

2011 ERM Symposium
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Continuous Controls Monitoring
Futuristic Approach to Enterprise Risk Management

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Agenda

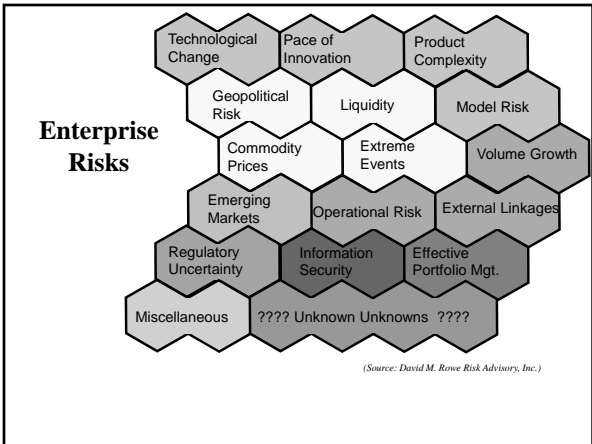
- I. Changes In Corporate Environment**
- II. Changes in Enterprise Risks**
- III. Enterprise Risk Management**
- IV. Continuous Controls Monitoring (CCM)**
- V. Other Related Tools and Concepts**
- VI. Conclusion**

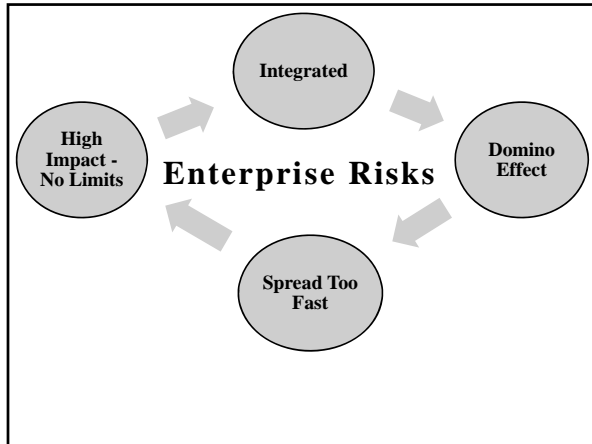
I. Changes In Corporate Environment

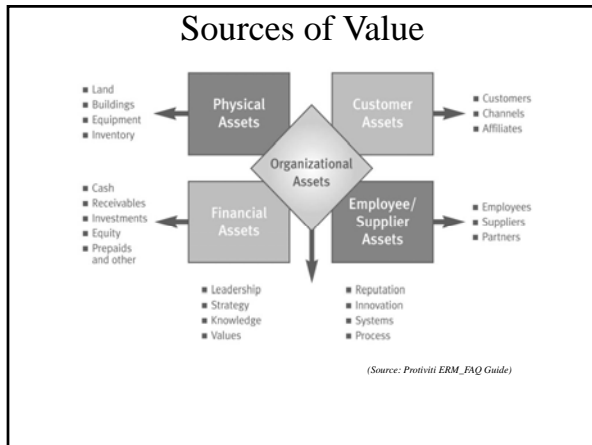
Corporate Environment

- **Globalization – Acquisitions/Mergers**
- **Outsourcing**
- **Focus on Core Business**
- **Technological Advancement**
 - **Integrated Transaction Processing**
 - **Paperless Environment**
- **Media**
- **???? Unknown Unknowns ????**

II. Changes In Enterprise Risks

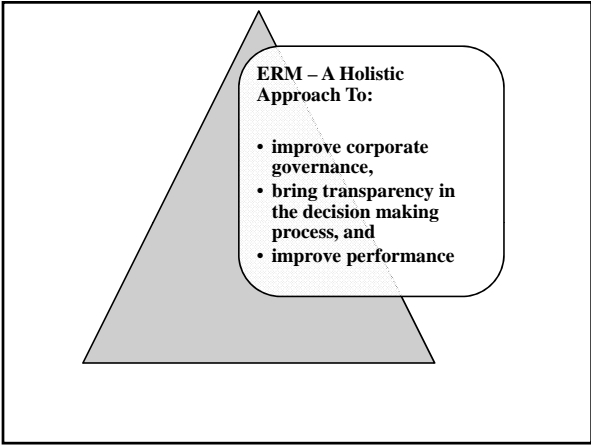








III. Enterprise Risk Management



- ERM Tools, Standards and Frameworks**
- COSO ERM Framework
 - Sarbanes Oxley
 - Basel II
 - Solvency II
 - COBIT
 - PCI DSS
 - NIST
 - And more ...

