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December 2006

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Recommended Citation

Conway, Mark; Goul, Michael; Floyd, Barry; and Vasseur, Gauthier, "Business Performance Management for the Classroom: Hyperion Solutions' Strategic Methodologies Dashboards and Applications" (2006). *AMCIS 2006 Proceedings*. 546.
<http://aisel.aisnet.org/amcis2006/546>

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Business Performance Management for the Classroom: Hyperion Solutions' Strategic Methodologies, Dashboards and Applications

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ABSTRACT

Business (or corporate) Performance Management (BPM) is a synergistic combination of organizational best practices and a specific category of technologies that enable companies to translate strategies into plans, monitor execution and provide insight to improve financial and operational performance. The latest enhancement to the Teradata University Network (www.TeradataUniversityNetwork.com) is the addition of teaching materials from Hyperion Solutions, Inc., an organization recognized in the "leadership position" in Gartner's most recent Magic Quadrant describing BPM vendors. The website now offers a teaching note, exercises, cases and other classroom materials related to Hyperion's leading edge dashboard construction and deployment software capabilities. In addition, Master Data Management, which involves infrastructure alignment and data aggregation capabilities, is addressed in the website's materials. This tutorial describes these BPM resources and provides suggestions and directions for their effective classroom utilization. The resources are available to all faculty and students at no cost by registering with the Teradata University Network.

Keywords

Business performance management, business intelligence, data warehousing, classroom software, pedagogy

INTRODUCTION

Business Performance Management (BPM) is being applied in many business disciplines including strategic, operational, supply chain and financial management. In addition, there is an emerging role for BPM in Sarbanes/Oxley compliance monitoring and sustainable development reporting. BPM methods, tools – like dashboards – and applications are typically designed, developed, deployed and maintained by the information systems professionals within major organizations. Continuing with a tradition of bringing excellent teaching resources to information systems faculty members and students, Teradata, a division of NCR, has partnered with Hyperion Solutions, Inc. to offer BPM resources through its free Teradata University Network (www.TeradataUniversityNetwork.com) learning portal. Teradata has a strong tradition in enhancing its already vibrant faculty and student user community with the most up-to-date and coursework-relevant resources on business intelligence, data warehousing and data management (e.g., Watson and Hoffer 2003; Wixom 2004).

Teradata University Network's most recent resource additions relate to methodologies and software from the company tagged just last year as in the BPM "leadership position" of Gartner Group's Magic Quadrant [Rayner, Buytendijk and Geishecker, 2005]. Hyperion Solutions' offerings to the BPM market include products for planning, budgeting and forecasting; financial consolidation and statutory reporting, and they include scorecarding/dashboard products. The products operate on multiple databases with separate data schemas, while their Hyperion Hub product serves as a central point for managing data and metadata sharing. To support faculty members teaching the topic of BPM and to provide hands-on exposure for students to Hyperion products, Teradata University Network now houses Hyperion supported BPM resources. This tutorial is designed to help instructors understand these resources and provide ideas for incorporating them into classroom contexts. The remainder of the paper is organized as follows. First, there is a discussion of Hyperion Solutions, Inc., followed by a description of the resources available on Teradata University Network. Next, a typical course session is described to help provide ideas for how faculty members might customize the materials for their particular classroom context.

HYPERION SOLUTIONS, INC.

Hyperion Solutions is the global leader in BPM software (www.Hyperion.com). With Hyperion’s suite of products, organizations can collect, organize and analyze data and then distribute it to support decision making throughout an enterprise. Data is delivered through a standardized workspace that makes BPM easy to implement and learn. Performance improvements are driven by addressing the alignment of goals with metrics – all in a manner intended to reinforce operational efficiency and provide performance data integrity. Hyperion’s installed customer base includes 10 of the top 10 banks, 10 of the top 10 consumer products/food companies, 9 of the top 10 automotive companies, 9 of the top 10 telecommunications companies, 9 of the top 10 motor vehicles/parts companies and 5 of the top 5 industrial equipment companies. The company’s market share is almost two and one half times the share of its nearest competitor in the BPM space.

