Continuous Controls Monitoring
ISACA, Houston Chapter

August 17, 2006

Purpose of Discussion

- **Understand impact of Continuous Controls Monitoring (CCM) on the Information Systems Audit community**

- **To perform this analysis, we need to explore:**
  - *What is driving growth of the CCM market?*
  - *What services can existing CCM tools provide?*
  - *How does CCM impact audits and SOX reviews?*
  - *Where is the CCM market heading/evolving?*

- **From there, we can discuss how to prepare:**
  - *What opportunities exist due to the CCM growth?*
  - *What education should the audit community be focused on?*

Defining Continuous Controls Monitoring (CCM)

The use of a combination of monitoring software and defined business rules to detect, prevent and monitor the operating effectiveness of internal controls

- **Key attributes of effective CCM programs include:**
  - *Effective Control Automation, including IT General Controls*
  - *Continuous access control and segregation of duties management and monitoring (Role Management and Monitoring)*
  - *Ability to monitor ERP configuration settings (Configuration)*
  - *Real-time notification of anomalies from expected outcomes based on established business rules (Transaction)*

Why is CCM an Important Topic Today?

- **Pre SOX, many public companies had limited awareness and understanding of their control environment.**
  - *IT General Controls*
    - *Access Administration*
    - *Change Control*
  - *Application Controls*
    - *Configuration*
    - *Process*
  - *IT-Dependent Manual Controls*
  - *Manual Controls*

- **Pre SOX, many public accounting firms placed little or no emphasis on controls and operational audits**

Cost of SOX *(Year 1)*

- **Rule-of-thumb budget guideline for SOX compliance was $1M in expenditure* for every $1B in annual revenue.**

  * (including cost of internal and external auditors)

Average Company Sales (US $)	Average Cost of Section 404 Compliance	Analysis
0 – 250 Million	1.56 million	Greater than estimations
250 – 500 Million	1.71 million	Greater than estimations
500 – 750 Million	1.78 million	Greater than estimations
750 – 1 Billion	2.03 million	Greater than estimations
1 – 2 Billion	2.4 million	Greater than estimations
2 – 7 Billion	Insufficient data	Insufficient data
7 - 10 Billion	10 million	Greater than estimations

*(Sarbanes-Oxley Implementation Costs: What companies are reporting in their SEC filings – Feb 2005, A.R.C. Morgan)*

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Value of Utilizing Application Controls

Cost of Control Testing

Manual Controls

Application Controls

Company Size and Complexity
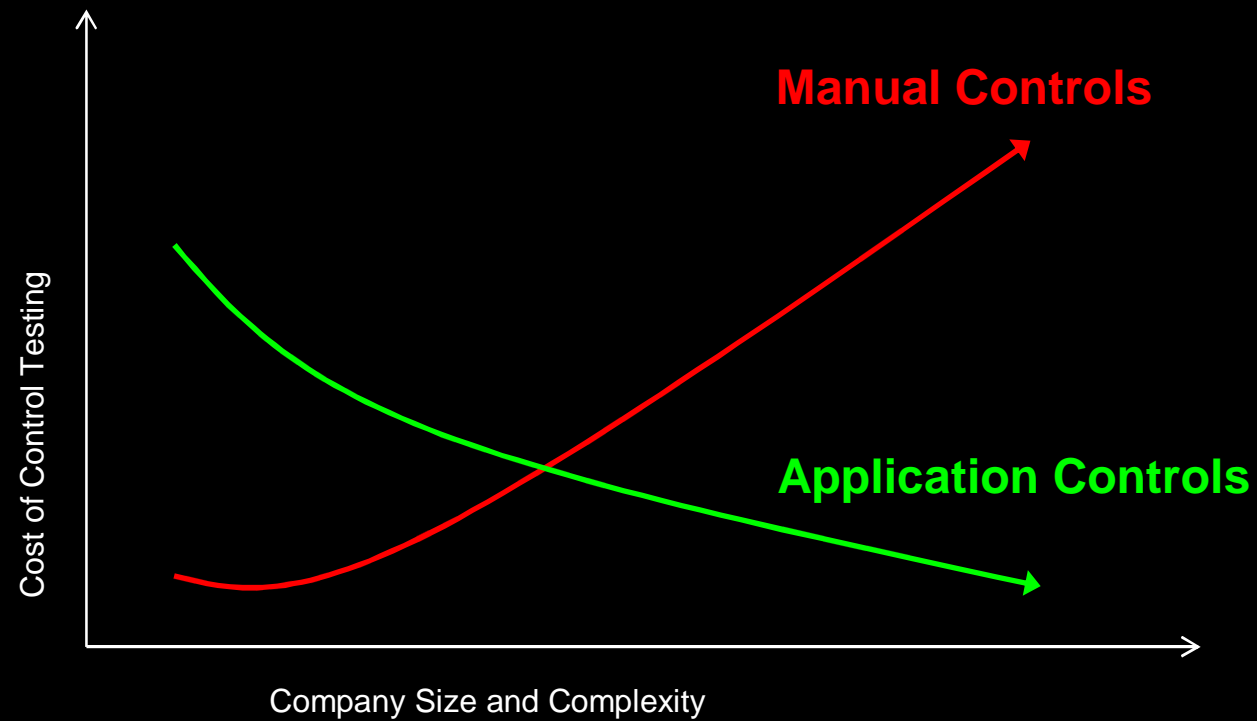
(IT Control Objectives For Sarbanes-Oxley , 2nd Edition - April 30, 2000, IT Governance Institute)