IV. Continuous Controls Monitoring

Continuous Controls Monitoring

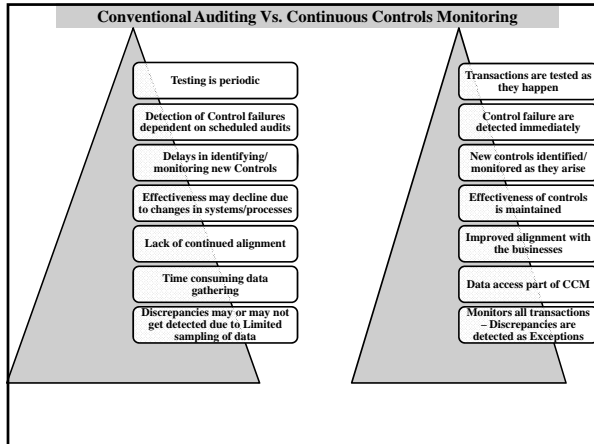
- **“... a process that management puts in place to ensure that its policies, procedures, and business processes are operating effectively”**

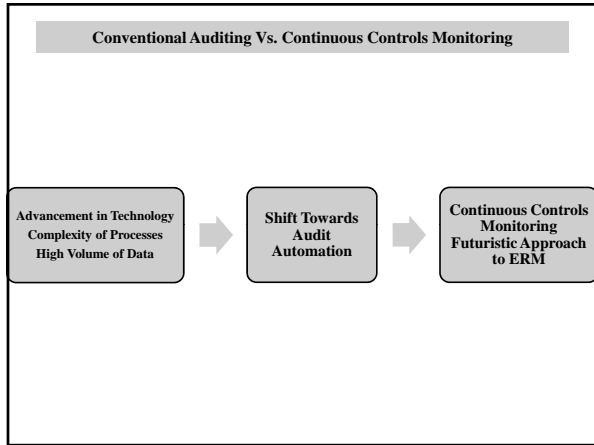
(Source: The IIA's Global Technology Audit Guide , GTAG 3)

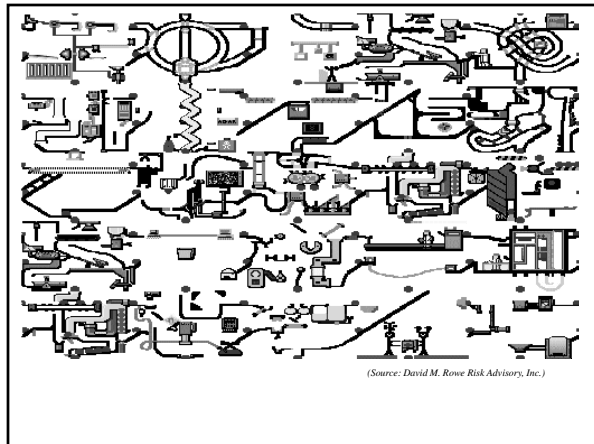
Continuous Controls Monitoring

“Continuous controls monitoring is an emerging governance, risk and compliance technology that monitors controls in ERP and other financial applications to improve financial governance, monitor and verify access and transactional rules, and automate audit processes”

(Source: Gartner Inc. Publication ID Number: G00174594, March 2010)







Continuous Monitoring Tools

- **Built-in Software in ERPs** - Oracle, SAP etc.

- **Specialized Software, Data Analytics and Queries** - Approva, ACL, IDEA, SAS, Basel II, SQL, Crystal Reports, Business Objects, Caseware, etc.

