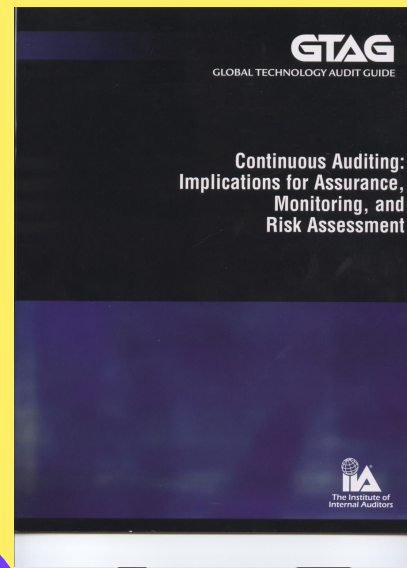




Continuous Auditing

Global Technology Auditing Guide #3

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The Institute of Internal Auditors
Progress Through Sharing

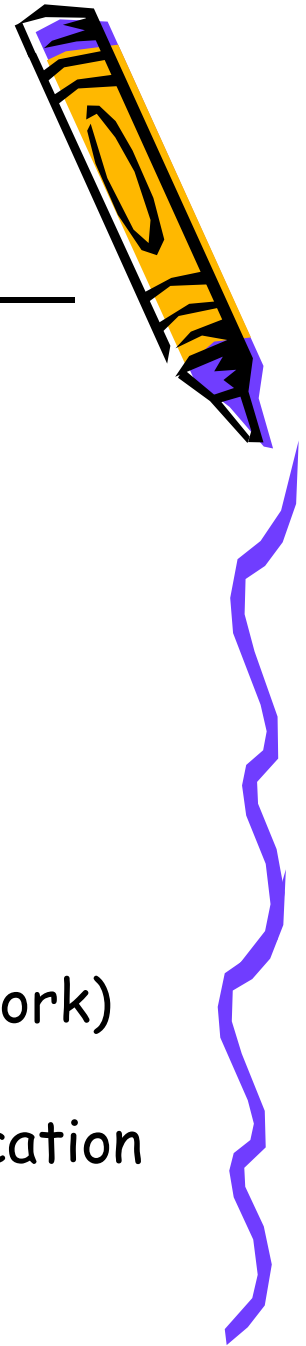
Learning Objectives

Session:

- Presentation of theory
- Demonstration
- group work (6 exercises)

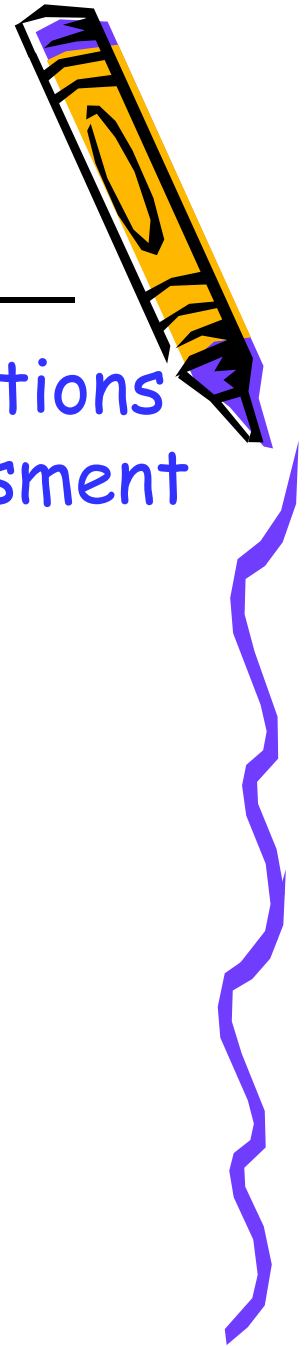
At the end of the day, I hope that you will:

- Understand the concept of continuous auditing
- Have practice in developing continuous auditing applications
- Benefit from the contribution of others (group work)
- See the utility of continuous auditing
- Have the beginning of a continuous auditing application



