attribute.

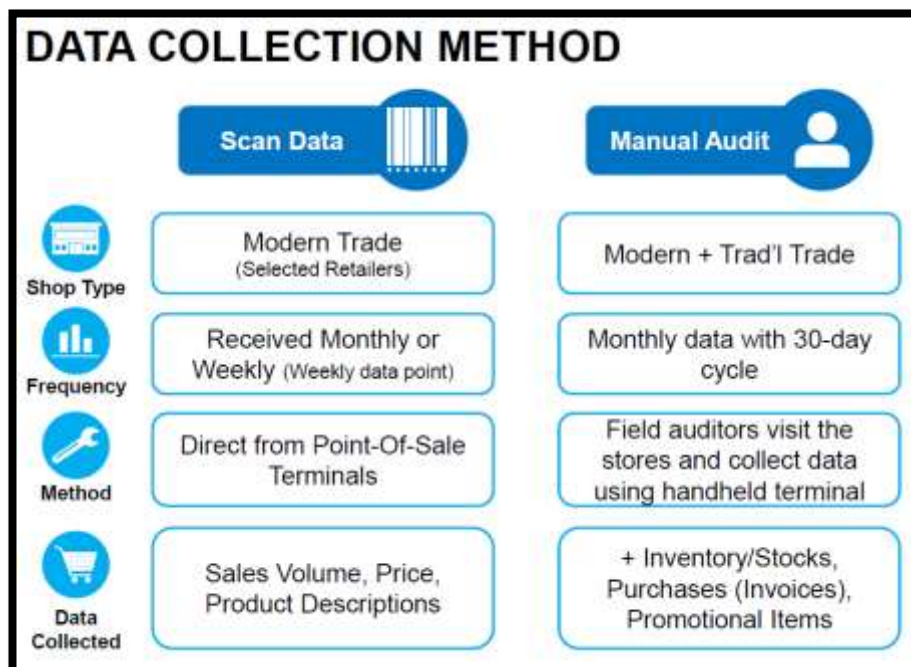


Figure 1: Data Collection Methods

#### 3.1.1.2.2 Focus universe or regional definition

For this project will focus on peninsular Malaysia which included Central, East Coast, South and North as the data provider is not cover Sabah and Sarawak.

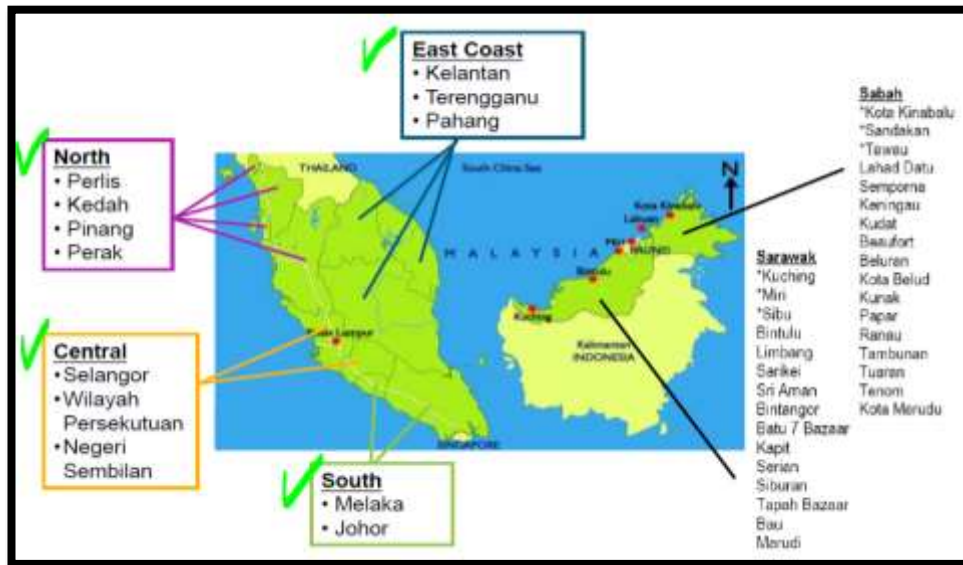


Figure 2: Regional Scope

### 3.1.2 Phase 2: Requirements Gathering

Once the scope of the dashboard venture has been defined and the plan is in location, the method of necessities accumulating begins. Interview the key stakeholders to determine their needs and expectations for the dashboard. To maintain the assignment inside scope, these desires and expectancies ought to map to the KPIs already diagnosed. Discuss the options to be had for dashboard presentation and functionality. A dashboard gives the consumer with several extraordinary approaches to graphically display the information. This is the time to cowl private preferences—top degree navigation, use of bar charts, gauges, etc.

### 3.1.3 Phase 3: Design and Data mart Deployment

Once the necessities for the content material and look of the dashboard had been agreed upon, main components of the layout should be completed.