Audit-based vs. CCM Approach
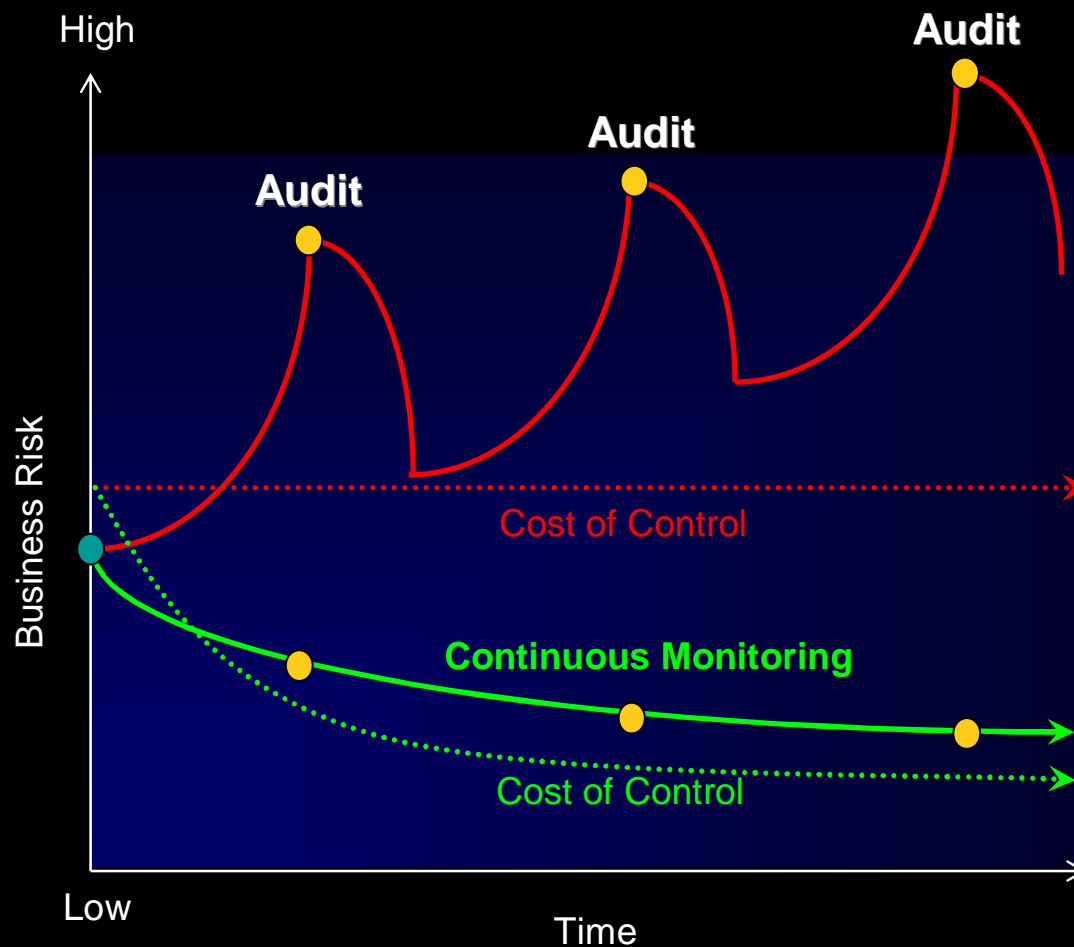
Audit Based
- Reactive
- Limited Business Value
- Costly
- Investor concerns