Outline of Session

- Overview of **Continuous Auditing**: implications for assurance, monitoring and risk assessment (GTAG #3)
- Practical application/example of:
 - **Continuous Risk Assessment**
 - Annual Risk-based Audit Plan
 - Individual Audits
 - Follow-up on Audit Recommendations
 - **Continuous Control Assessment**
 - Control Weaknesses
 - Fraud, Waste and Abuse



GTAG #3

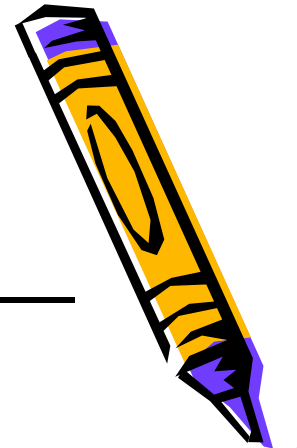
What This Guide Covers



- Definition of Continuous Auditing and related terms
- Role of continuous auditing in today's internal audit environment
- Relationship of continuous auditing, continuous monitoring, and continuous assurance
- Pre-requisites for continuous auditing
- The application and implementation of continuous auditing
- Benefits of a continuous, integrated approach



Role of Continuous Auditing



- Today's audit challenges
 - Regulatory compliance & controls
 - Internal audit value and independence
 - Availability of skilled resources
 - Determining appropriate technology solutions
- Need for timely, ongoing assurance over risk management and control systems
- Role of continuous auditing
 - Provides more frequent, more timely, analyses to better manage control deficiencies and risk



What is Continuous Auditing?

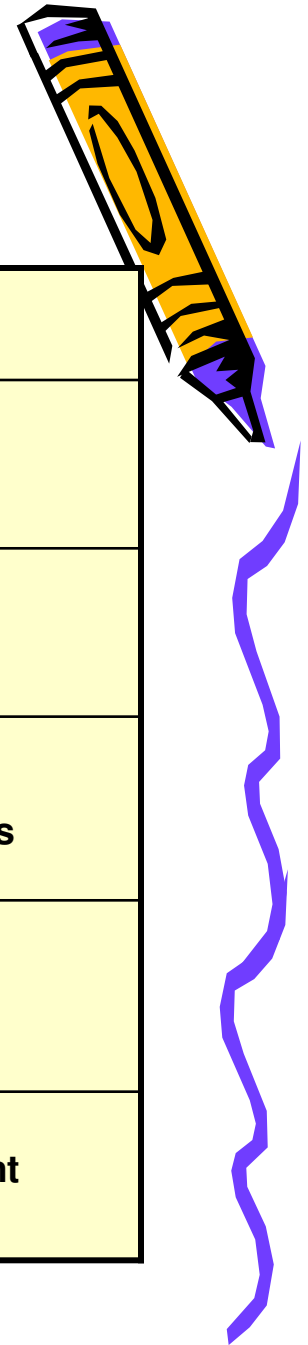


Gaining Clarity: Some Definitions

- **Continuous Auditing**
 - Any method used to perform audit-related activities on a continuous basis - includes control and risk assessment
 - Performed by internal audit
- **Continuous Monitoring**
 - Processes to ensure policies/processes are operating effectively and to assess adequacy/effectiveness of controls
 - Performed by operational/financial management; audit independently evaluates adequacy of management activities
- **Continuous Assurance**
 - Result of the combination of continuous auditing and audit oversight of continuous monitoring



