

Data Warehousing for Business Intelligence

Course 4: Business Intelligence Concepts, Tools, and Applications

Module 5 Bonus Materials

Lesson 1 BI Maturity

See Hagerty and Hostmann, 2010 *IT Score Overview for Business Intelligence and Performance Management*. Gartner, Inc. Available at: <http://www.gartner.com/id=1433813> for more details for various levels of BI maturity.

Excerpt below are from the above source:

“...As suggested in the title, Gartner’s Maturity Model for BI and performance management assesses both the BI maturity and performance management maturity. Gartner uses this model for evaluating general business maturity and the maturity of individual departments or business units. Results showed that many companies have their departments at different levels of maturity. The model can help identify these bottlenecks, encourage discussions between departments and thus help improve the general maturity level as well as the maturity level of individual departments and/or business units.

The main areas of evaluation are people, skills, processes, and technologies. Subareas include ad hoc, query, reporting, OLAP, data integration, data warehouse, analytical applications, such as customer service analytics, and performance management applications. The model discusses trust of information, adaptability to a changing business environment, and Integration of external users of BI such as suppliers, business partners, and customer.

There are challenges to pervasive BI. These are

- (1) the time, cost, and complexity to choose, acquire, and implement BI tools,
- (2) the time and cost of training and supporting users, and
- (3) a related problem is that many users find the tools difficult to use, and require considerable training and support, not only on the tool, but also on the underlying data and how the tool can be used in their jobs....”

According to Watson, H.J., and Wixom B. H. (2007), the following are critical success factor to move to higher levels of BI Maturity:

- “Senior management perceives and treats BI as a strategic resource. Senior management believes that BI is important to organizational success and funds it accordingly.
- There is alignment between the business and BI. BI is an important enabler of the business strategy. Senior management has a vision that it communicates about how BI can support the business.
- BI delivers high business value. The returns on the investment in BI are much greater than the costs.
- A culture of information-based decision making exists. Decisions are driven by the numbers. This approach is in contrast to intuitive decision making or decision making based on gut feelings.
- BI governance is effective. There are people, committees, and processes in place to ensure that all aspects of BI, ranging from strategic alignment with the business strategy to the establishment of common data definitions, are handled effectively.
- The enterprise wide data infrastructure is effective. The enterprise data warehouse contains most of the data needed to support decision making throughout the organization. Data structures

support ad hoc analyses and the rapid development of new applications. This is in contrast to Excel-based spreadsheets.

- Data quality is high. There is a single version of the truth, and people and processes are in place to ensure and enhance the quality of the data.
- The production and development environment is stable. There are people and processes in place both for operating the existing warehouse and for developing it.
- There is widespread use of BI. BI is pervasive throughout the organization. This does not mean that everyone is performing analyses, but that BI is involved or integrated (perhaps seamlessly) **into most people's jobs.**
- The BI staff and users work together closely. The BI staff works hand-in-hand with users and understands their information needs. Users are able to access and use the BI and data resources that are available. There may be BI centers of excellence. As we will see, this is especially important in coming up with requirements for dashboards and reports.
- People, tools, data, and methodologies are available to support rapid application development. This includes rapid prototyping tools and agile development methodologies, configurable packaged applications, and flexible, intuitive query and reporting tools.
- A strong portfolio of business-driven BI applications exists. Rather than simply reporting or trying to understand what has already occurred, data is analyzed to predict what will happen in the future? Real-time data and analytics are used to influence current decision making and operations, often through rules and event-driven triggers and alerts. Business performance management systems are in place....”

Scalability

The technology is emerging to support (1) much more data, (2) many more users, and (3) much more complex queries. Advancements in hardware and database software are continuing to affect the scalability of BI; that is, **BI's ability to handle larger amounts of data, more concurrent users, and more complex queries, without a degradation of system performance.** Some companies now store upwards of a petabyte of data in their warehouses (e.g., Walmart) and support thousands of users. Because of increases in scalability, companies can bring BI to more users and allow them to analyze large amounts of data in new, powerful ways.

There are a variety of possible solutions for these problems.

- *The use of open-source BI software can reduce the cost of BI software and decrease the time required for software selection and implementation.*
- *Customized, Web-based applications can be developed that address the ease-of-use challenge.*
- *Interactive dashboards and scorecards resonate with users and require little or no training.*
- *The use of Microsoft Office, and especially Excel, provides users with a familiar interface at a relatively low price.*
- *Designing business processes with BI embedded in them (e.g., business activity monitoring (BAM) dashboards, alerts) makes BI part of the work system.*

BI software vendors are making progress on making their products easier to use. These efforts are following a variety of paths, and one of the most interesting is to provide a Google-like search capability. This capability addresses a common problem that users have -- finding relevant BI information. This information can include unstructured (e.g., documents) as well as structured (e.g., dashboards) data.



