

# Solution Concept of TESLA

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## *Contents*

Overview .....	3
Business Background .....	3
Benefits .....	4
Requirements .....	5
Business Requirements .....	5
Technical requirements .....	7
Solution Sketch.....	9
Source Tables Structure .....	9
Star Scheme .....	11
Physical Diagram.....	11
Logical Diagram .....	12
Snowflake Scheme .....	13
Physical Diagram.....	13
Logical Diagram .....	14

# Overview

## *Business Background*

Automotive company Tesla was founded in 2003 by a group of engineers who wanted to prove that people didn't need to compromise to drive electric – that electric vehicles can be better, quicker and more fun to drive than gasoline cars. Today, Tesla builds not only all-electric vehicles but also infinitely scalable clean energy generation and storage products. Tesla believes the faster the world stops relying on fossil fuels and moves towards a zero-emission future, the better.

Today's Tesla offers cars around over the world. The idea of future policy is to take overview and control not only all cars sales, but also clients needs and dealers in different countries. As well Tesla keeps eyes on their clients and would like to perform cars as well increase sales. Tesla has only 4 Models. Each of them can have their own modification, like Tesla Model S Plaid or Tesla Model 3 Performance.

- Model S
  - Long Range: AWD, 405 miles, 0-60mph in 3.1 seconds
  - Plaid: AWD, 390 miles, 0-60mph in 1.9s
- Model 3
  - Standard Range Plus: RWD, 263 miles, 0-60mph in 5.3 seconds, partial premium interior
  - Long Range: AWD, 353 miles, 0-60mph in 4.2s, premium interior
  - Performance: AWD, 315 miles, 0-60mph in 3.1s, premium interior
- Model X
  - Long Range: AWD, 360 miles, 0-62mph in 3.8 seconds

- Plaid: AWD, 340 miles, 0-62mph in 2.5s
- Model Y
  - Long Range: AWD, 326 miles, 0-60mph in 4.8s
  - Performance: AWD, 303 miles, 0-60mph in 3.5s

To realise pattern of worldwide distribution one's can be a great help – DWH storage.

## *Benefits*

The next benefits could be received by creating OLAP solution:

- Data models are mainly used to support the design and implementation of information systems and as an information management tool for the determination of information supply and demand as well as for the structuring and documentation of operational contexts.
- Multidimensional data models were designed for the special requirements of management support systems. They should represent the data as much as possible as they are seen by the users in reality.
- The access to the data takes place in an intuitive form, which no longer requires the formulation of complex queries with special languages.
- OLAP models can be scaled within the existing system to expand the interest of analytical data processing.

# Requirements

## *Business Requirements*

Next questions providing idea of Business Requirements for Tesla

Who uses the application?

What problems should be solved?

What data does the application need and in what degree of detail?

How should the data be structured?

How does the user work with the application?

Which interfaces are needed?

Will future changes be needed?

The Companies vehicle types are regularly examined as part of a financial analysis. The business key figures sales, contribution to cover and operating profit are examined in relation to each individual vehicle type and to the total quantity sold of this type. In this regard, the paragraph refers only to the dealers and does not contain any data on deliveries to end customers. Thus, the above financial data also refers only to the dealer network. Furthermore, the financial data are compared with each other, so that the shares of the contribution margin and the operating result in sales are identified can.

The vehicle types are also analysed from a market perspective. Here, the market volume of each type is considered as the relevant variable. In general, market volume differs from sales, as it refers to the end customer. For example, the market volume may be higher than the sales volume due to stock sales by dealers. Of course, it is also possible that sales are higher

than market volume. In that case, the dealers could not sell all the vehicles purchased from the factory to the end customer and have to increase their stock. A differentiated view is therefore necessary. If the market volume is put in relation to the total market volume, the market share of a vehicle type can be determined. By comparing the individual market volumes of a type in different countries, the country mix of a vehicle type can also be determined

The analysis of the above deviations will allow the formation of a market supply able to meet the demand in the region. Thus, an objective Task in the implementation of the platform becomes the reduction of the final costs of vehicle storage and sales. This will ultimately have a positive impact on the company's balance sheet.

Ultimately the implementation will not only affect the current situation, but also allow for analysis and forecasting of future performance by region.

The time dimension will allow demand to be shaped on the basis of seasonal variations. Thus, the main task of time variable analysis becomes the consolidation of yearly, quarterly and monthly data in the regions.

## Technical requirements

One's important think is TR. We will construct table to pin key points for DWH creating.