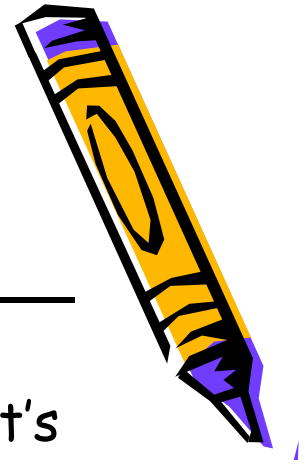
Continuous Auditing Continuum



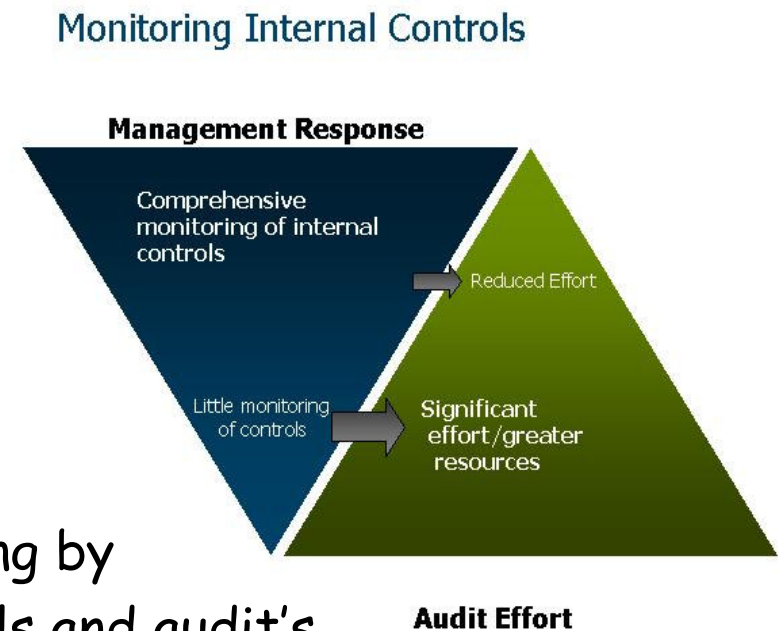
← Continuous Auditing →						
Continuous Control Assessment		↔		Continuous Risk Assessment		Approach
Control-based (assurance controls are working) Financial controls		↔		Risk-based (Identification/assessment of risk) Financial and operational controls		Focus
Real-time/detailed Transaction testing (financial data)		↔		Trend / Comparison (financial / operational data)		Analysis Techniques
Control Assurance	Financial Attest	Fraud / Waste / Abuse	Audit Scope and Objectives	Follow-up On Audit Recs	Annual Audit Plan	Related Audit Activities
Control Monitoring	Performance Monitoring	Balanced Scorecard	TQM	ERM		Related Management Activities



Relationship of Continuous Auditing/Monitoring/Assurance

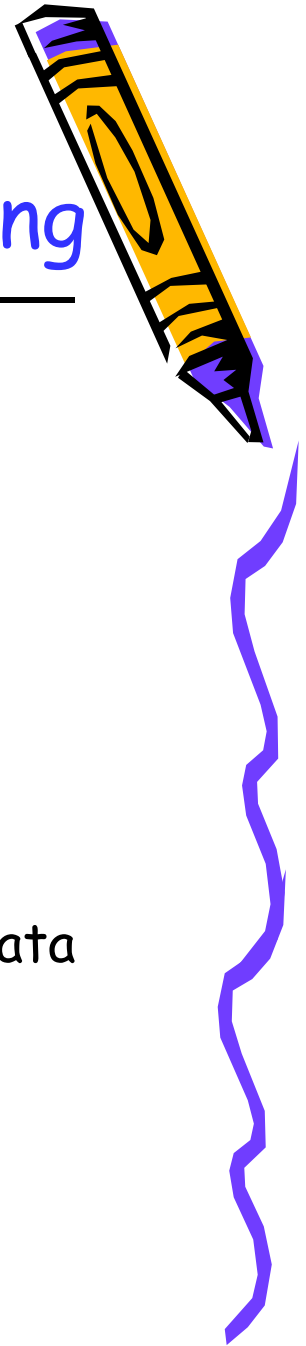


- Role of continuous auditing is dependent on management's role in continuous monitoring of controls
 - Inverse relationship: the greater the role of management, the less of a direct role of internal audit
- True continuous assurance
 - Depends on effective monitoring by management of internal controls and audit's independent assessment of that function



