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Business Intelligence Software for the Classroom: MicroStrategy Resources on the Teradata University Network

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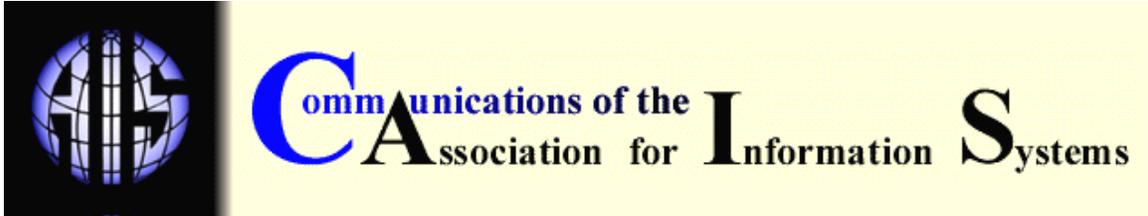
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BUSINESS INTELLIGENCE SOFTWARE FOR THE CLASSROOM: MICROSTRATEGY RESOURCES ON THE TERADATA UNIVERSITY NETWORK

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ABSTRACT

Faculty members are challenged with staying abreast of business intelligence and teaching the topic in relevant ways. The latest enhancement to the Teradata University Network (www.TeradataUniversityNetwork.com) is the addition of business intelligence software. The website now offers MicroStrategy 7i, an interactive environment for business reporting and analysis and several MicroStrategy analytic modules that focus on analysis for specific business processes. The new software is available for hands-on use by faculty and students. This tutorial describes these business intelligence resources and provides several ways in which the resources can be used to create effective classroom experiences. The resources are available to all faculty and students at no cost by registering with the Teradata University Network.

Keywords: business intelligence, data warehousing, data management, classroom software, pedagogy

I. INTRODUCTION

Faculty members are challenged with staying abreast of business intelligence (BI) and teaching the topic in relevant ways. In 2001, Teradata, a division of NCR, teamed with a group of academics knowledgeable in data management, and together they created the Teradata University Network (www.TeradataUniversityNetwork.com), a free learning portal designed to help faculty teach and learn about business intelligence, data warehousing, and data management topics [Watson and Hoffer 2003].

A recent addition to this learning portal is information and software from a major business intelligence vendor, MicroStrategy. This enhancement to the Teradata University Network helps professors better teach students about business intelligence, and it allows students to experience software that is widely used in practice. The resources that MicroStrategy offers can be used in a variety of ways. The purpose of this tutorial is to help faculty understand the MicroStrategy resources that are available to them and to provide ideas for incorporating them into classroom

experiences. This paper begins by describing MicroStrategy and the business intelligence resources available on Teradata University Network. It then presents several examples of ways in which the resources can be used.

II. MICROSTRATEGY

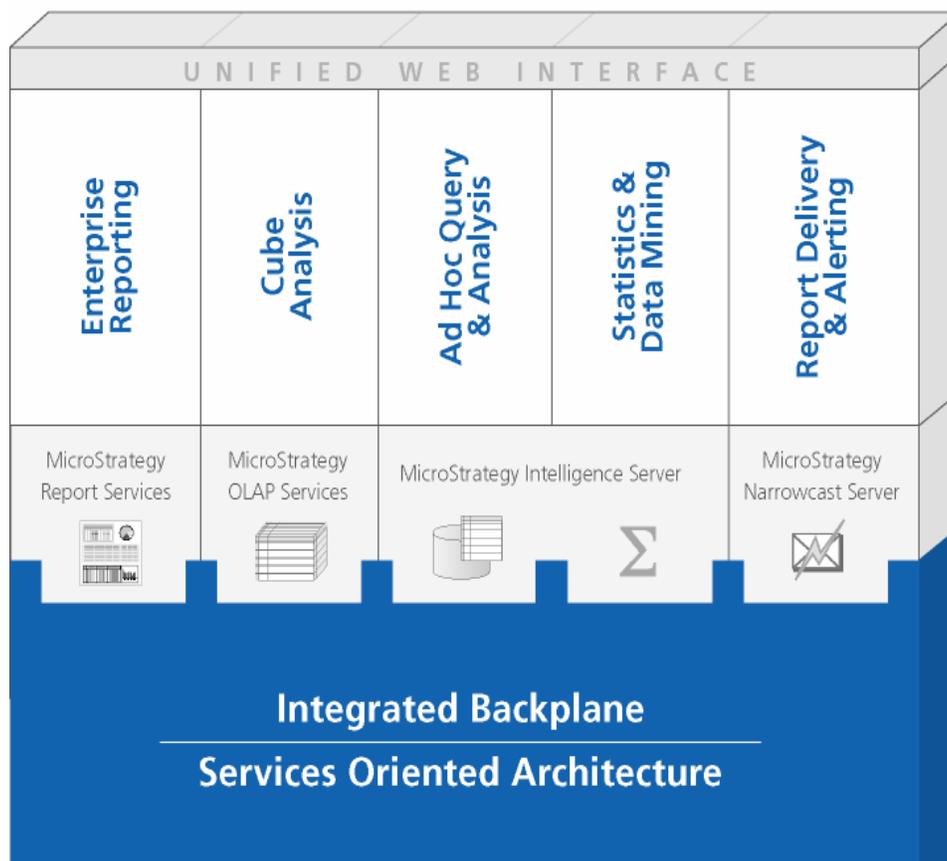
MicroStrategy was founded in 1989 and is headquartered in McLean, Virginia. The company's more than 2,600 customers include Bank of Montreal, Lowe's Companies, and AT&T. It works with over 500 technology and integration partners, including Teradata, PeopleSoft, Hewlett-Packard, and JD Edwards [MicroStrategy 2004a]. MicroStrategy created the first relational on-line analytical processing (ROLAP) software platform in which an entire relational database is accessed through multi-dimensional OLAP manipulations by the end user. MicroStrategy was the first vendor to offer a web-based user interface, a mid-tier BI application server, automatic report personalization, and the ability to broadcast personalized reports and alerts based on predetermined business events.

