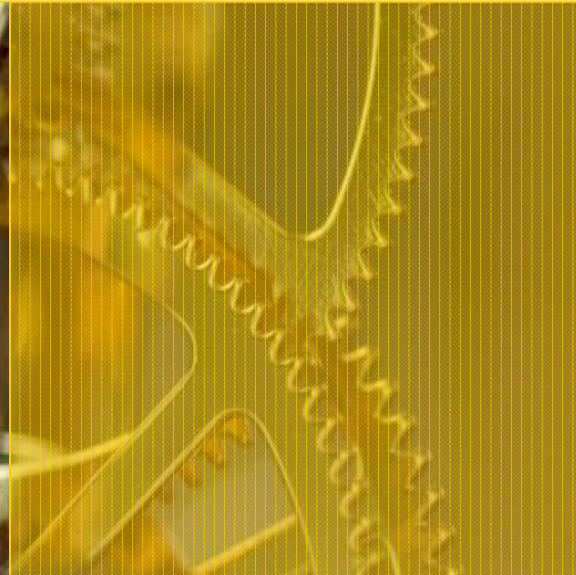


Audit Management Systems: Functionality, Benefits and Considerations for Implementation

ISACA Calgary Chapter Luncheon
February 17, 2009



Chris Ryley, CIA



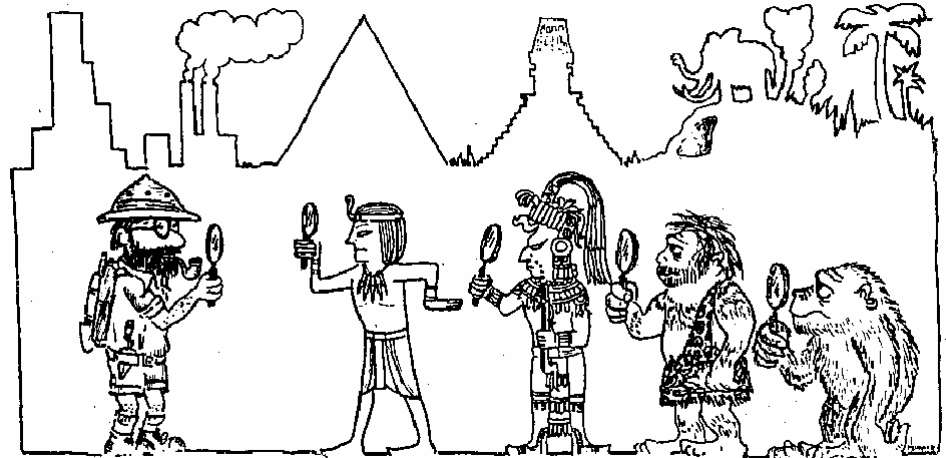


Overview

- Brief history of audit automation
- Why automate?
 - Benefits and Efficiencies
- Audit Management System Components and Functionality
- Implementation Considerations

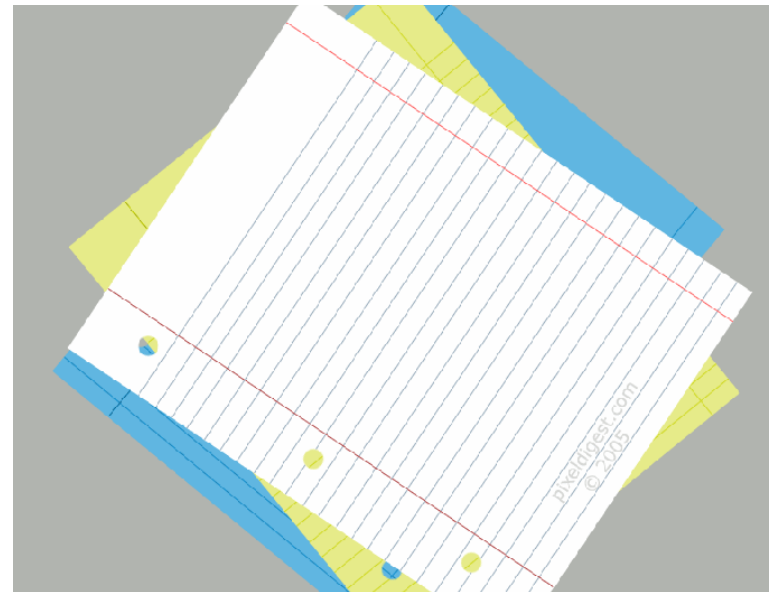
Audit Automation – where have we come from?