CCM Based
- Continuous & Proactive
- Comprehensive
- Integrated
- Business Impact
- Cost Effective

Diagram labels: High, Low, Business Risk, Time, Audit, Audit, Audit, Cost of Control, Continuous Monitoring, Cost of Control

CCM Benefits

- There are substantial benefits to implementing Continuous Controls Monitoring tools.

Economic Benefits

- Lower transaction costs
- Reduced risk of fraud
- Lower SOX costs
- Increased shareholder confidence

Performance Benefits

- Real-time identification and resolution of transaction issues
- Improve business processes and operational efficiencies

Assurance Benefits

- Continuous monitoring of 100% of transactions
- Sarbanes-Oxley compliance
- On-going evaluation of control effectiveness

Increased Focus on Profitability and Growth

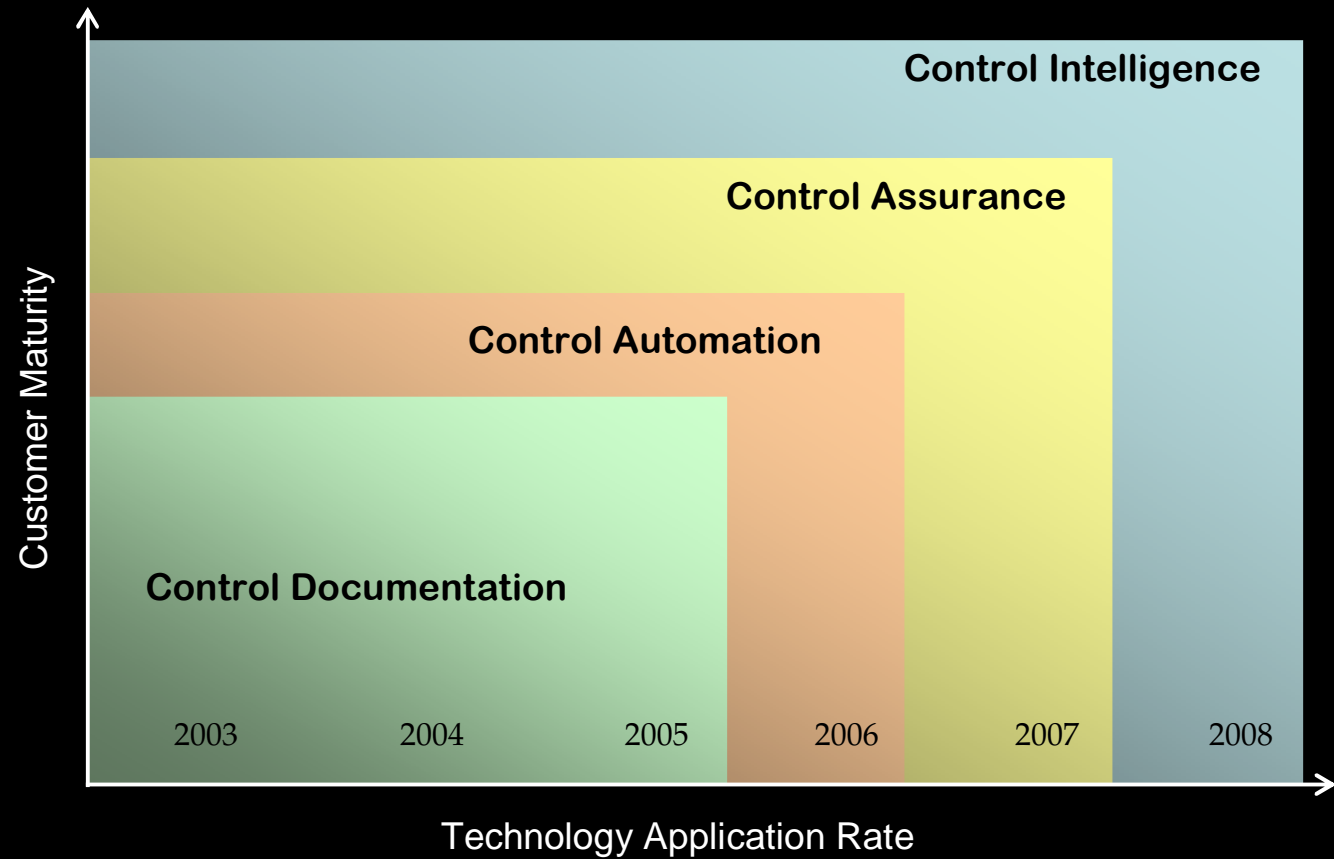# How has increased interest in Continuous Controls impacted the CCM industry?