Source MicroStrategy

In today's highly competitive environment, where companies need ready-to-deploy, powerful solutions to incorporate BI into their enterprise portals, MicroStrategy's pre-built portlets assure seamless integration with corporate portals, such as IBM WebSphere®, Microsoft® Office SharePoint®, Oracle™ WebLogic®, SAP® NetWeaver, Liferay Portal, and DotNetNuke Web Content Management Systems. MicroStrategy-enriched portals enable users to have access to all 5 Styles of BI: enterprise reporting, dashboards and scorecards, ad hoc query and OLAP analysis, advanced analysis and data mining, and alerting and report delivery. Through portals, all of MicroStrategy's BI functionality, including intuitive drag-and-drop and context-sensitive right-click menu capabilities, transparently carry through and express themselves in these widely adopted corporate portals, while leveraging the collaborative and personalization capabilities of the portal.

Differentiator – Dashboards Embedded in Office and Email

The best in class approach:

- Allow dashboards to be embedded in the body of an email, or embedded within a PowerPoint, Word, or Excel document.
- Which Is Important Because: Offline analysis with interactive dashboards is possible.

Other alternatives in the market are:

- Only URLs to Web-based dashboards can be emailed.
- Dashboards can be emailed only as part of an email attachment.
- Only static, non-interactive dashboards can be embedded in a Microsoft Office document.

Which are less optimal because:

- It is much easier for end users to see and interact with dashboards within context, in the email or Word document, instead of having to open up another interface to view the dashboard.
- If interactive dashboards cannot be embedded in an email or Office document, then offline analysis is not possible.

Differentiator – Microsoft Office Integration: the death of spread mart hell – the rise of a single version of the truth. The best in class approach:

- Any report can be executed and refreshed directly from Microsoft Office.
- With object prompts, new reports can be created within Microsoft Office.
- Microsoft Office Integration Preserving the Integrity and Security of Centralized Metadata and Data Access.

Formatting changes in Microsoft Office are preserved after data refreshes which is important because:

- Centralized business layer of metadata provides a single version of the truth
- Up-to-date reports can be viewed within Microsoft Office, without having to leave the Office environment.
- Preservation of formatting changes maximize user adoption and minimize frustration

Other alternatives in the market are:

- Reports must be exported to Microsoft Office from the BI tool
- New reports cannot be created within Microsoft Office.

Do not allow to keep formatting changes after refreshing the data from Office, which are less optimal approaches in the market because:

- If reports have to be exported to Microsoft Office, then users would have to switch back-and-forth between Office and the BI tool to get updated reports in Office. This process is cumbersome.
- Microsoft Office users are limited to seeing reports that have already been pre-defined in the BI tool. Any new report that Office users want to see will require them to either switch to the BI tool to create the report, or to ask a developer to create the report.
- Frustrate end users by making it difficult to preserve their formatting changes after data refreshes from Office

The MicroStrategy BI Platform enables organizations to analyze vast amounts of data and distribute business insight throughout the enterprise. The MicroStrategy Mobile Platform lets organizations rapidly build enterprise-caliber mobile applications needed to mobilize business processes and information.

- MicroStrategy Applications are a set of application services designed to help enterprises deploy mobile commerce and loyalty services, build mobile identity and cyber security services, as well as generate real-time insights into consumer preferences.
- Now we are seeing most BI solutions recognizing the mobile opportunity and offering a mobile presentation component. And some broader solution platforms are even offering mobile application development tools that are in many ways the equal of solutions.
- **It's important to realize that MicroStrategy has multiple layers within its architecture**, and all of these layers are made of reusable building blocks that construct the BI environment. This is why MicroStrategy allows you to navigate all the BI Styles without having to change interface or applications. This is also why you can see the same reports regardless of the interface or delivery mechanism used to distribute the information.

See more information in the web resources below:

- Olsza, C. M. Assessment of Business Intelligence Maturity in the Selected Organizations, Proceedings of the 2013 Federated Conference on Computer Science and Information Systems, pp. 951-958: <http://annals-csis.org/proceedings/2013/pliks/139.pdf>
- **James Serra's Blog: Business Intelligence Maturity Assessment** <http://www.jameserra.com/archive/2013/06/business-intelligence-maturity-assessment/>
- [Images for Business Intelligence Maturity](#)
- Hagerty, J. and Hostmann, B., 2010. *IT Score Overview for Business Intelligence and Performance Management*. Gartner, Inc. Available at: <http://www.gartner.com/id=1433813>
- Watson, H.J., and Wixom B. H. (2007) Enterprise Agility and Mature BI Capabilities, BUSINESS INTELLIGENCE Journal, vol. 12, No. 3.