Table 1 defines the five styles of business intelligence, which are the fundamental ways in which people use BI [MicroStrategy 2003]. Many business intelligence products specialize in just one or two of these capabilities. MicroStrategy differentiates itself by offering all five styles of BI through a common architecture (Figure 1).

Table 1. Five Styles of Business Intelligence

| | |
|--|---|
| 1. Enterprise Reporting | Ability to create and distribute pixel-perfect reports, including scorecards and dashboards, operational reports, business reports, managed metric reports, and statements and invoices. Enterprise Reporting is the most pervasive style of business intelligence because it caters to the needs of the vast numbers of novice information consumers in organizations. |
| 2. Cube Analysis (MOLAP) | Ability to perform slice-and-dice OLAP functions on predefined subsets of data, including pivoting, page-by, sorting, subtotaling, and drilling. This style of business intelligence is applicable to relatively novice users who have modest and well-defined analysis needs that can be satisfied by pre-defined cube datasets. |
| 3. Ad Hoc Query (ROLAP) and Analysis | Ability to perform full investigative analysis of an entire relational database. Analysis is accomplished either by enabling users to construct their own ad-hoc queries, or more powerfully, by allowing them to "surf" through the entire data warehouse using the ROLAP ability to drill anywhere in the database. This approach allows analysts and management to have more insight into business results. |
| 4. Statistical Analysis and Data Mining | Ability to use statistical treatment and data mining algorithms to produce correlations between data and to uncover patterns. This style of business intelligence is used by analysts for predictive analysis. |
| 5. Report Delivery and Alerting | Ability to disseminate reports and exception alerts on an enterprise scale. This style allows users to receive reports either through self-subscription, or from a centralized report distribution services managed by a central administrator. The data in every report is automatically personalized according to the preferences and security of the recipients, and is automatically formatted to be compatible with a range of output devices, including email, printer, PDA, and file archives. |

Table adapted from [MicroStrategy 2003]



Reprinted with permission from [MicroStrategy 2003]

Figure 1. MicroStrategy Architecture

MicroStrategy software uses a single architecture or backplane which hosts any or all of the 5 styles of BI. MicroStrategy Web (shown as the block at the top of Figure 1) is the user interface that presents a single unified look and feel to the users for all of these 5 styles. Every report written in MicroStrategy will exhibit different functionality and features when presented to a user through these different styles of BI.

MicroStrategy also offers pre-packaged analytic modules that are fully-formed "analytic applications" designed to report and analyze specific business processes. These modules are collections of reports and key performance indicators (KPI) that users access through MicroStrategy Web. They include all of the infrastructure building-blocks behind the reports, such as prompts, filters, metrics, and attributes; as well as a small data warehouse with sample data.