- Refine the consumer interface and manage float
- Confirm the data sources for every fact's element
- Determine a way to “persist” data while historical trending facts is favored, however not available from the transaction database
- Define the queries needed to retrieve every information element
- Determine drill paths

#### 3.1.3.1 Data Mart Implementation Method

This process focuses on identifying and locating all required data sources, extracting the data, and loading it into the data mart. Where possible, the data will be loaded in its native (normalized) format at the lowest data granularity available. In general, the strategy is to load all available data from the identified sources and store it in the data mart without transformation. This ensures that the data remains consistent

with the source and the highest levels of detail are always available for current and future reporting requirements.

#### **3.1.3.1.1 Data Transformation and Modeling**

In this Process need to identify and implement the transformations that are required to shape the data to a format that can be consumed by Power BI to create the required reports and visualizations. This involves various stages of data preparation, staging and transformation to produce the required data models for Power BI. The transformed data will be stored separately and will not alter the original source data that is already loaded in the data mart.

#### **3.1.3.1.2 Database Design**

Microsoft SQL Server to implement the data mart. The design consists of a single database that will store the raw data extracted from the various data sources. Additional databases may be implemented to serve as departmental data marts for specific reporting or analytical purposes. For this data mart, we plan to model the data using a tabular model, which offers a relational modeling approach that makes it easier for both Power BI and other reporting tools to use. Modeling it using this approach is also more intuitive for developers and quicker to implement.

#### **3.1.3.1.3 Data Extraction**

Where available, historical data from 1 Jan 2017 will be extracted and loaded into the data mart. Subsequently, ETL jobs will be scheduled to load current data from the various sources into the data mart.

#### **3.1.3.2 Data Transformation**

Suggested SQL Server Integration Services (SSIS) as the primary tool to perform data transformations in the data mart. Depending on the requirements, this may be augmented using stored procedures or other scripts to complete the task. The SSIS packages will be scheduled to execute on a regular basis to provide up-to-date data transformations in the data mart. The diagram below illustrates the logical data flow and transformations taking place between the data sources, data mart, and Power BI.