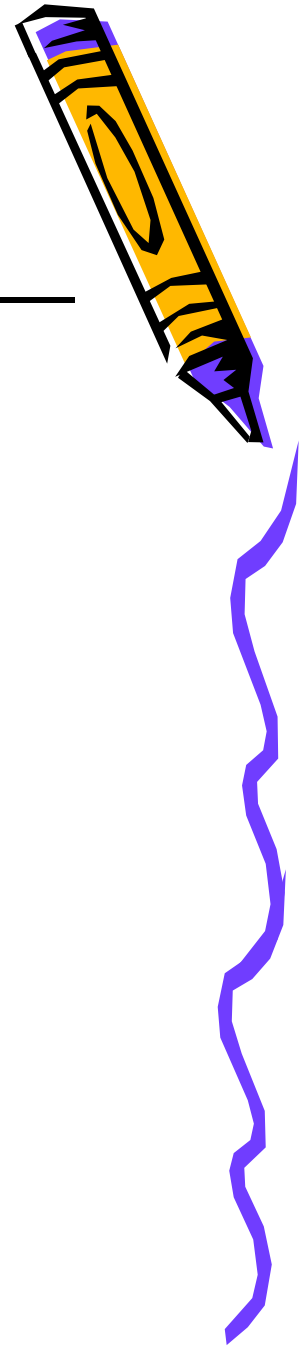
Pre-requisites for Continuous Auditing

- Current state of technology
 - In the organization and in the audit department
- Data Access
 - Authority
 - Logical access
 - Physical access
- Time
 - To learn the business systems
 - To understand the information systems and the data
 - To perform the analysis
- Competence
 - Internal auditors
 - Data analysts



Continuous Auditing: Areas of Application

- Continuous risk assessment
 - Development of enterprise audit plan
 - Support to individual audits
 - Follow-up on audit recommendations
- Continuous control assessment
 - Identification of control deficiencies
 - Identification of fraud, waste, abuse



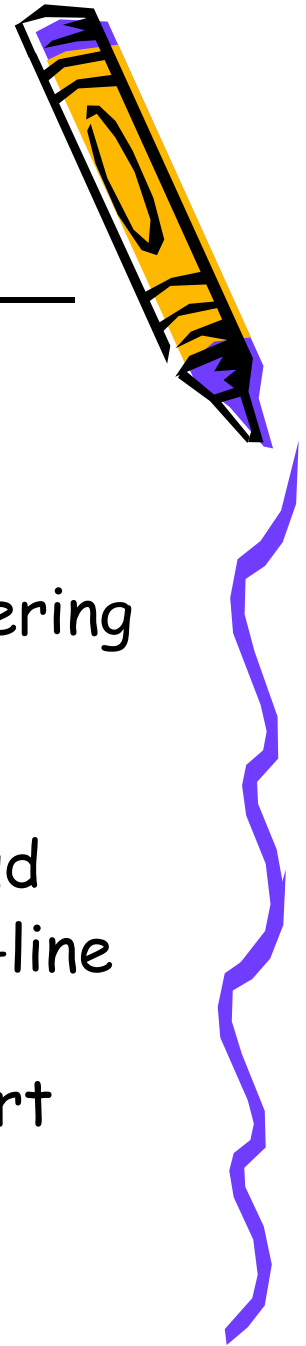
Key Steps to Implementation

- Establish audit objectives and requirements
- Gain executive-level support
- Ascertain degree to which management is performing monitoring role
- Select appropriate technology solutions
- Identify information sources and gain access
- Understand business processes and identify key controls and risks
- Build audit skill set
- Manage and report results



Benefits

- Increased scope of audit activities
- Increased ability to mitigate risk
- Cost effective and efficient use of existing corporate data/information - intelligence gathering
- Increased confidence in financial results
- Improvements to financial operations
- Reduced financial errors and potential for fraud
- Reduced revenue leakage for improved bottom-line results
- Sustainable and cost-effective means to support compliance and control assessments



Benefits

Before Audit:

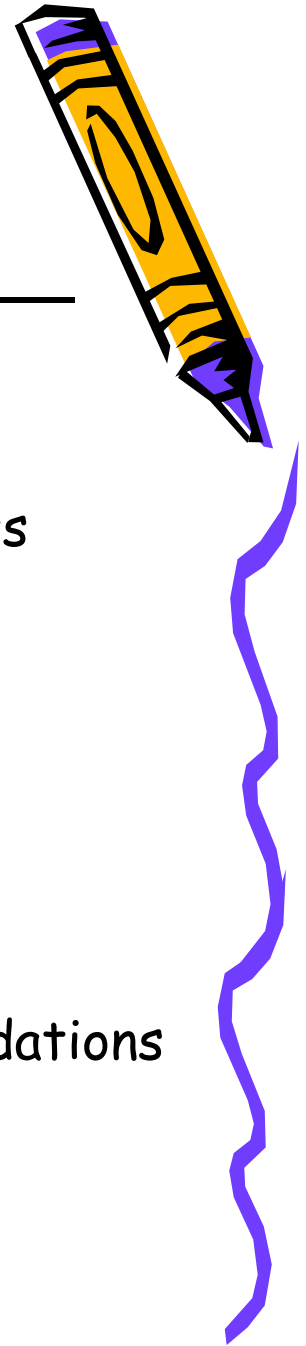
- Identify and assess risks
- Review operations / improve understanding of business

During Audit:

- Establish objectives and scope
- Test controls
- Identify areas for improvement in operations

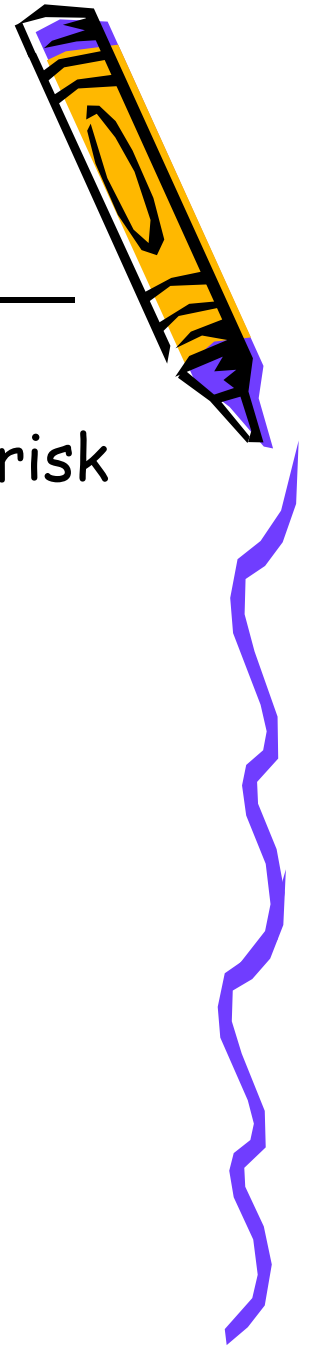
After the Audit:

- Measure improvement / implementation of recommendations
- Ongoing monitoring



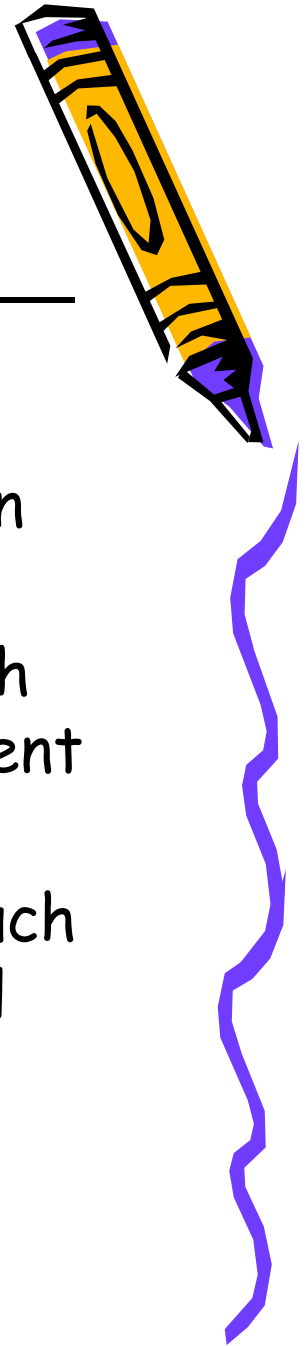
Continuous Risk Assessment

- Establish corporate universe
- Identify risk categories / consequences of risk exposure
- Identify the key business processes and information systems
- Prioritize areas to be examined
- Identify data-driven indicators of risk / performance
- Develop and run analytical tests
- Assess controls and prioritize results
- Monitor and report on results
- Revise