Figure 2 describes the six pre-packaged analytic modules offered by MicroStrategy (three are available on Teradata University Network). Ideally,

| | | |
|---|---|---|
| <p>Customer Analysis Module</p> <p>Analytic Domain:</p> <ul style="list-style-type: none"> • Customer Segmentation <ul style="list-style-type: none"> > Demographics, deciling, custom groups > Revenue contribution by segment • Customer Profitability <ul style="list-style-type: none"> > Product affinity > Revenue and profit trends • Acquisition, Retention and Attrition <ul style="list-style-type: none"> > Customer loyalty analysis > Time-based trends <p>69 KPIs, 40 Reports (incl. Scorecards)</p> | <p>Sales Force Analysis Module</p> <p>Analytic Domain:</p> <ul style="list-style-type: none"> • Leads Analysis <ul style="list-style-type: none"> > Lead conversion, source profiling • Pipeline Analysis <ul style="list-style-type: none"> > Time-based trends • Sales Force Performance <ul style="list-style-type: none"> > Summary sales by geography • Product Analysis <ul style="list-style-type: none"> > Product performance > Product affinity <p>88 KPIs, 45 Reports (incl. Scorecards)</p> | <p>Sales and Distribution Module</p> <p>Analytic Domain:</p> <ul style="list-style-type: none"> • Inquiry, Quotation and Order Analysis <ul style="list-style-type: none"> > Inquiry-to-Quotation Conversion > Customer Order Analysis • Delivery and Sales Analysis <ul style="list-style-type: none"> > Open Delivery Reporting > Distributor Contribution Analysis • Post-sales and Returns <ul style="list-style-type: none"> > Backlog Analysis > Returns Analysis > Effective Delivery Analysis <p>168 KPIs, 83 Reports (incl. Scorecards)</p> |
| <p>Web Traffic Analysis Module</p> <p>Analytic Domain:</p> <ul style="list-style-type: none"> • Visitor Analysis <ul style="list-style-type: none"> > Trends across web sites > Visitor counts by time > Community characteristics • Content Analysis <ul style="list-style-type: none"> > Top and bottom visited pages > Banner click through • eCommerce Analysis <ul style="list-style-type: none"> > Sales by time, location > Transactions by product <p>82 KPIs, 64 Reports (incl. Scorecards)</p> | <p>Financial Reporting Analysis Module</p> <p>Analytic Domain:</p> <ul style="list-style-type: none"> • Accounts Payable & Receivable <ul style="list-style-type: none"> > Aging of A/P and A/R > Comparison by Vendors • Balance Sheet Reporting <ul style="list-style-type: none"> > Current & Time-based Analysis • Profit And Loss Statements <ul style="list-style-type: none"> > Revenue and Cost Analysis > GAAP Reporting • Planning & Forecasting <ul style="list-style-type: none"> > Variance from Actual <p>55 KPIs, 42 Reports (incl. Scorecards)</p> | <p>Human Resource Analysis Module</p> <p>Analytic Domain:</p> <ul style="list-style-type: none"> • Recruitment & Hiring Analysis • Compensation & Benefits Analysis • Productivity & Development Analysis <ul style="list-style-type: none"> > Performance Analysis > Qualifications Reporting • Attrition & Retention Analysis • Workforce Analysis <ul style="list-style-type: none"> > Headcount Trends > Profile Analysis <p>85 KPIs, 47 Reports (incl. Scorecards)</p> |

Note: The Customer Analysis, Sales Force Analysis, and Financial Reporting Analysis modules are available on the Teradata University Network

Figure 2. MicroStrategy Pre-Packaged Analytic Modules.

these analytic modules are used as starting points for organizations who want to create applications in the areas of customer analysis, sales force analysis, sales and distribution, web traffic analysis, financial reporting analysis, and human resource analysis. Companies can adapt reports and analytics from these modules for their own unique needs.

The Teradata University Network is delighted to make MicroStrategy resources available to faculty.

III. MICROSTRATEGY RESOURCES

In Fall 2003, MicroStrategy made a variety of informational, product, and support resources available for faculty¹ via the Teradata University Network (Figure 3) and to students using the companion site, Teradata Student Network (www.TeradataStudentNetwork.com)².

¹ Faculty are required to register and define a personal password the first time they enter TUN.

² To access their site, students login using a password provided by the instructor. This password is changed once a year. The current password is available to the instructor on the Teradata University Network.