#	Action	Description
1	Availability - 24/7/365	Because main Idea is to build DWH to be accessed from multiple countries – need to perform availability. In this stage availability is accessibility from any time zone.
2	Historical Date	To start making prognoses and predictions faster, you need to collect as much data as possible. Thus, historical data from regions can help in building this part. It is clear that if historical data is not available or available, we will collect and store it for a long time.
3	High performance	In a large data warehouse, it is necessary to create all conditions for fast data access. Thus, it is necessary to provide high-speed two-way communication. Probably using patterns to provide access to the most popular queries.
4	All the information must be protected according to the company's security Policy	Obliviously, data will be protected according to company rules.
5	Adjust granuality	Determine the desired level of detail, balancing the business needs and the performance and cost implications
6	Scaliability	There's no question that by creating OLAP system -

		volume of data stored in the storage increasly fast scaling. At this way one of the biggest part is creating conditions of scaleability basis.
7	Data Backuping	Every week backup as well store incremental cloud backups

#### Basic Implementation:

Recreating DWH will be a big helpful by collecting information from all over departments that basically differentiated by Region, Time Zone and Local storages to provide reports for future expansion and at market influence.



## Solution Sketch

### *Source Tables Structure*

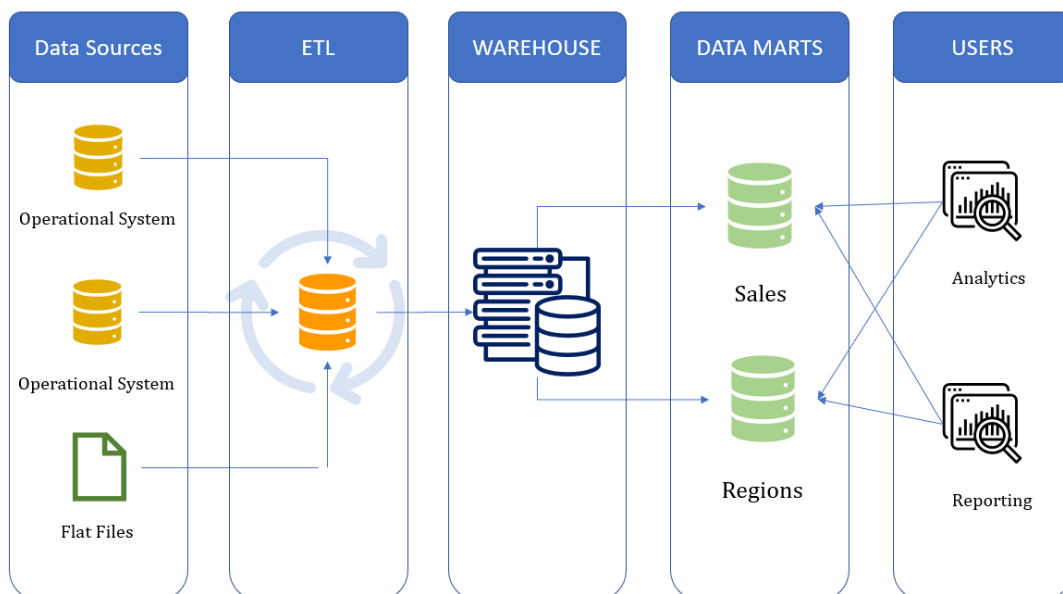
Name	Products
Abbreviation	DIM_PRODUCTS
Unit of measurement	Unique Model and additional modifications
Status	Up to date
Description	Products include actual model lineup and order availability
Data origin	Collected from operational systems of the brands
Update	Of necessity

Name	Customers
Abbreviation	DIM_CUSTOMERS
Unit of measurement	One client
Status	Up to date
Description	Each customers include first and last name, contact details, purchase details (product, bill, city / region), date
Data origin	Collected from operational systems of the brands as well flat files
Update	Every day at 12 p.m.

Name	Regions
Abbreviation	DIM_REGIONS
Unit of measurement	-
Status	Up to date
Description	Regions table describes each for delivery available end point.
Data origin	Collected from operational systems of the brands as well flat files
Update	Each new distribution center filled in the dimension

Name	Calendar
Abbreviation	DIM_TIME
Unit of measurement	DateTime format
Status	Date
Description	Calendar is used for interaction between other Dimensions. Includes Day, Month, Quartile, Years, Hours, Minutes. Possible interaction with dimension scalability
Data origin	-
Update	Yearly