1. Development of Audit Plan

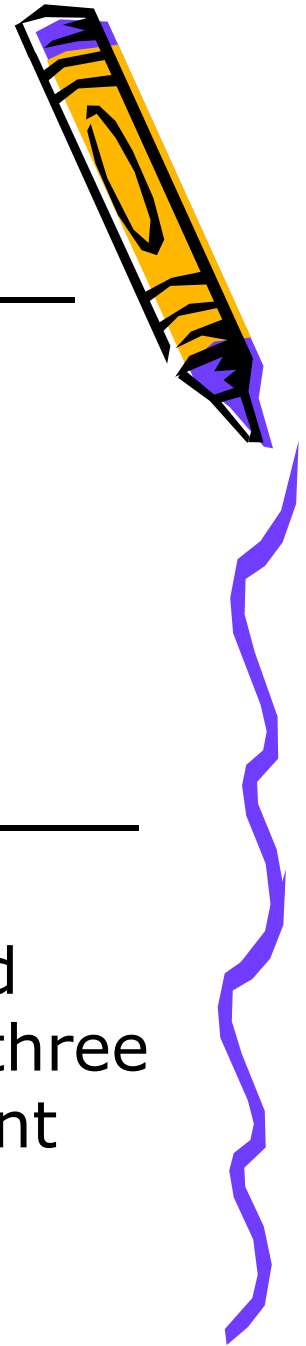
- Risk-based audit plan requires:
- Establishment of audit universe and definition of audit entities
- Collection and analysis of **qualitative** data such as business plans, organization charts, management input, facilitated sessions, etc
- Collection and analysis of **quantitative** data such as financial, human resources, and operational information



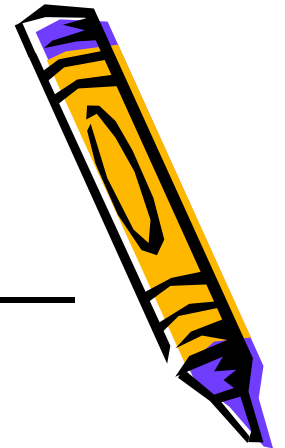
Risk Categories

- External environment
 - Legal and regulatory
 - Strategy
 - Governance
 - Operational
 - Information
 - Human resources
 - Technological
 - Financial and administrative
-

Each audit entity was rated on the nine risk categories. A combination of qualitative and quantitative factors were considered in the three risk categories identified above. The inherent risk rating was determined for all entities.



Quantitative Data



- **Materiality and Indicator of Risk:**
- Measure of the size of the entity
 - financial, human resources, operational data
- Indicator of level of risk / performance
 - complexity, significant changes, relative comparisons, etc.
- Note: Indicators are predictors of risk / performance.