INFORMATIONAL RESOURCES

Informational resources are listed above the first red line in Figure 3. They are available to help faculty learn about MicroStrategy, its products, and issues related to business intelligence. These resources are:

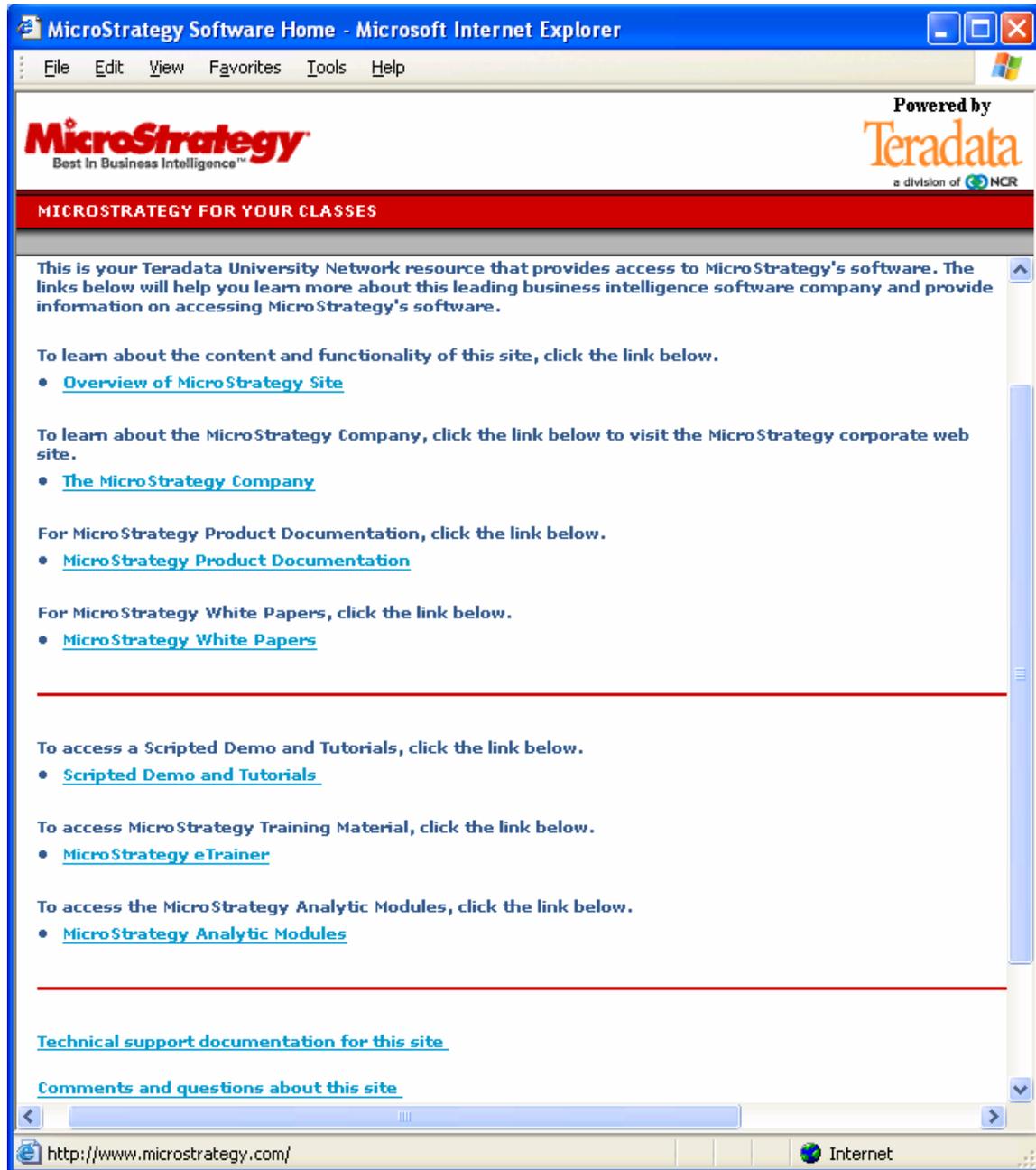


Figure 3. MicroStrategy Resources Available on Teradata University Network

1. An overview of the MicroStrategy Site that describes all of the resources that are provided to faculty. I recommend that faculty print this document out and use it as a guide to familiarize themselves with the website.

2. A link to the MicroStrategy company home page (www.microstrategy.com). The home page is a useful supplement to what is available on the Teradata University Network. It provides information about the MicroStrategy company and all the products that it sells. Faculty can sign up to enroll in free online seminars and classes, subscribe to an electronic newsletter, watch an online demo, and access white papers.
3. Product documentation is available in a .pdf file. You can access MicroStrategy product manuals, reference materials, and setup guides.
4. Links are provided to the white papers section of the MicroStrategy Website. These white papers provide insights into business intelligence.

