Why Data warehouse & Business Intelligence at Universidad Simon Bolivar?

¿Por qué Data Warehouse e Inteligencia De negocio en la Universidad Simón Bolívar?

Keywords: Data warehouse, Business Intelligence, analysis, Queries, decisions, reporting.

Abstract
The data warehouse is supposed to provide storage, functionality and responsiveness to queries beyond the capabilities of today’s transaction databases. Also Data warehouse is built to improve the data access performance of databases.

Palabras clave: Almacén de datos, inteligencia de negocios, análisis, preguntas, decisiones, presentación de informes.

Resumen
Los almacenes de datos se supone que proporcionan almacenamiento, funcionalidad y capacidad de repuesta a las consultas y análisis más eficiente que las bases de datos transaccionales. También el almacén de datos se construye para mejorar el rendimiento de acceso a los datos.
Data warehousing also is a main component in companies seeking a merger. Data integration, or Data Information Integration, basically provides a unified form of data visible to everyone on one database. The data in this newly united warehouse once came from two different databases, and can now be accessed through the same data mart. This is usually used when two companies must merge their databases, for an all around view of how both companies will work together, saving both time and money. By using business intelligence applications the business can make better more structured decisions based on solid facts. While not all data warehouses require business intelligence solutions, many do. It is in the company’s or business’s interest, to invest in both data warehousing, and business intelligence solutions.

A. Definition

A data warehouse is a central repository for all or significant parts of the data that an enterprise's various business systems collect. The term was coined by W. H. Inmon. IBM sometimes uses the term “information warehouse.

A warehouse is a subject-oriented, integrated, time-variant and non-volatile collection of data in support of management's decision making process as first defined by Bill Inmon in Building the data warehouse 4th edition Wiley 1990.

So what do these fancy terms mean in the above definition: Subject-oriented Data that gives information about a particular subject or topic or entity e.g. Customer, Supplier, Location.

• Integrated-Data that is gathered from a variety of sources and merged into a consistent whole.

• Time-Variant- Data is identified with a particular time period. Non-Volatile - Data is added but data is never removed. This enables management to gain a consistent picture of the business over the time period of interest. It is a database designed to support decision making in an organization.

Data from the production databases (e.g. Order processing) is selectively copied to the data warehouse so that queries can be performed without disturbing the performance or the stability of the production systems

• Business Intelligence (BI) is a set of technologies and processes that help decision makers use data to understand and analyze organizational performance. BI is the use of fact-based management to drive decisions and actions. It is About BI getting the right information to the right people at the right time to support decision-making and organizational effectiveness. BI is a broad term that encompasses what we have referred to as the decision support environment, including the data warehouse, reporting, data mining and analytics.

II. Why Business Intelligence at Simon Bolivar?

Now more than ever, the decisions we make at the University need to be rooted in data. The costs of many of the resources needed to sustain the University are escalating. State appropriations are unlikely to rebound significantly. We must look for ways to continue to advance the excellence of the University at lower cost. Meeting this challenge requires us to innovate and develop strategies to improve efficiency and productivity.

The BI initiative can help by providing decision makers at all levels of the University with relevant, accurate, and consistent data as well as the tools and
skills to analyze them. Examples of ways in which BI can be useful include: monitoring and predicting enrollment to inform course scheduling and support, and analyzing unit spending by category or item to improve allocation of resources. Most importantly, BI ensures that University faculty and staff have accurate and consistent data to make the best possible decisions.

A. Goals of the BI Initiative at Universidad Simon Bolivar

BI has the potential to revolutionize the way business is done at Universidad Simon Bolivar by:

- Transforming data into information that empowers decision-makers at all levels.
- Deploying state-of-the art tools to access and manipulate data. Encouraging a fact-based, data-driven approach to decision making.
- Orienting behaviors and processes toward the University’s strategic goals.

Business Intelligence will allow us to:

- Integrate information horizontally across applications, campuses, and external partners
- Report information consistently through all levels, from executive to operational
- Provide role-specific information for key decision making. Benchmark against other institutions and organizations. Host a shared, common source for institutional data
- Technology, Empowering People, includes two specific action statements for improving access to and use of administrative data for decision-making activities throughout the University:
  - Business Intelligence, when properly implemented and used, delivers many benefits.

Some of the key advantages include:

- Alignment of an organization around its strategic goals. Articulate strategy, set measurable objectives, monitors performance against those objectives, and then makes informed decisions that support the desired outcome.
- Quicker, fact-based decision making. When analytical data is readily available and understandable, employees at all levels can more easily act in ways that improve performance and support the overall strategy of the organization.
- Reliable presentation of information (‘one version of the truth’). Having all enterprise data integrated and with clear, easily accessible definitions will allow users to spend less time finding and figuring out the data and more time analyzing and making informed decisions based on the data.
- Competitive advantage and cost savings. The incentives for colleges Simon Bolivar to measure, demonstrate, and improve performance are escalating. BI offerings have the potential to support previously unattainable levels of measurement, comparison, and institutional interventions to improve access, affordability, and success for students.

B. Examples

All functional areas and business processes can be enhanced including:

- Research
- Teaching
- Human resources
- Space utilization
- Budget and finance
- Time management
- Recruitment
- Alumni relations
- Fundraising and development
- Communications and marketing
- Government relations

Admissions

BI can positively impact all campuses, all departments, and all areas of responsibility, from deans to directors, analysts to administrators, and staff to support personnel.

All departments and schools have ad-hoc questions to be answered through data analysis. For example, the School of Nursing sometimes needs to combine student data, administration data, research data, and practice plan data in order to provide the needed...
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The concept of BI is complex, new to many and is constantly evolving as BI becomes more pervasive in Higher Ed. We are planning a variety of educational opportunities to those involved in this initiative from both technical and functional areas.

Demonstrate the value of Business Intelligence Simon Bolivar Universidad and develop the infrastructure and expertise upon which to base future projects.

C. Functional Projects

1. Student Enrollment Management

Simon Bolivar continually faces new challenges in enrollment management as we strive to:

Offer the right courses at the right time to maximize enrollment, and insure that students are able to enroll in the classes they need to satisfy their degree requirements in a reasonable timeframe.

Enhancing the ability to accomplish this will have a positive impact on retention, graduation rates, student satisfaction, tuition revenue, recruitment and more.

Simon Bolivar Universidad currently do not have the enterprise-wide information and reporting tools needed to sustain improvement in this vital arena.

The primary objective of this project is to provide academic units with integrated information and a variety of powerful tools which will empower enrollment managers and enable them to make the sound, expedient decisions needed to optimize enrollment management.

Information is being downloaded in multiple areas, logic may not be consistent across areas and significant time is spent reconciling reports.

The primary deliverables of this project would include a centrally located single source for information based on consensus logic as well as a set of tools and reports that can be used by all campuses and departments to analyze, present and distribute the admissions information needed to support operations, external reporting, decision making and executive reporting.

2. Student Retention

The importance of Student Retention must be very important at Simon Bolivar Universidad student satisfaction, alumni giving, tuition revenue, course management, national rankings, etc. The offices of the focus of this project is to provide a set of BI tools to set on top of this data set that would make the information accessible to a broader range of users and also improve the consistency of analysis. The end user will greatly benefit by having a sophisticated analysis tool, an interactive dashboard, drill downs into various populations, and devising comparison groups and consistent research approaches.

III. CONCLUSION

At present there is very little or no information, whether any University in Colombia has implemented such project. However, such projects have been taken up abroad (Berkley University of California USA, National University of Singapore etc.). If completed it can be one of its type in the country.

IV. REFERENCES


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