Hyperion System 9 is the company’s flagship product, with the unified Hyperion System 9 BI+™ Workspace™ providing a full business intelligence platform complete with reporting, dashboard and analysis capabilities. The dashboard component provides for Key Performance Indicator (KPI) exploration and analysis that requires no coding. Drill-down capabilities enable root-cause analysis at the speed of thought, and there is direct support for relational and multidimensional data sources. KPI metrics are built into the Dashboard Development Studio, which includes a wizard-driven application builder. More customized development is facilitated through the main structure: frames. A frame prototype is the mould that creates consistent look and feel ‘skins’ that set over the top of the analytical infrastructure of a dashboard. Once constructed, a runtime version of the dashboard is deployed to support end-users through a variety of features, navigation options and filtering methods. Figure 1 is a sample dashboard frame. Dashboard navigation is in the area labeled 1, and included herein are hyperlinks that enable access to other frames in the dashboard. Side-label navigation, drop-down list, or tabbed navigation layouts are available, depending on the frame template used. Label 2 refers to the top panel where there are buttons found in the dashboard. Label 3 refers to the section title, and label 4 refers to the filter drop-down list box that allows one to set the filters for the dashboard display. Label 5 refers to ‘Views’ which dictate how objects are to be displayed in a frame. Views can be ‘view only,’ hyperlinks or active. Label 6 refers to the content area, where views are manipulated and displayed, and label 7 shows the timestamp for information presented in a dashboard.

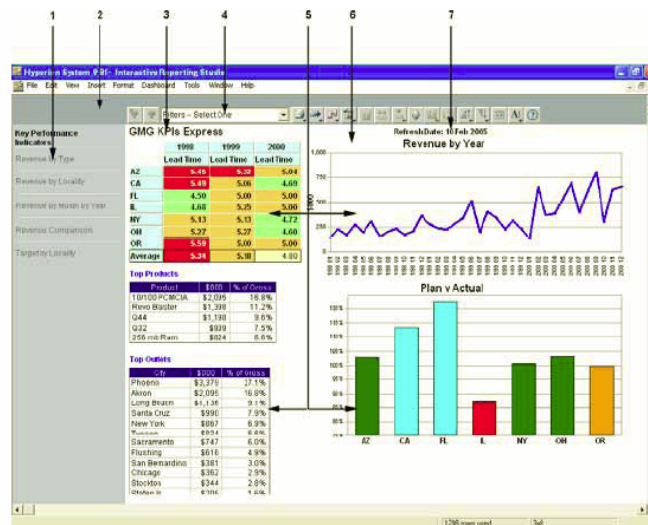


Figure 1: Sample Dashboard Frame

HYPERION RESOURCES

Hyperion provides a variety of resources for instructors through Teradata University Network. Instructors gain access to the resources through Hyperion’s Academic Alliance Program, which is accessible by selecting, “Hyperion BPM/BI,” in the drop down list under the “Software” tab of the Teradata University Network main page. After completing a short registration form, you are linked to the “ACADEMIC ALLIANCE PROGRAM – BPM DASHBOARD TUTORIAL & WORKSHOP DOWNLOAD landing page. A wealth of resources is available from this page, including general educational materials and specific downloads designed for www.TeradataUniversityNetwork.com faculty members.

General Educational Resources

When you register with Hyperion Solutions as a faculty member offering courses related to BPM, you can expect to receive an e-mail from the Director of the Academic Alliance Program with details on how to access educational resources dedicated to help you and your students. Currently, the e-mail provides directions on how to access a free six hour tutorial on Hyperion's dashboard products. In the near future, additional materials will be available including a live application of the Hyperion Performance Suite for use by faculty and students.

BPM Dashboard Tutorial and Workshop Downloads

On Hyperion's Academic Alliance Program page, there are two downloads available. The first is a complete set of classroom-tested materials for use in an approximately four-hour case-based course module. To support materials in that module, a comprehensive, professional and stimulating flash demo is available as the second download. The intent of the demo is to provide a live scenario for demonstrating a select set of the activities associated with might be referred to as the "Performance Planning Value Chain." Figure 2 shows the steps in that value chain (from Marr 2003).

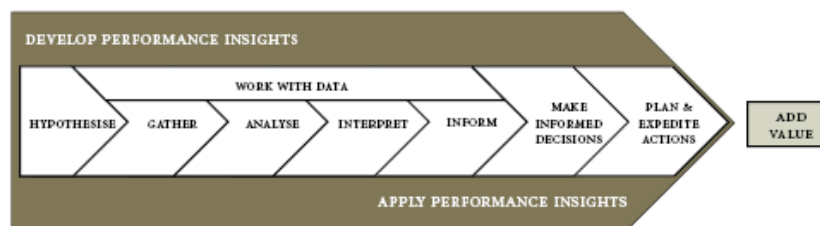


Figure 2: Performance Planning Value Chain (after Marr 2003)

Adhering to this value chain helps organizations link their measurement systems to their strategies. The chain begins with building business models describing organization-specific causal relationship patterns between different aspects of performance. For example, in one industry, market share may be most closely correlated with service quality, and in another, quality and cycle time from product design to distribution point may be most closely correlated. Such causal maps are the origins for hypothesizing how the business organization creates value. It is through such hypotheses that ongoing measurement provides a means to test, challenge and scrutinize up-to-date activities. Note that such measurement need not rely on metrics that are all financial, nor are all measures required to be tangible. However, there needs to be a way to identify the right measures such that there can be a clear understanding of what the metrics are, that their definitions are transparent, i.e., there is a common and well-understood semantic interpretation of the metrics, and that all metrics are measurable across the enterprise.