PRODUCT RESOURCES

The middle section of Figure 3 includes resources that allow faculty and students to obtain hands-on experience with MicroStrategy and to see first-hand what a business intelligence environment “looks like.” The first link points to a scripted demo and tutorials; which are described next.

Tutorial and Script

Often, faculty do not have time to sit down and learn a software package and all of its capabilities. The scripted demo was developed for faculty who would like to demonstrate a business intelligence environment without spending significant time learning a new software package. Faculty can print out the scripted demo and then follow it by using the MicroStrategy Sales Analysis Module (found under the MicroStrategy Analytic Modules link in Figure 3). I recommend that you go through the 10-minute script two or more times before presenting it to a class. Faculty should be able to master the script quite quickly.

The MicroStrategy tutorial includes a tutorial reporting application and a companion tutorial script that leads you through the application in a logical way. The reporting application provides a set of reports designed to illustrate the user interface functionality. The theme of the application is a retail organization specializing in Electronics, Books, Movies, and Music products, with reporting areas set up to analyze Employees, Inventory, Finance, Product Sales, and Suppliers. You can interact with the reporting application freely, testing out design, reporting, and other capabilities in an ad hoc way. You also can interact with the reporting application using the tutorial script. This script is a .pdf file that illustrates the basic user functionality provided by MicroStrategy Web and includes exercises to test your knowledge.

Two other tutorials take users through the Customer Analysis and the Sales Analysis Analytic Modules. These tutorials, also available under the Scripted Demo and Tutorials link, present short business scenarios and then provide step-by-step instructions for how a user can interact with the analytic modules for each scenario. Students at North Carolina State University in Fay Cobb Payton’s MBA class developed these tutorials as class assignments. Their contribution to the Teradata University Network is greatly appreciated.³

e-Trainer

The e-Trainer shown in Figure 3 is a web-based training system that teaches you how to use MicroStrategy Web and then tests your knowledge. It combines expert instruction with real product simulation, a user-friendly interface, and interactivity, to form a complete hands-on way to

³ All Teradata University Network users are encouraged to contribute materials. Contributions can include any high-quality resource that would add value to a course in data management, data warehousing, Business Intelligence, or DSS. Examples include annotated PowerPoint slides, cases, assignments, projects, and syllabi. The Teradata University Network’s value increases with each contribution.

learn about MicroStrategy Web. Each of the 23 lessons contain interactive tests so that faculty and students can assess mastery of the lessons.

Analysis Modules

Similar to the tutorial reporting application, faculty can use the MicroStrategy Analysis Modules to interact with the Customer, Financial Reporting, and Sales Analysis Modules freely, testing out design, reporting, and other capabilities in an ad hoc way.

SUPPORT RESOURCES

On a rare occasion when software fails, a network goes down, or some other technical problem precludes the normal functioning of MicroStrategy, faculty need to feel that they will obtain help in a timely manner so that they can conduct class effectively.

I highly recommend that faculty go to the Technical support documentation for this site link and print out the attached Word document. This document clearly describes the web-based support plan and the process for reporting and resolving problems with MicroStrategy. Then, if a significant problem with MicroStrategy occurs, you will be prepared to act.

Faculty also are welcome to provide general comments or ask questions about the website. The link at the bottom of Figure 3 will send an email to Hugh Watson, Senior Director of Teradata University Network. You also are welcome to direct comments to any of the Teradata University Network Advisory Board members.

IV. WAYS TO USE BUSINESS INTELLIGENCE RESOURCES IN CLASS

This section describes some of the many ways faculty are using the available resources in the classroom. When teaching about business intelligence, you may want to consider

- general demos;
- hands-on experiential learning;
- scenario-based assignments; and
- research projects.

GENERAL DEMOS

A traditional approach may be appropriate for lecture-based classes that seek to communicate to students what business intelligence software can do, what a typical interface looks like, and how a user can interact with a business intelligence tool to solve business problems. In a lecture-based class, you may want to consider performing a demonstration in which you navigate through the MicroStrategy Web product on a screen in the front of the classroom. Three options are available:

1. Use the tutorial application and script. The instructor first reads the tutorial script and then applies portions of it that seem interesting.
2. If a professor is experienced with MicroStrategy, he or she can manipulate the tutorial application in an ad hoc fashion.
3. Use the scripted demo, which is much shorter than the tutorial script but created within a realistic business context. This option is my preference.

