# 6. Conclusion

This coursework has provided an overall view on the steps that must be follow to implement a data warehouse system in a University environment. More details about the business; the type of management; its objectives, values and missions; and detailed description about the Marketing Department is discussed on the first chapter.

Entity Relationship Diagram is displayed and described in detail on the following chapter. In additional there is a couple of paragraphs comparing the advantages and disadvantages of the ERD and the Data Warehouse systems.

3.

Data mart design

Subject and identification

Star schema

Granularity

Snowflake schema

…

In conclusion, Data Warehouse systems store and manage current and historical data over the time, therefore accumulative data cannot be modified easily. To keep system update and running the ELT tasks must be measured and applied as one of the most crucial procedure. For this reason Warehouse system implements single dimension table as a Slowly Changing Dimension (SCD) that differentiates in three types:

* Type 1SCD- Overwriting.

This type is set by default once dimension is created. When changes must be applied to the stored data the old data overwrites with new data. Thus the existing data is lost.

* Type 2SCD- Creates another dimension record.

This type preserves full history once the value of certain attribute is changed. Automatically portions history in the fact table. Each record contains real time and expiration time to identify timeframe of record activity. Dimension table grows over the time and not allow connection of the new attribute value with old fact history & vice-versa.

* Type 3SCD- Creates current value field.

This type stores previous value and current value of the changed attribute by adding an extra field in dimension; therefore he current value is stored as the old value and the new value becomes the current value. This type suitable to predict future changes but waste lot of space (Oracle 2014).

The cost involved in Data marts are expensive for companies to maintain and the information consistency over time allowing these companies to gather intelligence (business needs) means that these cost will be incurred and that the data marts will have to be maintained.

During the years of using the data warehouse, it might have data duplication and referential integrity within the data marts, which could increase the cost to maintain it. These costs are the down side to most companies and can be overcome only by intelligently approaching the problem.

There are solutions for these issues and they will continue to be work on and many to date do actually now consolidate there performance loading, compression, backups encryption and the utilisation of guidelines and principals for users like quality of services and other resources shared by management for there databases.

The biggest problem facing Data Warehouses (DWs) is the exponentially growing of data over the time, thus data processing became more time consuming procedure. On the other hand DWs is enterprise driven environment, and application end users requires advance training to get familiar and skilled with available technology (Al-Debei, 2011). The constantly growing data effects system vulnerability, such as the data leaks and data security, thus requires advance system monitoring and maintaining.

Al-Debei, M.M., 2011. Data Warehouse as a Backbone for Business Intelligence: Issues and Challenges. *European Journal of Economics, Finance & Administrative Sciences*, (33), pp.153–166. Available at: http://ezproxy.lib.swin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=67737744&site=ehost-live&scope=site.

Oracle, 2014. Database Data Warehousing Guide. *Oracle Database Online Documentation*. Available at: http://docs.oracle.com/cd/B19306\_01/server.102/b14223/extract.htm [Accessed January 19, 2015].