- Early '90s – social anthropology study
 - Auditors – essentially documenters
 - 50 % of time documenting & reviewing
 - 22 % of time on admin & planning
 - 28 % of time auditing
- How could more value be added to the audit process?
- Spend less time on low value-add activities
- Focus on value-add activity
 - Auditing



First Attempts at Automation

- Electronic Working Papers
 - Focus on storing of Word / Excel documents
 - Cross referencing
 - Sign-off – completed and reviewed





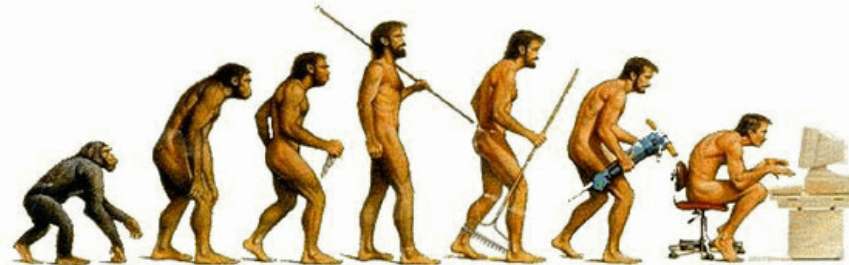
Evolution of Audit

- Then
 - Small and “less important”
 - Focus on financial audits
 - Re-performing same procedures every year
- Now
 - High profile
 - Important part of broader governance infrastructure
 - Need to be risk-focused
 - Manage resources (even/especially if limited)
 - Manage and report on costs
 - Ensure recommendations get implemented



How has Audit Automation kept up?

- Electronic Working Papers replaced by [Audit Management Systems](#)
- Focus on:
 - Complete solution
 - Integration of functionality
 - Data flow
 - Ease of access to appropriate information
 - Integration / interoperability with complementary tools
 - Internal Controls Documentation, GRC





Why Automate?

- Compliance with IIA Standards
 - 2007 IIA Emerging Issues report included these recommendations following from results of external QA reviews
 - Formalize the annual audit planning and risk assessment process
 - Use metrics to compare actual use of resources to the budget
 - Develop and enforce working paper standards, including sample formats, documentation requirements, indexing, and cross-referencing techniques with sufficient flexibility to serve as guidance for all types of audits, reviews, and evaluations
 - Enhance supervision of auditors by conducting/documenting reviews of audit work and results at key milestones rather than just at the end of the engagement
 - Improve the timeliness of audit reports
 - Audit Management Systems can contribute to addressing these recommendations



Why Automate? Cont'd

- Add efficiencies and effectiveness in the following activities
 - Risk Assessment
 - Distributed self assessments to feed risk assessment process
 - Scheduling
 - Database scheduling tools far more efficient and powerful for larger teams as compared to Excel-based tools
 - Efficient reporting
 - Easy viewing by resources
 - Working papers
 - Knowledge sharing of best practices
 - Audit program content
 - Cross referencing
 - Efficient reporting



Why Automate? Cont'd


- Add efficiencies and effectiveness in the following activities
 - Time and Expense Capture
 - Efficient reporting
 - Project Tracking
 - Monitor the progress of individual projects
 - Issue Tracking and Follow up
 - Common tool for use audit and management
 - Email notifications
 - Workflow
 - Reporting efficiencies
 - Audit management
 - Senior management
 - Audit Committee
 - Data mining
 - Quickly search across historic projects and issues



Why automate? Cont'd

- Increasing efficiencies will reduce audit cycle time
 - Recent PwC study¹ indicated lengthy cycle times can erode stakeholder support of internal audit
 - Factors contributing to lengthy cycle times included limited use of electronic work papers and other technology tools
- Drive standardization and consistency throughout the audit process
 - Particularly important with less experienced or new staff
 - Reduced coaching/guidance requirements



¹ PwC 2008 State of the internal audit profession study



Why others have chosen to automate: 2008 IIA GAIN¹ Survey – Internal Audit Workpaper Automation

1: Does your internal audit activity use an automated workpaper tool (e.g., TeamMate, AutoAudit, etc.)? Please answer 'no' if you utilize a manual method or a general office tool such as Microsoft Office.