With any of these options, the objective is to show a variety of MicroStrategy Web capabilities that a typical analyst would use in his or her daily tasks.

Usually, 15 to 20 minutes of demonstration can show the minimal amount for students to get the basic idea of what a business intelligence environment is like. Some faculty prefer to take an hour or an hour and a half with the demo, which is an approach that leaves students with a great understanding of how analysts really work with the software. Either way, the instructor can combine the demonstration with an overview of MicroStrategy and an overview of business intelligence. The company website provides information to create slides covering the former topic, and the latter topic can be researched using some of the business intelligence articles and research reports posted on Teradata University Network, such as Eckerson [2002] and Eckerson [2003]. Eckerson [2002, 2003] also are excellent readings to assign as preparation for class.

Some variations on this approach are:

- Ask students to read through the tutorial script or scripted demo ahead of time as homework, and assign pieces of the script to different students to perform on lecture day.
- Ask students to follow along with the tutorial application as you lead the demo. However, you should not try this with large classes because computer performance is degraded by the large number of demands on the Teradata server. We suggest that you test this approach ahead of time in your environment to ensure that the response time is satisfactory with many students following along simultaneously.
- Demo the tutorial script in an ad hoc way during class, and then have the students go through the tutorial script as an assignment afterwards. They can report back on their experience, such as the three most interesting capabilities of the product or the three most useful capabilities for a business analyst.
- Combine this approach with the e-Trainer to allow students to obtain hands-on experience in a laboratory situation.

One important point for undertaking demonstrations in class is that the MicroStrategy tutorial programs interact with a real database in real-time. Thus, each time you query the database, there is lag time while the request is processed. I recommend that you fill in the dead time with interesting facts or questions for the students about business intelligence and the MicroStrategy software. This tactic will make the demonstration more interesting and more enjoyable for the students.

HANDS-ON EXPERIENTIAL LEARNING

Many faculty teach technology by students interacting with software in a hands-on way in a laboratory setting or independently. In these cases, faculty can use the e-Trainer software for its tutorial and testing capabilities. In a typical scenario, the instructor assigns all or a subset of the 23 e-Trainer lessons. The students complete the assigned lessons, taking the test at the end of each lesson as they complete it to assess his or her mastery of the material. When the students first log into the e-Trainer, they are required to set up a user id and password, which allows the software to track individual performance as students complete the e-Trainer lessons. Hugh Watson at the University of Georgia requires his students perform each lesson until they receive a perfect score, and then turn in their test results (Figure 4)⁴.

Some variations on this approach are:

- Fay Cobb Payton of North Carolina State University asks her MBA class go through

⁴ Students can do a print screen to create a printed copy of their results. The print screen will include the user id in the top lefthand corner on the copy.

the e-Trainer lessons. Then, Professor Payton assigns groups of students to the various Analysis Modules and requires them write their own “e-Trainer” lessons as a project. Two of the projects are now posted in Teradata University Network under the Scripted demo and tutorials link in Figure 3.

User ID: student
[Introduction](#) [Logout](#)

| Lesson Name | Lesson Status | Test Name | Test Status | Score |
|--|---------------|------------------------------------|-------------|-------|
| 1. Getting in to a Project | Complete | Test for Lesson 1 | Pass | 100% |
| 2. Basic Navigation in a Project | Complete | Test for Lesson 2 | Pass | 100% |
| 3. Finding and Searching for Reports | Complete | Test for Lesson 3 | Pass | 100% |
| 4. Prompts and Thresholds | Complete | Test for Lesson 4 | Pass | 75% |
| 5. Changing the Look of a Report | Complete | Test for Lesson 5 | Pass | 83% |
| 6. Manipulating the Data in a Report | Complete | Test for Lesson 6 | Pass | 100% |
| 7. Preferences | Complete | Test for Lesson 7 | Pass | 100% |
| 8. Page By | Complete | Test for Lesson 8 | Pass | 75% |
| 9. History List | Complete | Test for Lesson 9 | Pass | 100% |
| 10. Exporting | Complete | Test for Lesson 10 | Pass | 100% |
| 11. Printing | Complete | Test for Lesson 11 | Pass | 100% |
| 12. Graph Formatting and Drilling | Complete | Test for Lesson 12 | Pass | 83% |
| 13. Grid Formatting | Complete | Test for Lesson 13 | Pass | 100% |
| 14. Prompts and Re-prompting | Complete | Test for Lesson 14 | Pass | 100% |
| 15. Totals | Complete | Test for Lesson 15 | Pass | 100% |
| 16. Simple Drilling | Complete | Test for Lesson 16 | Pass | 100% |
| 17. Subscribing | Complete | Test for Lesson 17 | Pass | 100% |
| 18. Filtering Results | Complete | Test for Lesson 18 | Pass | 100% |
| 19. Advanced Drilling | Complete | Test for Lesson 19 | Pass | 75% |
| 20. Saving and Deleting | Complete | Test for Lesson 20 | Pass | 100% |

