"Bite-sized" Business Intelligence (BI) for Enterprise Risk Management (ERM)

Institute of Internal Auditors - Dallas Chapter

August 5, 2010
Highlights

• State of ERM Adoption
• Enhancing ERM with Business Intelligence (BI)
• What Is Business Intelligence?
  • The Business Case
  • The Solution
  • Implementation Considerations
• Applying BI to ERM
• Q & A
Adoption of ERM – Survey View

67% – Partial/No ERM Adoption

February 2010 North Carolina State University and American Institute of Certified Public Accountants


approximately 300 companies in varying industries
Current State of ERM – Survey View
15% – Mature Process

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Current State of ERM – Survey View

51% – Focus on Operational, Compliance and Financial Risks

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approximately 300 companies in varying industries
Overall, the results indicated the following:

- ERM processes are still evolving
- Will require stronger focus on operational and strategic risks
- Boards recognizing risk oversight responsibilities
  - Level of oversight still greatly varies

Business Intelligence (BI) will play an important role in ERM – organizations need "one version of the truth"
What is Business Intelligence (BI)?

Business intelligence is a broad set of processes and technologies that turn raw data into actionable information.

Traditional features of BI include:

- Reporting
- Dashboards
- Performance Management
  - Metrics / KPIs
  - Scorecards
- Analytics
The Evolution of BI

**Solution**
- Decision Support Systems (DSS)
- Executive Support Systems (ESS)
- Online Analytical Processing (OLAP)
- Data Warehousing / Data Marts / Virtual DW

**Business Objectives**
- Support managers in making decisions
- Provide information to top / senior management
- Enable self service / on demand reporting across the organization
- Allow near real-time access to critical business data
Enterprise BI – Only a Few Paces Ahead of ERM
Analysts Predict Continued Strong BI Market Adoption

- An annual survey of CIOs conducted by Gartner Research consistently identifies BI as a top priority.

- Recent Forrester Research "Latest BI Adoption Trends — Still Strong And Going Ballistic"
Gaining an Understanding of the BI Business Case

- Billions invested to implement ERP and "second wave" technologies
  - Accumulation of transactional data in disparate source systems
- Organizations had grown rapidly prior to 2007
  - Organically and through acquisitions
- "Siloed" reporting processes with no “enterprise” view of the business
  - Most organizations and systems not fully integrated
- Recent recession forced companies to re-focused their BI efforts
  - "Survival" has dictated market position maintenance
  - Growth strategy oriented changed to cost efficiency optimization
  - Emergence of "performance management" moniker
- **Businesses must be able to capitalize on all this rich data**
  - Transactional systems do not adequately facilitate data analysis
  - Typical reporting solutions are manual and time intensive
Gaining an Understanding of the BI Business Case (continued)

- Mature BI solutions "changes the game"
  - Software enables intuitive, real-time access to the disparate data sources
    - Easily accessed by users at all levels of the organization
  - Technology infrastructure is cheaper than ever before
  - Processing power, memory and storage is exponentially faster
- BI can provide companies a competitive advantage in today’s market place
  - Perform real-time operational analysis
  - Better manage KPIs to make accurate / actionable decisions
  - Streamline reporting processes
  - Effectively facilitate the strategic planning process

- These same components also support the ERM
- However, BI is not your typical IT systems initiative
### Common Business Challenges to be Solved thru BI

**Similar Challenges to ERM – Stakes are high with both**

<table>
<thead>
<tr>
<th>The Problem</th>
<th>The Imperative</th>
<th>The Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data is Inaccurate or Inconsistent</td>
<td>Provide Data Quality</td>
<td>• Data is reliable and can be used to support decision making</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Data stewards own key data elements</td>
</tr>
<tr>
<td>Information is Siloed</td>
<td>Establish an Enterprise Perspective</td>
<td>• Standardized metrics by business process across departments, apps, etc</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Single version of the truth</td>
</tr>
<tr>
<td>High Amount of Manual Effort</td>
<td>Automate</td>
<td>• Data extraction / processing is automatic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Solution is scalable to provide for increased data volume</td>
</tr>
<tr>
<td>Reports Are Passive / Rigid</td>
<td>Enable Consumers to Become Producers</td>
<td>• Analysis is placed into users hands</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Users are self sufficient for day to day needs</td>
</tr>
</tbody>
</table>
## Defining What the BI Solution Looks Like

### Successful Solutions — Not Just About Technology

<table>
<thead>
<tr>
<th>User Community</th>
<th>Information Workers</th>
<th>Power Users</th>
<th>Report Consumers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BI Technologies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presentation / Delivery</td>
<td>Office Suites</td>
<td>Portals</td>
<td>Mobile Devices</td>
</tr>
<tr>
<td>Performance Management</td>
<td>Reporting</td>
<td>Dashboards</td>
<td>Visualizations</td>
</tr>
<tr>
<td>Data Mart / Analytics</td>
<td>Metrics / KPIs</td>
<td>Planning</td>
<td>Scorecards</td>
</tr>
<tr>
<td>Data</td>
<td>OLAP</td>
<td>Data Mining</td>
<td>Predictive Analytics</td>
</tr>
<tr>
<td>Integration / Transform</td>
<td>Data Warehouse</td>
<td>Data Marts</td>
<td>Operational Data Store</td>
</tr>
<tr>
<td></td>
<td>Adapters / Toolkits</td>
<td>Extract Transform Load (ETL)</td>
<td>Service Oriented Architecture (SOA)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operations / Source Applications</th>
<th>ERP</th>
<th>Operations</th>
<th>Third-Party</th>
</tr>
</thead>
</table>