(Respondents could only choose a **single** response)

Response	Chart	Frequency	Count
Yes		52.8%	186
No		47.2%	166
Not Answered			1
		Valid Responses	352
		Total Responses	353

¹ Global Audit Information Network

Why others have chosen to automate: 2008 IIA GAIN Survey – Internal Audit Workpaper Automation

5: What is the reasoning behind your decision to use this tool?

Response	Frequency	Count
Automation/consistency	24.4%	40
Best Fit	17.7%	29
Cost	6.7%	11
Easy to use	6.7%	11
Efficiency	36.6%	60
Inherited	3.1%	5
Meets needs	2.4%	4
Microsoft compatible	2.4%	4
	Valid Responses	184
	Total Responses	186

Why others have chosen to automate: 2008 IIA GAIN Survey – Internal Audit Workpaper Automation

6: What elements of your current tool do you most prefer? (choose all that apply)
(Respondents were allowed to choose **multiple** responses)

Response	Chart	Frequency	Count
Ease of use		64.0%	119
Enhanced quality of the audit workpapers		50.0%	93
Facilitated information sharing		69.4%	129
Version control management		25.8%	48
Assisted in Quality Assessment Review compliance		34.4%	64
Enhanced approval tracking		57.5%	107
Ensured consistency in the department's policies and procedures		53.8%	100
Reduced the cost and time of audit clerical work (cross-referencing, filing, backing-up workpapers)		55.9%	104
Enhanced workpaper and data security (encryption)		33.3%	62
Coaching notes management		36.6%	68
Contributed to the department's ability to attract and keep the best individuals		8.1%	15
Other (specified below)		7.5%	14
		Valid Responses	186
		Total Responses	186

Why others have chosen to automate: 2008 IIA GAIN Survey – Internal Audit Workpaper Automation

7: What are your least preferred or most difficult problem areas with your current tool?
(Respondents were allowed to choose **multiple** responses)

Response	Chart	Frequency	Count
Not intuitive and required too much training		16.7%	31
Did not enhance audit workpaper quality as expected		11.8%	22
Did not assist or change Quality Assessment Review findings		2.7%	5
Approval tracking not effective		1.6%	3
Version control not effective		5.4%	10
Consistency in department's policies and procedures was not enhanced		8.1%	15
Audit efficiency remained the same or deteriorated		15.6%	29
Workpaper and data security		2.7%	5
Coaching notes are difficult to manage		11.3%	21
IT related issues decreased the performance of the automation tool		24.2%	45
Experienced replication errors		15.1%	28
Benefits do not outweigh the cost		4.3%	8
Other (specified below)		26.9%	50
		Valid Responses	186
		Total Responses	186



Primary Components of an Audit Management System

- Planning
 - Risk Assessment
 - Scheduling
- Conduct and Execution
 - Electronic Working Papers
 - Knowledge Management
- Engagement Management
 - Time and Expense Capture
 - Project Tracking
- Post-audit Activities
 - Issue Tracking
 - Ad hoc Queries and Reporting


Risk Assessment - Functional Overview

- Recommendation by the IIA to formalize planning and risk assessment process
 - Ensure audit universe is known and all entities considered
 - Focus on risk-based auditing
- Adds structure and rigour to risk assessment process
- Consistent with IC Framework(s)
 - E.g., COSO
 - Define relationships between organizational Objectives, Risks, and Controls
- Distributed assessments add efficiencies in data gathering
- Integration with ERM / ORM?

Objectives and Risks			
Title	Category		
Strategically define e-business for Eastern Enterprises and identify opportuniti	Skandia Objective		
Operations are not cost-effective compared to best practice	Operational		
Systems do not meet user needs	Operational		
Adverse market conditions	Credit		
Research global market potential and develop recommendations to determine i	Skandia Objective		
Evaluate outsourced relationships to determine value.	Skandia Objective		
Develop and document formal risk management disciplines.	Skandia Objective		
Develop a business case with implementation plan for utilisation of alternative f	Skandia Objective		

Assess Risk per affected Entity:			
Organizational Entity	Inherent		
Title	Impact	Likelihood	Total
Corporate Accounting	Low	Low	1
Financial Reporting	Low	Low	1
Network Services	Medium	Medium	2
Point of Sale System	Medium	Medium	2
Project Management Office	Low	Low	1
Market Research	Low	Low	1
Planning	Low	Low	1

Controls	
Title	
Study to assess current practices to best practices underway.	