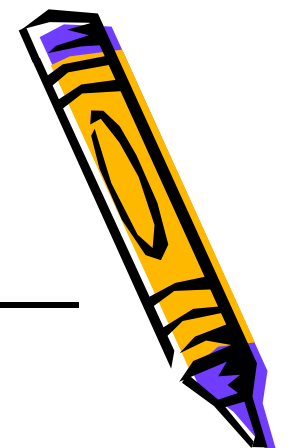
Exercise #1 - Annual audit plan

6 groups of 4 - 30 minutes

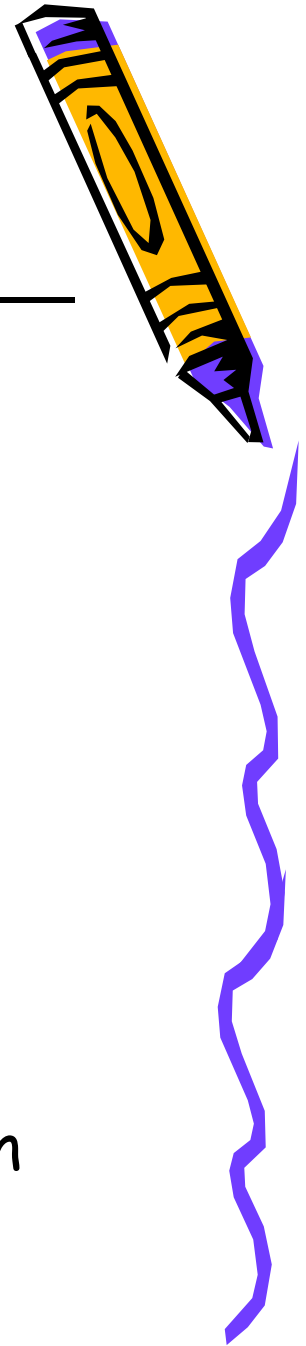
- Groups 1 and 4 - financial
- Groups 2 and 5 - human resources
- Groups 3 and 6 - operational
- Volunteer - other (specify)

Definition of audit universe

Define indicators of materiality, risk, etc.



Financial Measures and Indicators



Materiality:

- Total Dollars in Expenses, Revenue and Assets.

Complexity of financial operations:

- Percentage change compared to last fiscal year
- Number of cost centres
- Percentage discretionary spending
- Existence of revenue and assets in addition to expenses



Human Resource Measures and Indicators



Materiality:

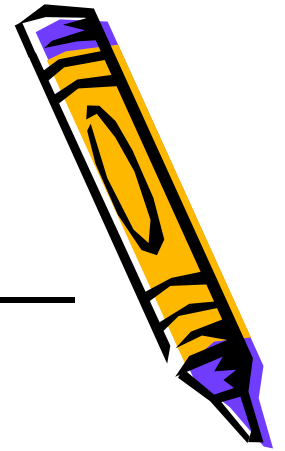
- Total number of personnel

Complexity of human resources:

- Number of locations of operations
- Mix of personnel - RM, CM, PS, consultants, other
- Percentage employee less than one year in position
- Average years of service (Cst)
- Sick leave / Vacation balances;
- Percentage overtime to salary



Operational Measures and Indicators



Materiality:

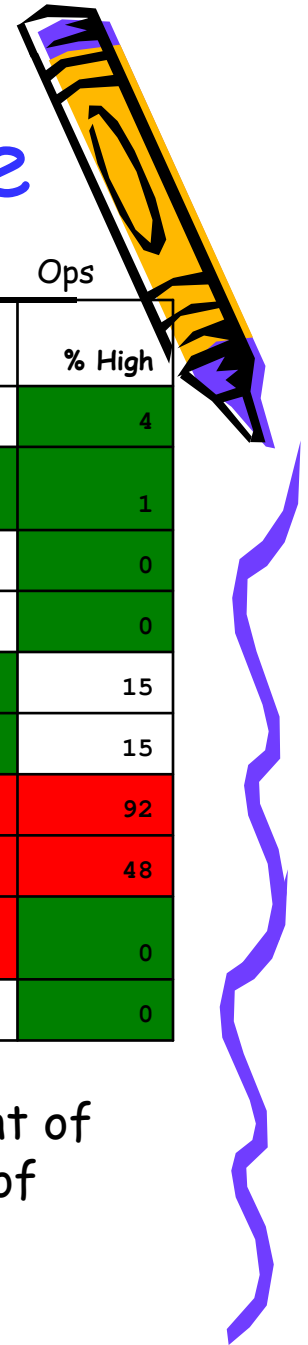
- Size of operations - number of files

Complexity of operations:

- Percentage change compared to last fiscal year
- Percentage files (High, Medium, Low)
- Number of files per officer
- Clearance rates