CCM Tools Today

Pre-SOX	Post-SOX
Focused on a single ERP	▪ Perform test of controls on all major ERPs (SAP, PeopleSoft, Oracle) with ability to expand to other products (Hyperion, JDE, Great Plains)
Analyzed Segregation of Duties and Sensitive Access	▪ Perform complex access, process and configuration control analysis ▪ Perform data and transactional analysis for fraud detection ▪ Perform cross-application analysis ▪ Perform User Administration and What-if analysis
Marketed tools to companies that had implemented or were planning to implement the ERP	▪ Marketing tools to both the audit firms (point-in-time) and companies that have implemented or are planning to implement ERP/Legacy applications

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Growth of CCM Market

Chart axes: Customer Maturity (vertical) vs. Technology Application Rate (horizontal)

- Control Intelligence
- Control Assurance
- Control Automation
- Control Documentation

Years: 2003, 2004, 2005, 2006, 2007, 2008

(Continuous Control Monitoring & Audit, Approva Corporation, 2006)

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- **Control Documentation**
  - *Document the control environment*
  - *Develop an understanding of the key controls and their impact on the business*

- **Control Automation**
  - *Implement and increase reliance on application controls*
  - *Automate the monitoring and management of processes & controls*
  - *Implement processes to perform real-time resolution of issues*

- **Control Assurance**
  - *Allow companies to focus on improving business performance by performing continuous monitoring of financial and operational controls, creating an independent and auditable compliance process*
  - *Provide confidence regarding the quality of information processed and produced by IT systems*

- **Control Intelligence**
  - *Allow for companies to realize net gains to bottom-line results by proactively identifying opportunities to reduce operational costs, minimize profit erosion, and mitigate the risk of fraud, while driving down the cost of compliance.*

CCM Implementation: Keys to Success

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Implementing CCM: Keys to Success

- **Understanding differences between CCM tools**
  - *CCM tools have different strengths, weaknesses and capabilities that need to be assessed prior to selection.*
    - *Business processes (P2P, O2C, FSCP, Payroll, T&E)*
    - *Test of controls (Access & SOD, Configuration, Transactional)*
    - *Cross-application analysis (multi-ERP/financial applications)*

- **Assessing CCM tools based on Use Case**
  - *Various issues may arise based on company's ERP-financial application environment and use case scenario*
    - *Connectivity to financial applications*
    - *Business rules limitations*
    - *Restrictions to extract company data for detailed analysis*
    - *Cross application analysis*