Risk Assessment – Considerations

- Flexible entity structure
 - Change as your organization changes
 - Ability to assess entities at any level in the audit universe
- Flexible risk scoring capabilities
 - Ability to score both inherent and residual risk
 - Ability to customize the risk scoring formula
 - Ability to customize metrics/variables
- Auditor selection of projects included in audit plan – should not be set by tool
- Flexible reporting capabilities
 - Output to different formats
 - Customizable reports
- Distributed assessments
 - Ability for management to contribute information to risk assessment exercise
 - Cost of management's use of tool
- Roll forward all or portions of a prior year's assessment

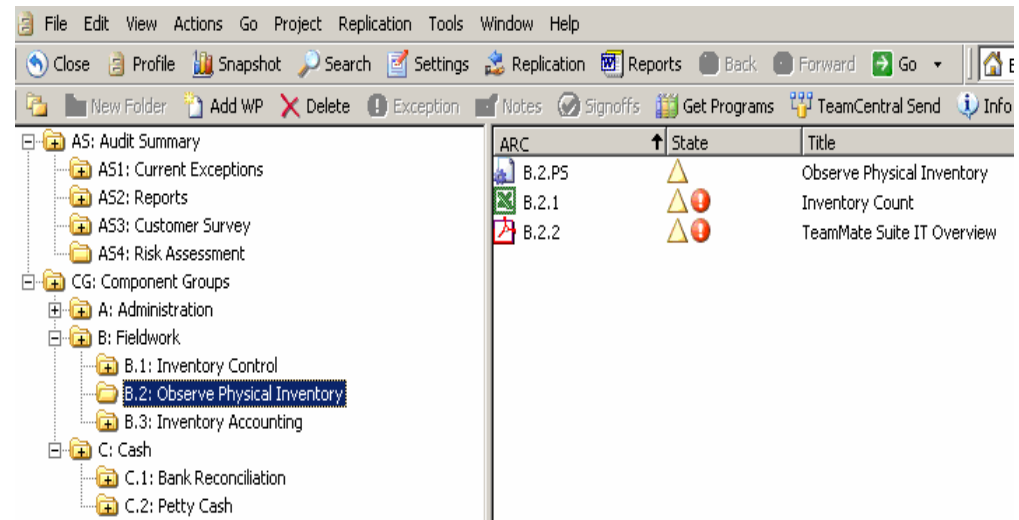


Scheduling - Considerations

- Flexibility of views
 - Views by project, resource, etc
- Ease of use
 - Drag 'n drop scheduling of projects / resources
- Repository of resource skills, capabilities, etc.
- Powerful Reporting
 - Filters, output type
- Ease of access for remote users
- Transfer to calendar system

Electronic Working Papers – Functional Overview

- Drive your methodology
- Flexible, logical layout
- Audit programs and procedures in forms, not merely attachments
- Automated indexing
- Work paper management and cross-referencing
- Assign responsibility, sign-off & review
- Visual indicators of status, etc.
- Project summaries
- Reporting
 - Add efficiencies to process





Electronic Working Papers - Considerations

- Powerful and flexible reporting
 - Two-way data flow – changes in report documents can update application's database
- Support for true risk-based auditing
 - Linkage of risks, controls and procedures within project to risk assessment
 - Ability to evaluate post-audit risk or control effectiveness
- Highly configurable – ability to capture the information needed to support your audit methodology and reporting requirements
- Replication model – ability to work while disconnected from network
 - Also enables review of work being undertaken remotely
- Tight integration with Word and Excel – ability to create point-to-point hyperlinks within and between documents
- Integrated scanning – scan directly into your project
- Drag 'n Drop working papers

Knowledge Management

- Functional Overview
 - Storage of information for use in projects
 - Audit programs and procedures
 - Audit working papers templates, and linkages to procedures
 - Best practice issue/ exception descriptions
- Considerations
 - Availability of third-party content in tightly integrated format
 - E.g., CobiT, IIA's QA Framework, AuditNet.org

The screenshot shows the CCH TeamMate Audit Management System interface. The left pane displays a hierarchical tree structure of knowledge assets, including 'R8 Quality+Assurance+Framework', 'AuditNet - Premium Content', and 'Cobit 4th Edition'. The right pane displays a 'Test the Control Design' document with a list of bullet points detailing control objectives and test procedures.

