## Week 2 -Data Warehousing, Data Mart and Business Analytics

**Canvas Link:** <https://ucsc-extension.instructure.com/courses/638/discussion_topics/1758>

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Business Analysts in industries have been using the (OLTP) transactions data, enterprise data, third-party market research data, and survey data they have in their Data Warehouse or Data Marts for many years, to generate various business reports that present past sales, profit margins, market penetration, distribution, resources used and operational expenses to the business owners. Projections, business plans and decisions are made manually with collaboration and intuition based on business experience. This has been considered the most trusted and established business analytics practices, as the analytics is based on factual and measured enterprise data.

Key business transformations that are needed of an enterprise can be determined by doing a new business requirements analysis, process gap analysis, evaluating the pros and cons between current Analytics processes and what is possible with the new Big Data and Data Analytics strategies.

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| **Traditional BI and Analytics** | **New BI using Big Data and Data Analytics** |
| **Manual activity and Resource Intensive**: Data gathering, DW/DM analysis, market research, surveys, report generation, intuition and experience based business decisions are all manual, it requires resources dedicated for each stage of this BI and Analytics process.**😞** | **Automated Big Data and Analytics Pipeline:** Big Data technology has conceived the complete end-to-end architecture and process to build a Big Data and Data Analytics pipeline. There are many companies offering Data Analytics Workbench to facilitate a “Data Artisan” to extract value and generate insights from data, by constructing mostly automated the whole Data Analytics pipeline. If the Big Data framework is in place, then the Data Analytics pipeline resource requirements are less compared to the manual and traditional approach. **😎** |
| **Current Culture (Big Data ignored)**: Decision-making is mostly driven by intuition based on business experience. Analytics alone cannot completely replace this intuition based decision-making culture. Lot of Big Data is ignored and the culture is not aware of “Art of Possible” with Big Data Analytics. **😞** | **New Culture (Art of Possible)**: The best way to bring in Data Analytics culture in an enterprise is to convince the top brass, and educate them about the values and insights Analytics can bring in, and help reduce costs, improve bottom line and manage risks. Also convince using “Art of Possible”, and how Big Data that is currently getting ignored is valuable for some amazing insights. **😎** |
| **Existing Talent**: Businesses have been extracting business intelligence from systems of record, that include transactions data. The conception is advance skills are required for Big Data based Data Analytics implementation. Businesses need to hire more Big Data Analysts and Artisans. **😞** | **New Talent**: With new Business Analytics tools that can leverage Big Data and provide a workbench to a Data Artisan, reduces the need to hire new talent and reduces the resources needed to do the traditional business analysis as well as new Big Data analytics. **😎** |
| **Cost, Accountability and Hype**: Bringing in enterprise-wide Data Warehouse driven analytics and decision-making pipelines and processes, can be expensive as it not proven to be 100% effective and correct, and when it is not effective/correct there is no clear accountability. **😞** | **Cost, Accountability and Hype:** Goal of the implementors should be to not fail in early adoption stages and demonstrate success in the new insights Big Data and Analytics bring to an organization. Also define the probability of success of the predictions or insights provided by Big Data. The organization and the sponsors of these programs need to be assured that Data Analytics does not completely take away decision-making by experienced business executives, instead now their decisions are data-driven. **😎** |

**Incremental Approach:** Data Mart or implementing pilot projects to implement a few data analytics use-cases at department, unit or functional group level and seeing the value it brings, and incrementally adding more integrated data analytics steps towards an enterprise-wide coverage on insights needed for the business to succeed in the market place.

**Big Data Tools**: Evaluate and adopt the needed Big Data and Data Analytics tools, and grow adoption enterprise-wide using the Ralph Kimball methodology of taking the bottom-up approach of building on the departmental/dimensional data marts.

**Identify Big Data Sources** to build and enhance the Data Warehouse and Data Marts. This process includes defining the ETL flow to merge and enhance the traditional warehouse data with Big Data, so the Data Analysis can be done more effectively to generate new insights that were not possible before.

**Define Business Requirements** and possible business insights desired by an organization to succeed in a market place. Tailor the Big Data processing pipelines and tools to extract those insights from the Big Data. Use compelling visualization tools to humanize Big Data, and help support business decision-making.

### References

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* Alakh K. Verma (Jan 2013). Harnessing Collective Intelligence in Decision Making through Big Data Analytics
* Bloomberg and SAS (Sept 2011): The Current State of Business Analytics: Where Do We Go From Here?
* TechAmerica Foundation (Oct 2012). Demystifying Big Data -Tech America big data report
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