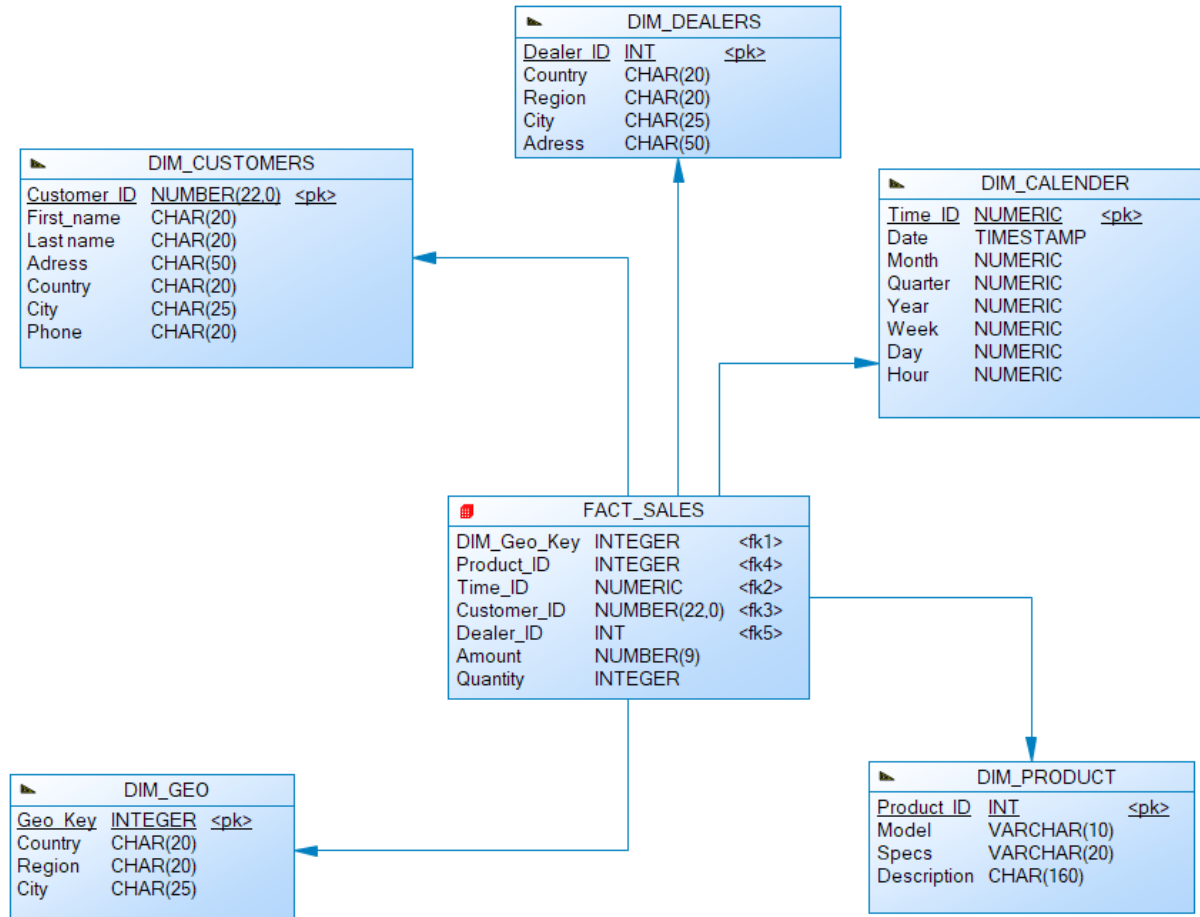
Name	Dealers
Abbreviation	DIM_DEALERS
Unit of measurement	-
Status	Date
Description	Contains information about Local Offices
Data origin	-
Update	Up to Date