Control Objective: Risk and Value Drivers: Test Details: Results: Properties:

Test the Control Design

- Confirm through interviews with key staff members that business functional and technical requirements have been defined and a maintenance process has been agreed upon. Inspect documentation of requirements and maintenance processes, and ensure that the design is appropriate to the size, complexity, objectives and risks of the acquisition and has been approved by the relevant owner/sponsor.
- Confirm through interviews with key staff members that all requirements and acceptance criteria have been considered, captured, prioritised and recorded in a way that is understandable to stakeholders and sponsors.
- Confirm through interviews with key staff members that application and infrastructure technical requirements meet the needs of the organisation's information architecture standards and strategic technical direction.
- Review plans, policies and procedures to identify exceptions/deviations from the information architecture standards and strategic technical direction.

Capture of Time and Expenses – Functional Overview

- Time and expense sheets
- Monitor budget vs. actual time and expenses
- Monitor utilization

The screenshot displays the CCH TeamMate software interface for a timesheet. The top navigation bar includes Home, Timesheet, Expense, Approval, Views, Reports, and Help. The user is logged in as TeamMate Champion. The current timesheet is for Ryley, Chris, covering the period 7/1/2008 - 7/31/2008, with a due date of 8/2/2008 and a total time charged of 152.50 hours. The interface shows a list of time entries with columns for days of the week (Tue 1 to Wed 9) and rows for various activities. The project profile for 'Atlantic Incorporated Review' is also visible, showing scheduled and actual dates and effort.

Time Entry	Category	Activity	Totals	Tue 1	Wed 2	Thu 3	Fri 4	Sat 5	Sun 6	Mon 7	Tue 8	Wed 9
<input type="checkbox"/> Atlantic Incorporated Review 08-CO	Fieldwork	No Travel	25.00	8.5	8	8.5						
<input type="checkbox"/> Calgary Distribution Center Audit 08-	Fieldwork	Internationa	61.00									
<input type="checkbox"/> Payroll Controls Review 08-CORP-1	Planning Audit	No Travel	33.50							9.0		
<input type="checkbox"/> Atlantic Incorporated Review 08-CO	Reporting	No Travel	25.00								8.5	8
<input type="checkbox"/> -----<Select Project>-----	---<Category>---	-<Activity>--	0.00									
<input type="checkbox"/> -----<Select Project>-----	---<Category>---	-<Activity>--	0.00									
<input type="checkbox"/> July 4th	Statutory Holid		8.00				8					
<input type="checkbox"/> -----<Select Nonworking>-----	---<Category>---		0.00									
<input type="checkbox"/> -----<Select Nonworking>-----	---<Category>---		0.00									
<input type="checkbox"/> -----<Select Admin>-----	---<Category>---		0.00									
<input type="checkbox"/> -----<Select Admin>-----	---<Category>---		0.00									

Project Profile Atlantic Incorporated Review			Comments			
	Scheduled	Actual	Assignment(1)	Start Date	End Date	Effort
Start Date	5/5/2008	5/5/2008	Assignment(1)	6/30/2008	7/2/2008	24.00
End Date	7/17/2008		Assignment(2)	7/8/2008	7/10/2008	24.00
Effort	520.00	994.00				




Time & Expense Capture - Considerations





- Integration with other modules in toolset
- Configurability
 - Does it have the flexibility to capture the level of detail you need?
- Capture of project, administrative and non-working event time
- Time capture tends to be primary value
 - Typically not expense reimbursement systems

Issue and Implementation Tracking – Functional Overview

- Systems to track management’s progress in addressing audit’s recommendations
- Document management’s responses and action plans
- Capture of status updates, date revisions, approvals

Recommendation Aging 

Drag a column header here to group by that column.

Project	Recommendation	Department	Owner	State	Estimated Implementat... Date	Revised Date	Actual Implement... Date	Original Age	Revised Age (if applic...)
08-CORP-02 - Accounts Payable Invoice Review	All vendor payments should be matched to a purchase requisition	Finance	Stephanie Hendry		5/31/2008	7/31/2008		90	29
07-CORP-13 - JEFP - Network Application Review	Termination Procedures should be Modified	Information Technology	Lucy Fernandez		6/30/2008	8/22/2008		60	7
08-INT-03 - Toronto Distribution Center Audit	All data relevant to loan should be accurate and reviewed	International	Steve Calise		6/20/2008	8/29/2008		70	0
07-CORP-14 - Shared Service Center Review	Payroll deductions should be maintained	Finance	Doug Vlasak		5/16/2008	7/11/2008	7/10/2008	55	-1






Issue and Implementation Tracking – Considerations

- Ability of management to use tool
 - Cost of management's use
- Powerful workflow, including email notification
- Ability to customize email notifications
- Flexible reporting
- History log of all activities

Project Tracking

- Functional Overview
 - Help to identify where projects fall behind schedule
 - Ability to monitor status of ongoing and historic projects
- Considerations
 - Dashboard capability
 - Reporting of project-specific milestones, aging

Milestones Report 

[Expand All](#)  

[Filter](#)

Drag a column header here to group by that column.