(Gartner's research study presented in the form of a Magic Quadrant is a good source for information about various vendors, www.gartner.com)

Continuous Controls Monitoring

- **Business Cycles/Areas:**
 - **Purchase To Pay**
 - Goods and Services
 - Warranties and Repairs
 - Travel and Entertainment
 - PCards
 - **Sales to Cash**
 - Order Management
 - Receivables
 - Sales Promotions

Continuous Controls Monitoring

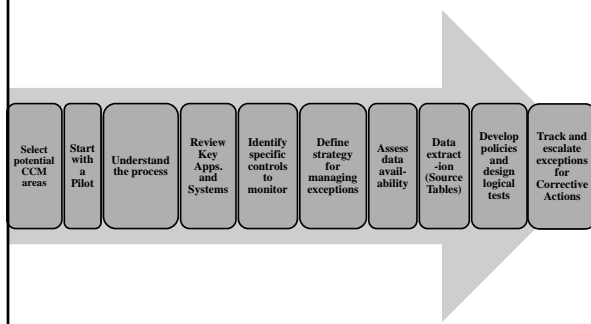
- **Manufacturing**
 - MRP and Inventory Control
 - Capacity Planning
 - Quality Assurance
- **Human Resource**
 - Policies and Procedures
 - Payroll
- **Corporate Financials and Benchmarks**
 - Divisional KPIs
 - Product Performance and Profitability
 - General Ledger

Continuous Controls Monitoring

- **Information Technology**
 - Identity and Access Management (IAM)
 - Database Activity Monitoring (DAM)
 - Log Management
 - Change Management
 - Vulnerability Management

Financial Industry Credit Card Usage Monitoring

CCM at the City of Toronto



Corporate Information on the Web

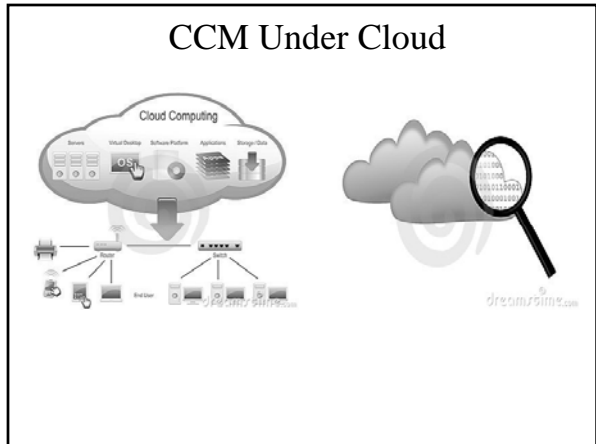


Extensible Business Reporting Language

- Developed by XBRL International Inc.
- Transparent interchange of Financial and Business data from the Web
- Drill down capability and discovery of underlying information
- Comparability across industries
- Royalty-free and open standard
- Continuous Auditing through use of generalized audit software (e.g., ACL/IDEA)

For more information, please visit: www.xbrl.org

CCM Under Cloud



Cloud Computing

“On-demand self-service Internet infrastructure where you pay-as-you-go and use only what you need, all managed by a browser, application or API”

(Source: www.servepath.com)

A lot of research material is also available at: <http://www.nist.gov/til/cloud/index.cfm>

Cloud Computing Emerging Issues

- Control over Physical Security
- Control over Location of Data
- Encryption and Authentication
- Privacy and Integrity of data, Regulatory Compliance
- Change Management/System Compatibility
- Mobile IT users
- Data at risk of seizure - if other company violates
- Strange Neighbors
- Business Continuity

Controls Monitoring Under Cloud

The Cloud Security Alliance (CSA) controls framework provides:

- detailed understanding of security concepts and principles aligned to the CSA guidance in 13 domains
- business information security control requirements
- knowledge about security threats and vulnerabilities in the cloud
- cloud taxonomy and terminology, and security measures implemented in the cloud.