Once defined, measures provide a means to test current performance against hypotheses. Ascertaining cause-effect circumstances - when hypothesis testing yields disconfirming results - is key to timely, reactive decision making. It behooves an organization to spend more of their time on extracting valuable and action-oriented insights from their testing, and less time on collecting and reporting performance data. Thus, even while it is tempting to create a vast number of detailed measures, it is important that decision makers not be "drowning in data," or experiencing "paralysis without analysis" (Neely, Adams and Kennerley 2001). Communicating business insights is the next critical value chain component, followed by making decisions and taking actions. Execution subsequent to the discovery, communication and decision making components of the value chain is the final step in adding value.

The Performance Planning Value Chain provides a host of possible pedagogical objectives for BPM-related course modules. In the materials included in the download, the five objectives listed as follows, among many others, are directly addressed:

1. To show how business process management improves managers' capabilities to achieve near real-time, data-driven decision making.
2. To demonstrate the processes and difficulties involved in managing the data required to deploy and disseminate accurate key performance indicator information at the right time to the right people.
3. To show the importance of decisions surrounding designing and selecting the key performance indicators that align strategy with dashboard-supported business performance management.
4. To expose students to the organizational culture issues faced when deploying business performance management dashboards, particularly with respect to issues of exposure, transparency and accountability.

5. To help students realize the relationship between extra-enterprise dashboards, the types of alliances required and the combined organizational and technical issues surrounding such a deployment.

WAYS TO USE HYPERION SOLUTIONS' RESOURCES IN YOUR COURSES

Along with the BPM flash demo, there are classroom-tested materials you will download that include the following:

- A comprehensive teaching note that suggests specific ways to use all the material in both downloads
- BPM class preparation notes for your students,
- The “*Dashboards at Eden, Inc.*” case introduction with Part A&B case extensions and questions, and
- Student reading materials including:
 - Cranfield University’s “*State of BPM Study*”
 - An IDC white paper on Hyperion’s Master Data Management
 - Houghton et al.’s MISQE Vigilant Information Systems dashboard case study (2004)
 - Noetix dashboard development methodology paper.

The teaching note will provide you with a structure for a class session along with optional emphases based on student constituencies (e.g., MBAs or more technical information systems students). While it is not possible to cover all parts of the teaching note due to space limitations, several highlights will be discussed in the following.

Prior to the class session, it is prudent to have students read the Houghton et al. case (2004) on Vigilant Information Systems (VIS). This rich and well-written case provides practical discussion of both role- and process-based dashboards, and how Western Digital combined those dashboard approaches in their BPM solution. To help students understand what they are reading about in the case, questions and directions for supporting readings are provided in the “BPM class preparation notes” included in the download. Depending on what you might lecture on prior to the case, these suggested readings and preparation questions can require approximately 8 hours of student preparation time. The teaching note provides specific suggestions for how to lead the case discussion, including a suggestion to discuss how dashboards address the ACT part of the VIS process. One may pose the question, “How does the dashboard system enable an executive to take action on the information presented in the dashboards – does it generate e-mail - no, then what does it do?” Students will debate the ACT cycle, and can be guided to the conclusion that ACT is supported through timely discovery of hypothesis disconfirming data being reported through the dashboards. The net result will be to have led students through the complete VIS cycle and how it is different than conducting business with no BPM solution in place. The IDC Master Data Management (MDM) paper can be used in conjunction with the Western Digital case to drive home the rigor of collecting, preparing and then disseminating data through BPM solutions. A main feature of such a discussion relates to reporting latency, and another facet can be to address the positioning of MDM into an organization’s information architecture. Rich class discussion can be directed to the cost vs. cycle time of disseminating data to decision makers. An additional discussion of the complexities of selecting appropriate key performance indicators can be used to conclude this portion of the class session. Instructors may wish to assign additional reading that contrasts business scorecards and dashboards, discusses best practices for building dashboards (e.g., Orts’ 2004 paper included in the download), and the instructor may ask students to consider if spreadsheets could be used to provide a VIS solution (this is addressed in Marr’s 2003 Cranfield University study which is included in the download).

After the time devoted to the case and the readings, a single, continuous chunk of time should be devoted to the BPM download and the Eden case it addresses. The demo shows a set of role-based dashboards, each associated with an executive of the Eden corporation. The information covered in the download is reinforced in a case write-up that should be handed out right after the demo is viewed, along with Part A case questions. The case and the questions are intended for in-class discussion. Following is the text version of the case:

Dashboards at Eden, Inc.