Project	Status	Type	Location	Project Manager	Achieved Milestone	Achieved Date	Next Milestone
Access Control Review - 08-CORP-17	Planning	Information Technology	North America				
<input type="checkbox"/> Accounts Payable Invoice Review - 08-CORP-02	Closed	Operational	Europe	Pamela McCoy	Closing Meeting	2/21/2008	
<input type="checkbox"/> APS - Application Controls Review - 08-CORP-01	Closed	Information Technology	North America	Mike Evans	Closing Meeting	1/7/2008	

Ad Hoc Queries & Reporting

- Functional Overview
 - Ability to report across historical projects and issues
 - Data mining and multi-conditional reporting
- Considerations
 - Powerful, flexible reports
 - Graphical presentation
 - Ability to export in different formats

Filter

Step 1: What do you want to search? Combined

Step 2: What are your search conditions? Add

*Note: * or ** denote a custom property or measure, respectively. Multiple selections in a condition (via control key) implies OR logic.*

[Delete] 1) Project Type

Financial
 Information Technology
 Compliance

[Delete] 2) And Exception Category

Reconciliation
 Segregation of Duties
 System Access

Step 3: Which report format do you want to use? Standard Active Exception Listing

Exception Listing (9 records sorted by Project Code)

Drag a column header here to group by that column.

Project Code	Exception	Type	Category
06-CORP-20	Daily backups not performed	Compliance	System Access
06-CORP-20	Systems passwords not required to be changed	Compliance	System Access
06-CORP-20	Passwords are visible	Reportable Condition	System Access
07-CORP-02	Security Access Clean up	Reportable Condition	System Access
07-CORP-08	Web Services for Data Exchange is not Secure	Material Weakness	System Access
07-CORP-08	Validation Procedures are Only Available in the Web Service	Reportable Condition	System Access
08-CORP-01	Passwords are visible	Reportable Condition	System Access
07-CORP-13	Security Access Clean up	Reportable Condition	System Access
07-CORP-13	Policies for unauthorized changes	Reportable Condition	System Access

Chart Data Type Chart Type Column Refresh

TeamCentral

Category	Count
Compliance	01.8
Material Weakness	00.6
Reportable Condition	05.4

Additional Tool Selection Considerations

- Flexibility / configurability vs. “customization”
 - How easily can the tool be adapted to support your needs
- Complete solution
 - Does it meet your current and future needs?
 - Can your evolving needs be easily incorporated into the tool
 - Will the tool evolve as the audit function evolves?
- Connectivity issues & infrastructure requirements
- Integration with other systems
- Hidden costs



Additional Tool Selection Considerations

- Commitment and support
 - Is the vendor investing in the product? What is the future direction of the product? Will it continue to be supported by vendor?
- Active community of fellow users willing to share experiences





Implementation Considerations

- You are implementing more than just technology
 - Therefore, you need to think about more than just technology
- In addition to identifying what your needs currently are, think about what they should be
 - Audit methodology
 - Reporting requirements
 - Project
 - Audit function
 - Senior management and Audit Committee
- What were the results of your QAR, if you've had one?
 - Ensure your tool can help close any gaps
- How is your audit function measured?
 - Ensure the tool captures information to enable you to track, report on, and improve your KPIs
- Use the implementation of your tool as a change agent
- Proactively manage change



Implementation Considerations

- Don't underestimate the effort to implement the tool
 - Major factor is in making decisions
 - If you have a clearly articulated audit approach you are ahead of the game
 - Consider implementing in phases
- Identify at least two "Champions"
 - They should become super-users, go-to resources for your team
 - Ideally a solid IT background, but not necessary
- Champions should be actively involved in the implementation
 - Your champions should undertake the configuration
 - Resist the temptation to have the vendor configure the product for you
- Devote resources to the implementation, not needed to be full-time
- Stay focused on the implementation and keep intervals between meetings fairly short



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