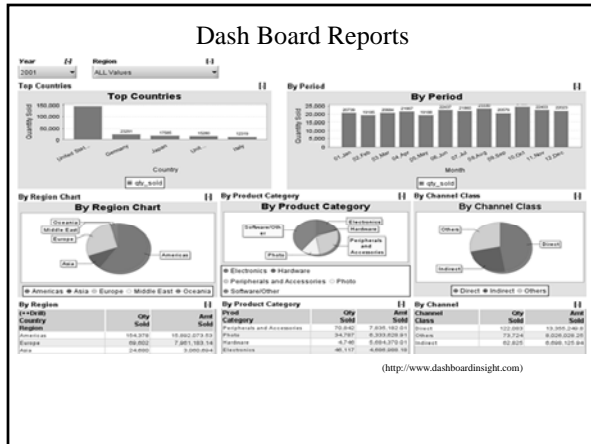
(Source: <http://www.cloudsecurityalliance.org/cm.html>)

V. Other Related Tools and Concepts

Other Related Tools and Concepts

- Dashboard Reports
- Balanced Score Card
- CMM and Six Sigma Models

Dash Board Reports

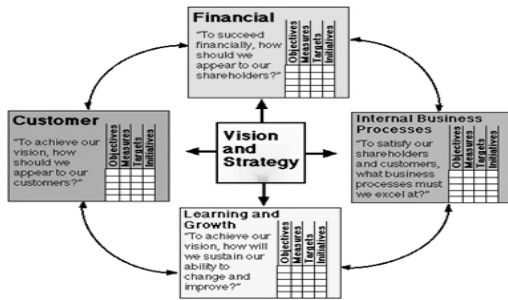


Balanced Score Card

“The balanced scorecard is a strategic planning and management system that is used extensively in business and industry, government, and nonprofit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals.”

(Source: <http://www.balancedscorecard.org>)

Balanced Score Card Model



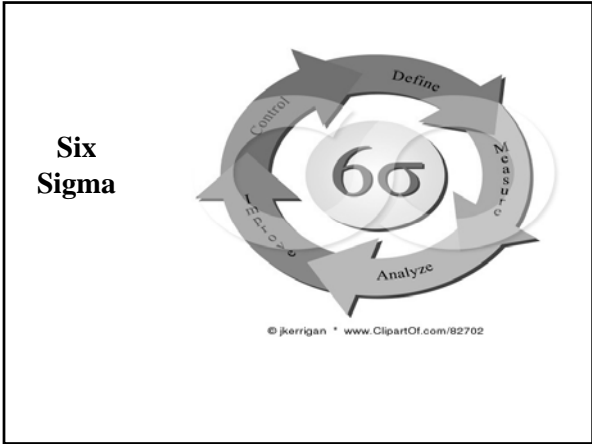
(Adapted from *The Balanced Scorecard* by Kaplan & Norton)

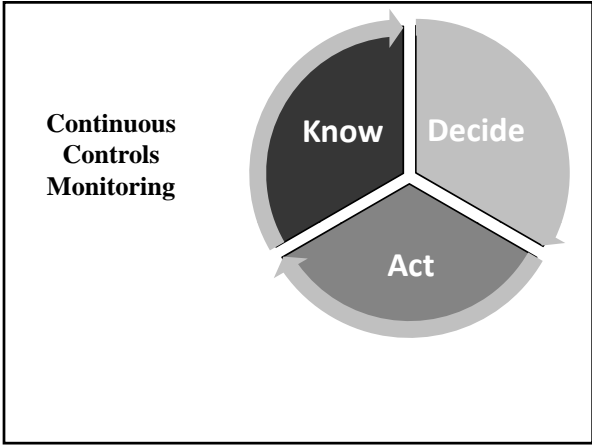
Capability Maturity Model

Five stages of Maturity:

1. Initial
2. Managed
3. Defined
4. Quantitatively Managed
5. Optimizing







VI. Conclusion

Conclusion

Issues to watch for:

- Lack of Strategic Alignment
- Implementation Schedule
- ROI
- False Positives
- Exceptions become too routine
- Burden on IT Resources
- Scalability of application
- Room for Improvement

Conclusion

Benefits:

- Detects and prevents fraud, waste and errors
 - Monitor every transaction
 - Automate routine testing
 - Extracts exceptions from a large volume of transactions
 - Facilitate integrated monitoring Enterprise wide
- Timely identifies/communicates control exposures & breaches
- Reduced cost of auditing and compliance
- Improves performance through continuous monitoring
- Assist in planning Operational Audits using improved data quality

**Bottom
Line
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Thank You

Questions?

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