Figure 4. Sample Test Results for E-Trainer

Some variations on this approach are:

- Fay Cobb Payton of North Carolina State University asks her MBA class go through the e-Trainer lessons. Then, Professor Payton assigns groups of students to the various Analysis Modules and requires them write their own “e-Trainer” lessons as a project. Two of the projects are now posted in Teradata University Network under the Scripted demo and tutorials link in Figure 3.
- Each student (or small groups of students) “teaches” one of the e-Trainer lessons to the rest of the class. Students should prepare by practicing their lesson and by doing outside research using the MicroStrategy informational resources. In addition to demonstrating the lesson in class, they also present 3-5 additional interesting things about their e-Trainer topic that they learned from their research.
- Assign portions of the tutorial script after the e-Trainer is completed.
- Assign a scenario-based assignment after the e-Trainer is completed.

At the University of Virginia, students are interested in learning practical skills that they can apply in industry. They enjoy gaining skills that can help them land jobs. For students interested in MicroStrategy, we encourage them to master the tool through the e-Trainer and then list this basic “certification” on their resume.

SCENARIO-BASED ASSIGNMENTS

Often the best way to teach a practical topic is for students to solve a practical problem, particularly if you are dealing with graduate students or general business students. My favorite way to teach business intelligence is to set up a real business scenario and then make the students act as analysts using a business intelligence tool. In the case of MicroStrategy, this can be done by crafting scenarios based on the tutorial application. An example by Bonney [2003] is shown in Figure 5⁵. The students read the scenario and then answer the questions using the Sales Analysis Module⁶

AdVent Technology: MicroStrategy Sales Analytic Module Assignment

As Vice President of Sales for AdVent Technology, you are preparing to visit some of the sales offices on the East coast. AdVent manufactures computer equipment that is sold in a business-to-business environment. The sales force is structured in regions, East, West, and Central, and within those regions are sales districts containing multiple reps. Along with the computer equipment that AdVent sales, it also offers consulting services for system design and implementation.

Sales for AdVent have been down, and as VP of Sales, you are very interested in getting things going in the right direction. So with that in mind, there are many tasks you would like to get accomplished on your trip.

Morale is important to keeping a sales force focused. On your trip to the New York and Atlanta offices, you would like to congratulate any rep who has landed a big deal for the company in Q1. Obviously you need to know who those reps are and what the deal amount was in order to put together a speech while visiting the office.

1. Make a list of any rep that is in the Atlanta or New York office who has landed a deal that was large enough to be in the Top 10 deals in 2002 Q1 for the company. List the rep, the deal amount and the customer who made the purchase. (List in a Word file or in Excel file found in question 2.)

An important role for the VP of Sales is to actually help generate sales. Another thing you would like to accomplish is to conduct a strategy session with sales managers and reps. During this strategy session, you would like to review opportunities in the pipeline and solicit feedback from the sales staff to determine if there is anything you can do to help close the sale.

2. Generate a list of the projects in the pipeline for Atlanta and New York that shows who the rep working on the project is, as well as the customer and expected worth of the project. Export report to Excel to be turned in.

It is the VP of Sales' responsibility to conduct reviews of the district managers while visiting their offices this time of year. These reviews focus on last quarter's sales results and are used to determine areas for improvement as the year moves forward. The Atlanta and New York district managers get a scorecard that breaks down their performance by revenue and quota. Not only are you interested in the Atlanta and New York scorecards, but you like to see all of the districts' results so that you can compare all of the districts in order to gauge performance.

3. Generate a scorecard that shows all districts' results together for easy comparison. (Hint: You need to drill down on sales region). Export your report to pdf. format to be turned in.

The solution to this assignment is available at www.TeradataUniversityNetwork.com to registered faculty.