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- **Development of Business Rules**
  - *CCM default business rules do not directly map to the company's controls environment, thereby:*
    - *Increasing risk of false positives*
    - *Impacting ability to establish and maintain SOX compliance and reliance*
    - *Reducing ability to test for fraud*

- **Standardizing Company's Controls Environment**
  - *Implementing standard key application controls will:*
    - *Improve quality of monitoring and reporting*
    - *Reduce false positives*
    - *Improve ability to perform maintenance of the business rules as the company's controls environment changes*

IT Audit Opportunities

Opportunities for IT Auditors

Category	Service
Product Assessment and Selection	▪ Identify Client/Company Requirements ▪ Identify and Present Software Options
Implementation of CCM Tool	▪ Assist in Resolution of Implementation Issues ▪ Perform Functionality Testing
Design and Implementation of Control Structure	▪ Understand Control Environment ▪ Develop Test of Control Structure ▪ Implement Control Structure
Monitor Controls	▪ Develop Procedures for Monitoring and Reporting Control Violations ▪ Perform Review of Controls and Report Results ▪ Perform Fraud Analysis

Opportunities for IT Auditors (cont.)

- **Because current CCM tools are focused on SOX-related business processes, other areas key to operations and profitability are not supported**
  - *Customer Relationship Management*
  - *Supply Chain Management*
  - *Protection of intellectual property*
  - *Safeguarding non-financial information*

How to Prepare for Upcoming Changes

- **Education**
  - *CCM Tools*
    - *Improve understanding of existing tools*
  - *Business Processes*
    - *Improve understanding of key financial and operational business processes*
  - *ERP Training*
    - *Understand ERP controls environment and capabilities*

- **Market Development**
  - *Business Development*
    - *ROI*
    - *Process Improvements*
    - *Reduce Inefficiencies and Fraud*

Thoughts for the Road

- **How prepared are you to meet the changing market?**
    - *Knowledge of business processes*
    - *Awareness of CCM tools capabilities*
    - *Understanding of ERP controls capabilities*

- **How prepared is your organization to provide services?**

- **What development is required to prepare your organization?**

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Management Consulting

- Business & IT Strategy
- SOX Compliance
- Due Diligence
- M & A Support

- Supply Chain Management
- IT Governance
- Project Management
- Business Optimization

Business Technology

- Enterprise Solutions
- Application Development

- Business Intelligence
- System Integration

Managed Services

- Executive IT Services

- Infrastructure Outsourcing

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Appendix

Virsa ComplianceOne™

- **Multi-platform: ERPs and Legacy**

- **Business Processes:**
    - *Procure-To-Pay*
    - *Reconcile-to-Report*
    - *Order-to-Cash*
    - *IT Controls*

- **Access Control Suite:**
    - *Addresses access administration and SoD*
    - *Performs Critical Transaction Monitoring*
    - *Supports Enterprise role definition, change control*

- **Process Control Suite**
    - *Deploys configurable automated controls for key business processes and manages the compliance process for custom controls*

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ACL CCM Solutions

- **Multi-platform: ERPs and Legacy**

- **Business Processes:**
  - *General Ledger*
  - *Payroll*
  - *Purchase-to-Payment Cycle*
  - *Order-to-Cash*
  - *Purchasing Cards*
  - *Travel & Entertainment*

- **For each module, ACL CCM:**
  - *Analyzes User Authorization & SoD*
  - *Performs Critical Transaction Monitoring*
  - *Provide detailed analytics, identify transactional exposures*
  - *Perform proactive SoD analysis*

Approva Bizrights

- **Multi-platform: ERPs and Legacy**

- **Business Processes:**
  - *Procure-To-Pay*
  - *Financial Close*
  - *IT Controls*
  - *Order-to-Cash*
  - *Payroll*

- **Application Control Suite:**
  - *Addresses access administration and SoD*
  - *Performs Critical Transaction Monitoring*
  - *Performs enterprise role definition, change control*

- **Process Control Suite**
  - *Analyzes configurable automated controls for business processes and manages the compliance process for custom controls*