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Managing the BI Maturity Model

Close Correlations Can be Drawn to ERM

Information
- Inform
  - Distribute
  - React
- Explore
  - Model
  - Analyze

Action
- Learn
  - Reflect
  - Improve
- Act
  - Prescribe
  - Anticipate

Business Value

Paradigm Change

Business Effort
What to Consider During Implementation of BI
*Putting the Parts Together*

<table>
<thead>
<tr>
<th>The Kitchen</th>
<th>The Dining Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Raw materials transformed into delicious meals</td>
<td>- Food (quality, taste, presentation)</td>
</tr>
<tr>
<td>- Must be highly organized / efficient</td>
<td>- Décor (appealing surroundings)</td>
</tr>
<tr>
<td>- Delivering consistent quality is key</td>
<td>- Service (prompt delivery, received as ordered)</td>
</tr>
<tr>
<td>- Requires talented chefs</td>
<td>- Cost</td>
</tr>
<tr>
<td>- For safety reasons, patrons are not allowed in the kitchen</td>
<td></td>
</tr>
</tbody>
</table>

"Data Warehouse Dining Experience" – The Kimball Group
Understanding BI Vendors/Solutions
Choosing the Right Technical Foundation

- "Full-stack" vendors
  - Microsoft
  - IBM (Cognos)

- Enterprise Applications
  - SAP (Business Objects)
  - Oracle

- "Pure-play" niche vendors
  - Information Builders
  - MicroStrategy
  - SAS
  - Others
# Holistic BI Perspective is Critical to Success

## Fundamental Considerations

<table>
<thead>
<tr>
<th>Typical BI Perspective</th>
<th>Our Perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IT Driven</strong></td>
<td><strong>Business Driven</strong></td>
</tr>
<tr>
<td>⚪ Collect all the data</td>
<td>⚪ Align outcome with strategy</td>
</tr>
<tr>
<td>⚪ Continually &quot;proving value&quot;</td>
<td>⚪ Top-down approach</td>
</tr>
<tr>
<td><strong>“Boil the Ocean” Approach</strong></td>
<td><strong>Pragmatic Approach</strong></td>
</tr>
<tr>
<td>⚪ Collect all requirements</td>
<td>⚪ Flexible, scalable foundation</td>
</tr>
<tr>
<td>⚪ One answer to every user</td>
<td>⚪ Define success criteria</td>
</tr>
<tr>
<td>⚪ Create “enterprise” warehouse</td>
<td>⚪ Ensure metrics are actionable</td>
</tr>
<tr>
<td><strong>Long Dev Cycle</strong></td>
<td><strong>Rapid / Agile Dev Cycle</strong></td>
</tr>
<tr>
<td>⚪ Large investment</td>
<td>⚪ Deliver quick wins</td>
</tr>
<tr>
<td>⚪ Minimal incremental value</td>
<td>⚪ Prove value / gain buy-in</td>
</tr>
<tr>
<td><strong>Fixed Requirements</strong></td>
<td><strong>Evolving BI Needs</strong></td>
</tr>
<tr>
<td>⚪ Assumes static needs</td>
<td>⚪ Select scalable tools</td>
</tr>
<tr>
<td>⚪ Limited flexibility</td>
<td>⚪ Hit “moving” targets</td>
</tr>
<tr>
<td>⚪ Less user discovery</td>
<td>⚪ Disciplined but flexible</td>
</tr>
</tbody>
</table>

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Approach and Methodology Attributes
Success with Rapid, Pragmatic yet Agile Methodology

Rapid / Agile Implementation Methodology

- Requirements
- Design
- Development
- Test/Validation
- Go Live / Support

BI Foundation Project

Initiative 1

Initiative 2

Initiative 3

Initiative 4
• Establish a solid foundation
  – Operations, Reporting and Compliance oriented
  – Leverages world-class technology
  – Creates "one version" of the truth
  – Enables better decision making
  – Reduce inherent risks associated with data
• Increased emphasis on Strategic and Operational
  – Identify, monitor and manage "fuzzy data"
  – Better align reality to strategy
Enabling ERM With BI – Some Considerations

- Identifying enterprise level risks – bring it all together
  - "You can't manage it if you can't measure it"
  - Implement "drill-through to detail" ability from the top
- Enable risk mitigation and continuous monitoring across the enterprise
  - Facilitate the ERM process with strong and timely governance
- Track / trend ERM over time
  - Trending analysis will allow you to track direction and progress
- Enable predictive analysis to make proactive risk management decisions
  - Begin to understand the potential "velocity" of your risks
Basic Heat Maps with "Drill-through" to Details
Significant Value Delivered Using Basic BI Techniques
Q & A