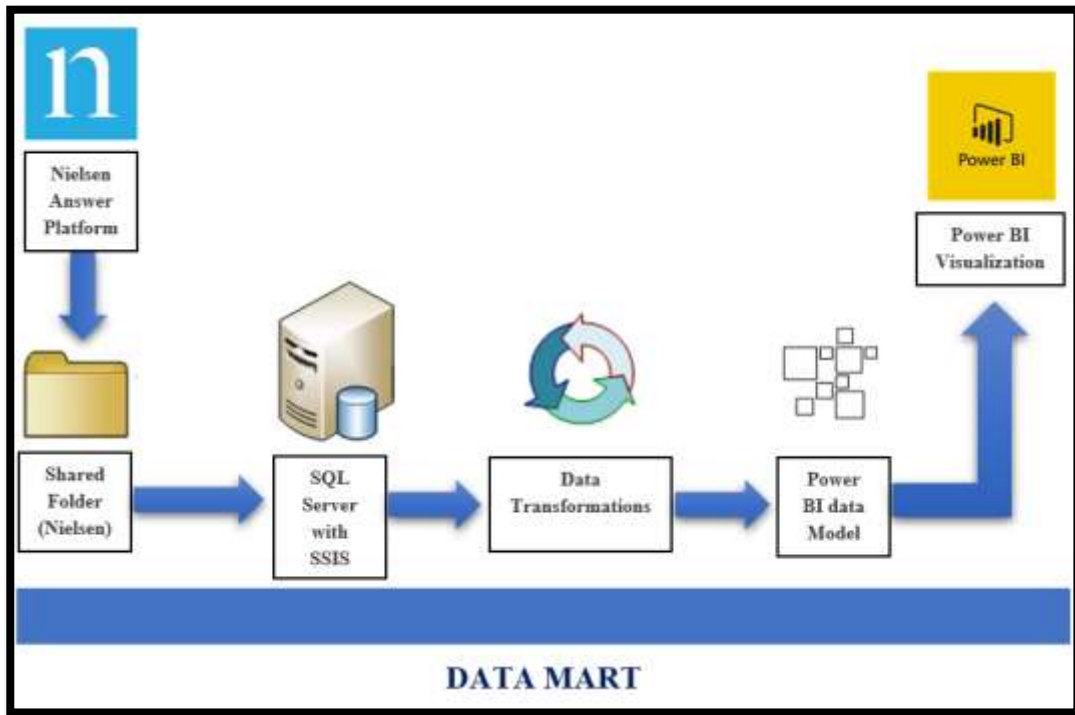


Diagram 1: Data Transformation Plan

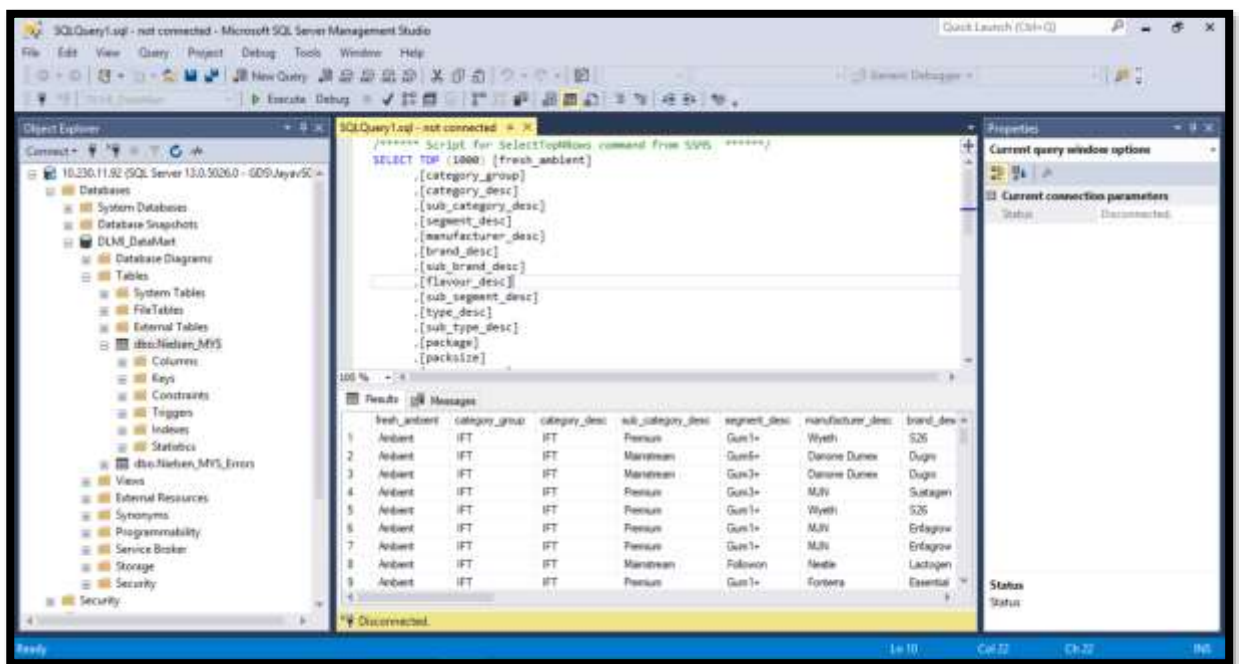


Figure 3: SQL Server Integration Services (SSIS)

Once the requirement is gathered in right manner and the stockholder agreed for the dashboard development. Some important information needs to gather, below is some key features before to start dashboard development.

- Agreed on pages for development and draw mock up.

- Confirm the data mart and data source.
- Define what are the historical trends is required and how long need to preserve the data.
- How frequent the data need to be upload?
- Agreed on determine drilldown levels

### **3.1.4 Phase 4: Build and Validate**

The real development starts at this stage of the project. Several tasks occur here, typically in parallel, closely coordinated with each other.

#### **3.1.4.1 Front End Implementation**

Create the dashboard user interface. Final person interface choices should be made. Personal choices had been discussed, however now's the time to evaluate what graph and chart kinds satisfactory represent the records to be displayed. In addition, make choices regarding grouping facts to provide the best visibility for pass-analysis. What visual signals, which includes color adjustments while values exceed expected thresholds, may be defined? Have a game plan in location for when these thresholds are handed. What kinds of “precis-element” alternatives can be furnished? What interactive drilling to other graphs or charts can be to be had?

#### **3.1.4.2 Query Implementation**

Create the queries to retrieve the vital data from the right databases. This step may be particularly complicated and time eating, especially if there are more than one fact resources for the numerous fact's factors in the dashboard. Even greater so, if the ones facts resources encompass custom designed agency packages for ERP, CRM, or SCM— programs that generally have complicated database schemas. Writing advanced SQL statements is a tough mission for even the professional programmer. Creating queries can easily take extra time than you may have allocated to this assignment

#### **3.1.4.3 Configure Scheduling, Refresh, and Security**

To ensure the content material of the dashboard is up to date, the queries created need to be configured to run often to deliver statistics to the dashboard. In addition, safety regulations must be carried out so as for the dashboard to display the suitable information for distinct customers. To limit the want for redundant management, the ones security regulations ought to take gain of security frameworks which are already being controlled.

#### **3.1.4.4 Dashboard Validation**

As with any software program assignment, while the attempt reaches “code complete,” it must be examined to make sure that it meets the necessities and specifications mentioned within the task plan. Some of this validation can be completed independently by using the technical team. Other components, especially making sure that the information is accurate, must be carried out via the number one users of the dashboard or their representatives

### 3.1.5 Phase 5: Maintain

With the dashboard in production or “live,” steps want to be taken to offer for ongoing upkeep. Over time, requirements and expectancies for the dashboard will exchange. The dashboard solution needs to be flexible and open to allow for such inevitable enhancement requests. If the dashboard became carried out by using a seller or answer issuer, expertise transfer to the client for ongoing maintenance is crucial. To limit reliance on external resources, equipment to promote self-sufficiency are useful.

## 5. Conclusion

Data is the center of attraction in any field as a FMCG industries it's very important to monitor market share and monitor the competitors as well, in this paper have discuss about what is market share, why market share is important for FMCG industries also how the data collection and the retail scope of focus also have develop a data mart for dashboard backend data automation by using SQL Server integrated service and choose PowerBI as dashboard development tools.

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