

Data Warehousing for Business Intelligence

Course 4: Business Intelligence Concepts, Tools, and Applications

Module 2 Bonus Materials

Lesson 3: Business Reporting


We've arranged for students in this MOOC to purchase at a very low cost digital versions of chapters 1, 2, and 4 of the authoritative textbook *Business Intelligence and Analytics: Systems for Decision Support*, 10th edition, 2015 by Sharda, R., Delen, D., and Turban, E. See the optional text book link under course overview to purchase (US\$4 for one chapter, US\$10 for all three; the regular price for students is \$15 per digital chapter).

Excerpts from SHARDA, RAMESH; DELEN, DURSUN; TURBAN, EFRAIM, BUSINESS INTELLIGENCE AND ANALYTICS: SYSTEMS FOR DECISION SUPPORT, 10th Edition, © 2015. Used by permission of Pearson Education, Inc., New York, NY. All Rights Reserved.

The nature of the report changes significantly based on whom the report is created for. Most of the research in effective reporting is dedicated to internal reports that inform stakeholders and decision makers within the organization. There are also external reports between businesses and the government (e.g., for tax purposes or for regular filings to the Securities and Exchange Commission). These formal reports are mostly standardized and periodically filed either nationally or internationally. Standard Business Reporting, which is a collection of international programs instigated by a number of governments, aims to reduce the regulatory burden for business by simplifying and standardizing reporting requirements. The idea is to make business the epicenter when it comes to managing business-to-government reporting obligations. Businesses conduct their own financial administration; the facts they record and decisions they make should drive their reporting. The government should be able to receive and process this information without imposing undue constraints on how businesses administer their finances.


A business report is a written document that contains information regarding business matters. Business reporting (also called enterprise reporting) is an essential part of the larger drive toward improved managerial decision making and organizational knowledge management. Primary characteristics of a good business report include clarity, brevity, completeness, and correctness.

Business Reports Building Blocks



Attributes


Descriptive information providing business context and defining summarization levels for calculations



Metrics

Quantitative business measures

Category	Subcategory	Metrics	Units Sold	Profit	Profit Margin	Revenue
Books	Art & Architecture	37	\$190	24.97%	\$720	
	Business	37	\$137	24.54%	\$558	
	Literature	53	\$87	20.61%	\$423	
	Books - Miscellaneous	54	\$84	19.06%	\$439	
	Science & Technology	43	\$302	24.70%	\$1,222	
	Sports & Health	35	\$107	24.13%	\$444	
Electronics	Audio Equipment	21	\$1,349	19.40%	\$6,950	
	Cameras	14	\$1,337	21.32%	\$6,270	
	Computers	28	\$560	18.89%	\$2,967	
	Electronics - Miscellaneous	14	\$1,205	20.58%	\$5,854	
	TV's	31	\$1,430	19.90%	\$7,184	
	Video Equipment	18	\$1,773	20.27%	\$8,750	
Movies	Action	87	\$101	8.99%	\$1,124	
	Comedy	88	\$87	7.69%	\$1,133	
	Drama	74	\$104	9.05%	\$1,146	
	Horror	92	\$118	9.94%	\$1,192	
	Kids / Family	73	\$100	8.93%	\$1,122	
	Special Interests	44	\$84	9.92%	\$843	

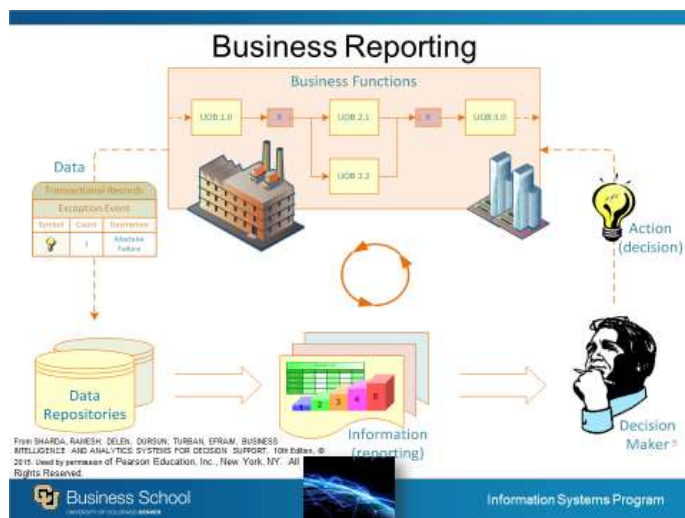


Information Systems Program

Source: this slide is from MicroStrategy

While reports can be distributed in print form or via e-mail, they are typically accessed via a corporate intranet. There are a wide variety of business reports, which for managerial purposes can be grouped into three major categories:

- Standard reports: Answer the questions: What happened? When did it happen? Example: Monthly or quarterly financial reports. **We all know about these. They're generated on a regular basis and describe just "what happened" in a particular area. They're useful to some extent, but not for making long-term decisions.**
- Ad hoc reports: Answer the questions: How many? How often? Where? Example: Custom reports that describe the number of hospital patients for every diagnosis code for each day of the week. At their best, ad hoc reports let you ask the questions and request a couple of custom reports to find the answers.
- Query drilldown (or OLAP): Answers the questions: Where exactly is the problem? How do I find the answers? Example: Sort and explore data about different types of cell phone users and their calling behaviors. Query drilldown allows for a little bit of discovery. OLAP lets you manipulate the data yourself to find out how many, what color and where.
- Metric management reports involve outcome-oriented metrics based on service level agreements and/or key performance indicators.
- Dashboard-type reports present a range of performance indicators on one page, with both static/predefined elements and customizable widgets and views. **Balanced scorecard reports present an integrated view of a company's health and include financial, customer, business process, and learning/growth perspectives.**
- Dashboard-type reports present a range of performance indicators on one page, with both static/predefined elements and customizable widgets and views. **Balanced scorecard reports present an integrated view of a company's health and include financial, customer, business process, and learning/growth perspectives.** Metric management reports involve outcome-oriented metrics based on service level agreements and/or key performance indicators. Can be used as part of business performance management.



The cyclic process of management, involves these steps: data acquisition leads to information generation which leads to decision making which leads to business process management. Perhaps the most critical task in this cyclic process is the reporting (i.e., information generation) —converting data from different sources into actionable information.

A business report is a written document that contains information regarding business matters. Business reporting (also called enterprise reporting) is an essential part of the larger drive toward improved managerial decision making and organizational knowledge management. The foundation of these reports is various sources of data coming from both inside and outside the organization. Creation of these reports involves ETL (extract, transform, and load) procedures in coordination with a data warehouse and then using one or more reporting tools. While reports can be distributed in print form or via e-mail, they are typically accessed via a corporate intranet. Primary characteristics of a good business report include clarity, brevity, completeness, and correctness.

The central idea of business reporting is to tell a story. Everyone who has data to analyze has stories to **tell, whether it's diagnosing the reasons** for manufacturing defects, selling a new idea in a way that captures the imagination of your target audience, or informing colleagues about a particular customer service improvement program. Stories bring life to data and facts. They can help you make sense and order out of a disparate collection of facts. They make it easier to remember key points and can paint a vivid picture of what the future can look like. Stories also create interactivity — people put themselves into stories and can relate to the situation. People will be much more engaged and receptive if information is presented to them in a story format.

According to Hill, G. (2008). "A Guide to Enterprise Reporting."
<http://ghill.customer.netSPACE.net.au/reporting/components.html> (accessed February 2013)

"there are following components to a business reporting system:

- *OLTP (online transaction processing)*. A system that measures some aspect of the real world as events (e.g., transactions) and records them into enterprise databases. Examples include ERP systems, POS systems, Web servers, RFID readers, handheld inventory readers, card readers, and so forth.
- *Data supply*. A system that takes recorded events/transactions and delivers them reliably to the reporting system. The data access can be push or pull, depending on whether or not it is responsible for initiating the delivery process. It can also be polled (or batched) if the data are transferred periodically, or triggered (or online) if data are transferred in case of a specific event.
- *ETL (extract, transform, and load)*. This is the intermediate step where these recorded transactions/events are checked for quality, put into the appropriate format, and inserted into the desired data format.
- *Data storage*. This is the storage area for the data and metadata. It could be a flat file or a spreadsheet, but it is usually a relational database management system (RDBMS) set up as a data mart, data warehouse, or operational data store (ODS); it often employs online analytical processing (OLAP) functions like cubes.
- *Business logic*. The explicit steps for how the recorded transactions/events are to be converted into metrics, scorecards, and dashboards.
- *Publication*. The system that builds the various reports and hosts them (for users) or disseminates them (to users). These systems may also provide notification, annotation, collaboration, and other services.
- *Assurance*. A good business reporting system is expected to offer a quality service to its users. This includes determining if and when the right information is to be delivered to the right people in the right way/format."

See more information in web resources below:

- [Beautiful Reports: The non-Designer Guide to Designing Business Documents](#)
- [MicroStrategy Basic Reporting Guide](#)