Figure 5. Sample Assignment for Sales Analytic Application

⁵ This assignment, from [Bonney 2003], and its solution are available on the Teradata University Network under the Teach section of the web site, under Cases, Projects, and Assignments.

⁶ Students reach the Sales Analysis module from the link for Microstrategy Analytic Modules.

RESEARCH PROJECTS

Some faculty want students to explore software topics in innovative ways. I like to assign topics to students; ask them to research the topic in depth; and to present results back to the class. One example is the research project I use for graduate students. I assign groups of students to various business intelligence topics, such as business intelligence platforms, analytic applications, customer relationship management, and business performance management. I then give the students some direction by providing a short list of resources (e.g., the Teradata Student Network). The students are charged with learning the topic in-depth and then presenting the topic to the class in a 45 minute presentation. The presentation must include a demonstration of a representative tool for their topic.

The student groups who are assigned to business intelligence platforms and analytic applications use the MicroStrategy resources in their research. They use the tutorial application and analytic applications for the required demonstration portion of their presentations. Some groups choose to assign some of the e-Trainer lessons to their fellow classmates as preparation. This exercise allows each group to become the expert resource in one area of business intelligence, and the presentations expose everyone in the class to every topic. I find this approach to be quite effective. Hugh Watson from the University of Georgia also assigns research projects to his students. His assignments are posted on the Teradata University Network under the Teach section of the web site.

IV. CONCLUSION

Clearly, faculty can use the MicroStrategy resources available on the Teradata University Network to teach business intelligence in various valuable ways. The following are comments about their experience by four professors who use MicroStrategy in their classes.

"By being able to use MicroStrategy live with students (including Full-time Employed MBAs, MBAs, and senior undergraduates), I was able to show them the full range of capabilities and the huge amount of data (from conventional data to what if analysis to dashboards) that real companies have and use. In the case of Dashboards, the multiple presentation formats and the idea that dashboards can be used to judge where the firm is in near real time came through in ways that nothing else could do." Paul Gray, Claremont Graduate University

"The network is an excellent source for case studies, technical overviews and software tools. The technical support staff is committed and responsive. This is particularly critical for me - as students tend to associate system downtime with teacher effectiveness." Fay Cobb Payton, North Carolina State University

"MicroStrategy resources of the Teradata University Network were used in my undergraduate database class last spring (2004) at the University of Virginia. The class consisted of a mix of business, engineering, and computer science students. To experience some of the details of MicroStrategy tools, students were assigned to work through the eTrainer exercises. We followed eTrainer with a thorough exploration of the Tutorial to develop a broad understanding of MicroStrategy's business intelligence and reporting environment. Several student groups designed BI applications using C# and ASP.net for a retail store inventory management, styled after the MicroStrategy dashboards and reports. The MS resources were effective in showing how databases, queries, analytical methods, and comprehensive reporting tools are used for problem solving in real organizations. I plan to continue to use the MicroStrategy resources in this way." David Smith, University of Virginia

"In the past, it was difficult to give students hands-on experience with a leading BI tool. You had to work out an agreement with a vendor, install the software, learn to use it, and develop pedagogical materials around it. Virtually all of this work is done for you with MicroStrategy on the

Teradata University Network. I've used MicroStrategy several times in my graduate decision support course, and it was easy to include in the course and students loved it". Hugh Watson, University of Georgia

I strongly encourage faculty to share their creative efforts by posting assignments and other resources on the Teradata University Network, so we can continue to innovate and to improve teaching effectiveness in this area.

In the future, MicroStrategy and other Teradata Business Partners will continue to post new resources so that faculty can continually access the latest and most relevant business intelligence tools and techniques. In this way, faculty can better prepare their students for careers that include business intelligence.

ACKNOWLEDGMENTS

I thank Hugh Watson and Jeff Hoffer for their help with MicroStrategy resources and for their input into this tutorial. I also thank Teradata and MicroStrategy for making these wonderful resources available to the academic community.

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REFERENCES

Editor's Note: The following reference list contains hyperlinks to World Wide Web pages. Readers who have the ability to access the Web directly from their word processor or are reading the paper on the Web, can gain direct access to these linked references. Readers are warned, however, that

1. these links existed as of the date of publication but are not guaranteed to be working thereafter.
2. the contents of Web pages may change over time. Where version information is provided in the References, different versions may not contain the information or the conclusions referenced.
3. the author(s) of the Web pages, not AIS, is (are) responsible for the accuracy of their content.
4. the author(s) of this article, not AIS, is (are) responsible for the accuracy of the URL and version information.

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