John Strong, CEO of Eden, Inc., championed business dashboards for improving revenue growth, increasing margins, communicating accurate estimates to the financial community and improving innovation and quality. Dashboards are intended to help John build an organizational culture where there is performance visibility. He wants employees to be held accountable for their actions. Eden deployed Hyperion dashboards using tools that manage the flow of data to customized reports that provide top level executives with relevant views into the enterprise. Inna Karlova is one of those executives. As VP of Sales, Ms. Karlova is able to drill down into detailed sales information by region, territory, salesperson, etc. COO Ken Edwards utilizes a dashboard that provides insights into ongoing operations. His dashboard also incorporates models that support and

simulate the impact of different decision scenarios. For example, he can simulate the impact of switching suppliers, and he can even see – in real-time – ongoing assembly line operations. Sue Change, VP of Finance, is clear about how difficult it is to monitor macro and micro financials at the same time – especially in real-time. As finance VP, she does much more than managing P&L reporting. She must address communicating with markets, handling debt, managing cashflows and foreign exchange rates and hedging. All of these must be taken into account in her efforts to build solid forecasts. Sue’s dashboard at Eden is one of the few that include a graphical or spatial dashboard capability. CIO David Lee’s dashboard components are mostly about IT project management. He can view a project’s status, and that status can be shared over the web with consultants, auditors and other external partners. David especially appreciates the ‘self-service’ nature of sharable dashboards, the instant insights they provide the business side of the house, and their relatively low cost of ownership. He uses his dashboard for holding people accountable in three areas: monthly outage management, IT investment performance and compliance project status reporting. Nancy Brunnings is Eden’s Director of HR. Her dashboards have been recently updated to reflect the collection of data from the biannual staff satisfaction survey. Nancy uses workforce planning solutions to help in understanding the impact of adding people to teams. She is even able to track head counts and turnover ratios.

All was going well at Eden, until the newly implemented dashboards were used to pinpoint a problem – a drop in sales. Several VPs immediately used their dashboards to come to the conclusion that delivery problems under the control of COO Edwards were the root cause. Since Edward’s dashboards are so new, he took the blame. But was it really his fault? Could his dashboard provide extra-enterprise information in a timely fashion? Was it always going to be the case the he was going to be the one to catch the heat? What if the sales force was simply overselling the production capability? In order to keep costs low, there were frequent supplier switches – didn’t that mean that late deliveries would be the norm rather than the exception? Edwards wondered if his aspirations to follow in Strong’s footsteps were going out the window.

Figure 3: Eden Case

As can be seen from this version of the case, role-based dashboards have illuminated a problem in sales which is traced back to delivery problems. Part A of the case points out a potential problem with role-based dashboards in that they can result in a “culture of blame.” Lively student discussion will address this issue, as students have stated things like, “This is why they get the big bucks!” Others will discuss how dashboards may only reinforce what organizational culture is already in place. Either way, the discussion provides the instructor an opportunity to really drive home how BPM solutions change the way organizations conduct business. The part B extension of the case provides additional reinforcement for all aspects of the entire set of BPM teaching materials. It also brings out that a next generation of extended enterprise dashboards to support organizational alliances are a likely next step. An instructor may wish to reinforce this element by discussing systems such as Wal-mart’s RetailLink application. The BPM demo is a highly polished, professional and realistic video-like resource with high clarity dashboard demonstrations and with actual metrics and frames representative of those included in the earlier section of this paper. Following are some specific screenshots and relevant role-based dashboards that are addressed in the demo:

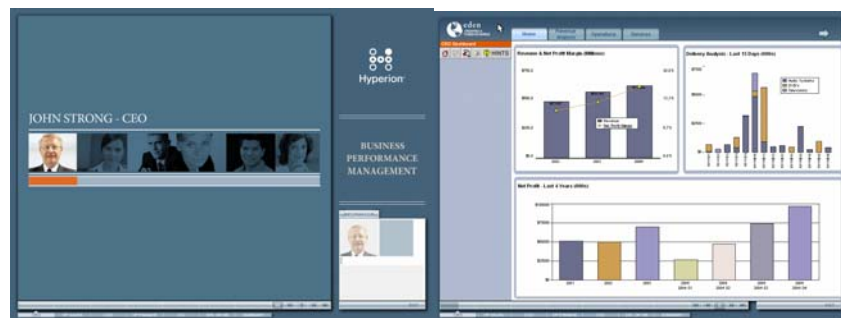




Figure 4: Eden Case Executives and Their Dashboards

CONCLUSION

There are many ways faculty members can use Hyperion resources to support their classes. Courses ranging from information systems to finance, operations and supply chain management will find rich sources for student learning and lively classroom discussion. Many more course resources are also on the way. One is in the area of sustainable development reporting, and another illuminates a global dashboard design to deployment lifecycle project. Please keep watching for new Hyperion resources available on the Teradata University Network, including hands-on dashboard development capabilities!

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