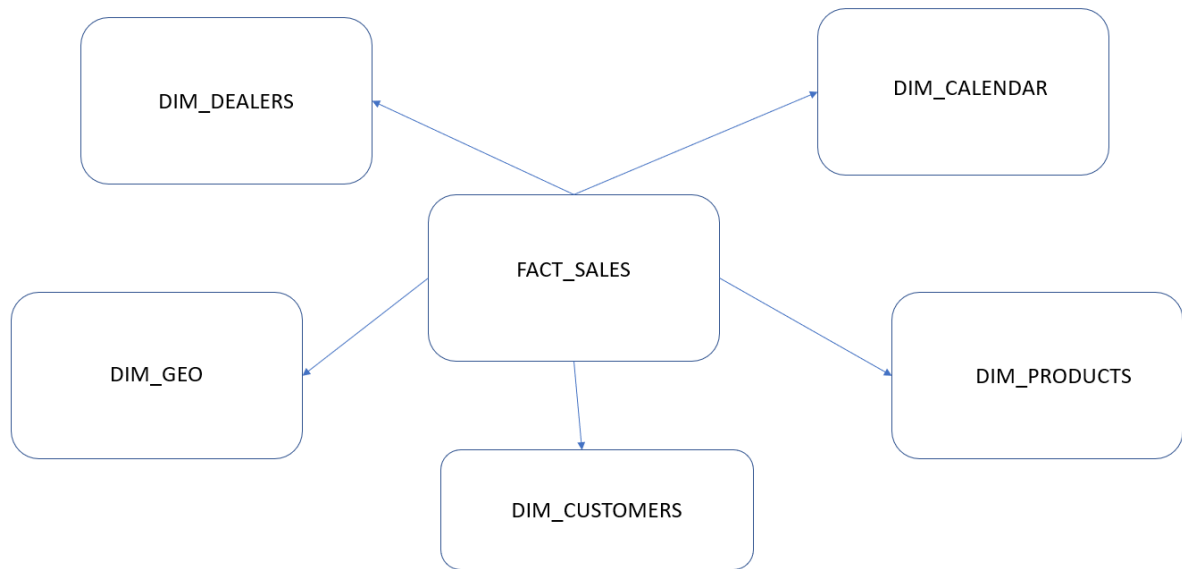
*Conception Design*

# Star Scheme

## Physical Diagram

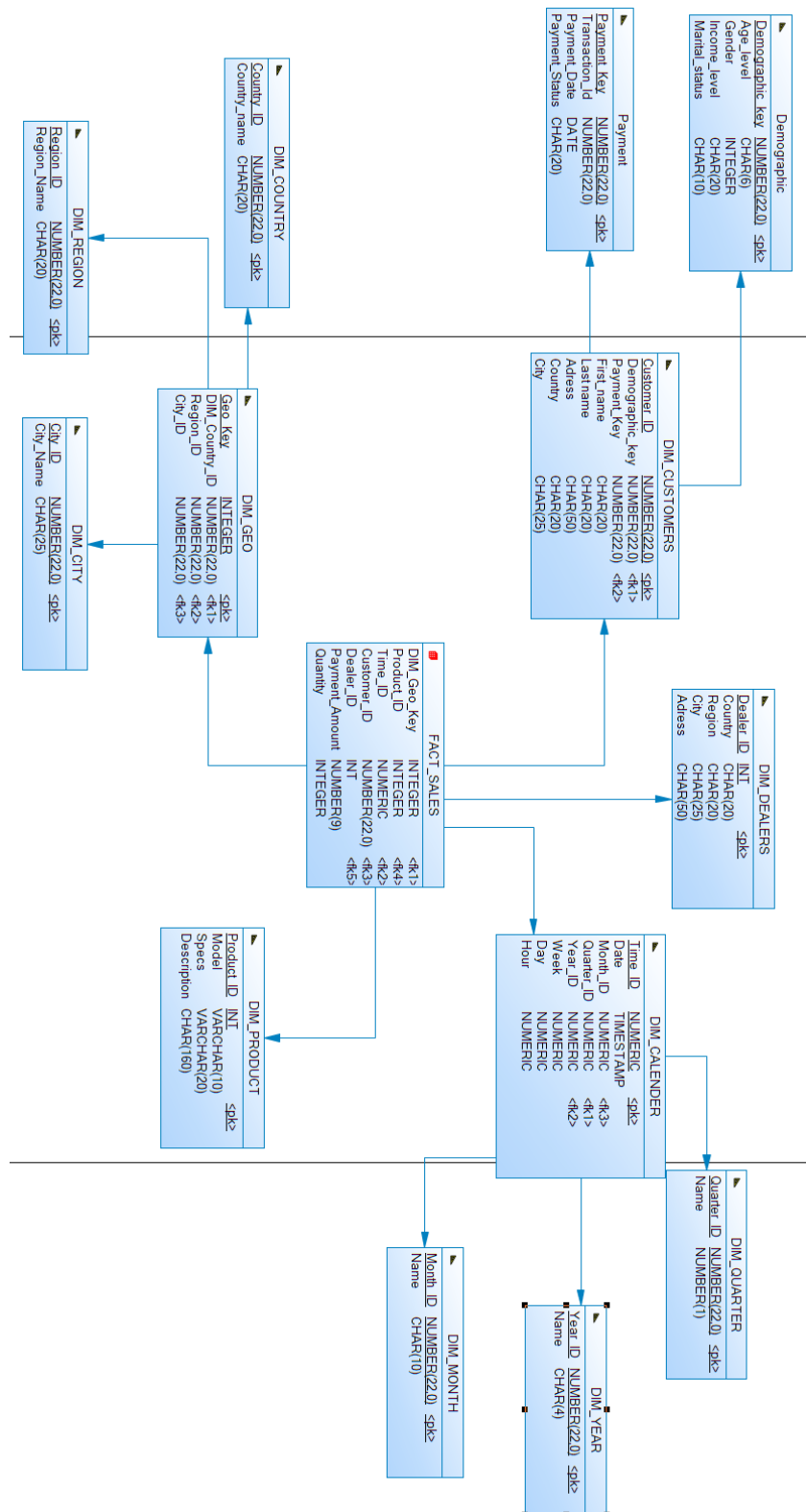


## Logical Diagram



# Snowflake Scheme

## Physical Diagram



## Logical Diagram