Relative Ranking - Quantitative



Program Activity (PAA)	Human Resources		Finances				Ops	
	HR	# Locs	# CCtrs	Expenses	Assets	Revenue	% Disc	% High
Business Line 11	478	50	139	30,857,325	11,858,981	100,083	13.17%	4
Business Line 302	6,738	187	450	204,980,837	40,616,481	536,384	11.68%	1
Business Line 13	820	31	159	42,989,231	10,620,403	246,338	29.87%	0
Business Line 134	846	148	469	56,500,612	18,605,654	38,057	14.89%	0
Business Line 32	450	33	118	24,543,055	4,683,708	144,796	10.81%	15
Business Line 7	363	49	129	21,732,807	19,218,916	17,182	4.15%	15
Business Line 281	586	72	263	35,865,556	9,008,533	2,714	24.16%	92
Business Line 300	801	30	53	21,768,701	31,223,981	125,230	31.35%	48
Business Line 67	398	15	93	43,025,322	3,857,511	3,714,431	30.40%	0
Business Line 29	3,653	22	184	38,436,300	61,293,258	99,400	22.17%	0

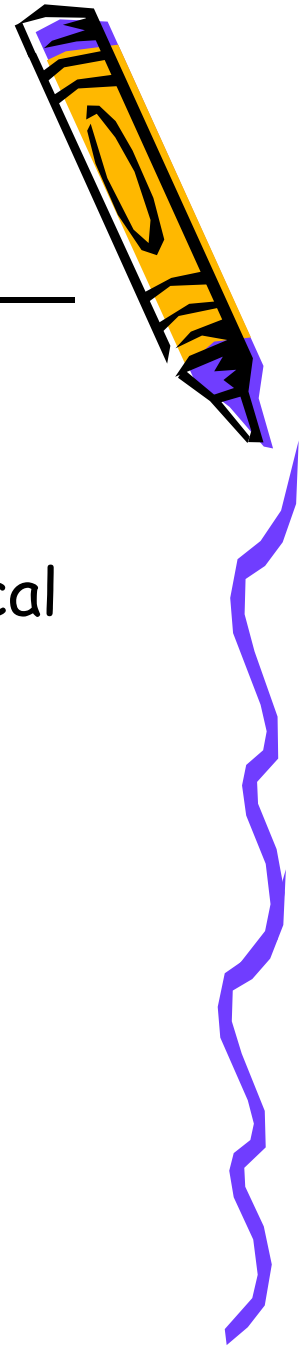
Results: helped us understand the business, supported assessment of risk, but ... more work was needed to maximize the potential use of the data.



Exercise #2 - Indicators

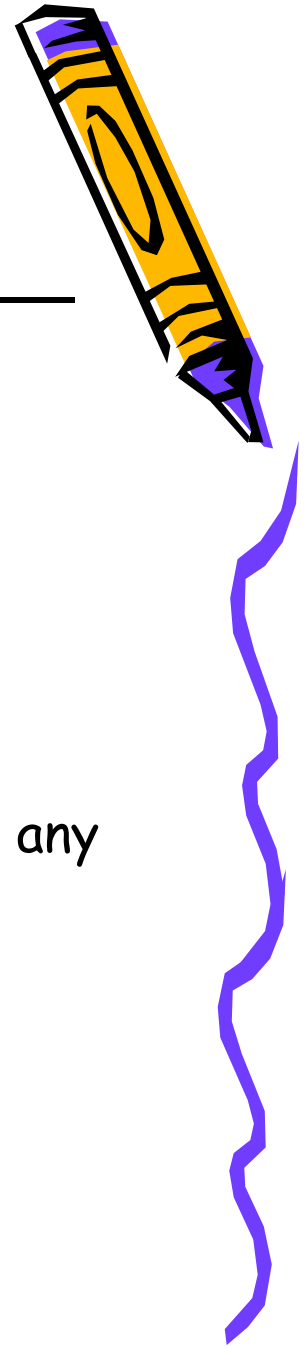
In the same groups: (30 minutes)

- For each indicator:
 - Define the method of measurement/analytical test
 - Define the source of the data
 - Define the frequency of measurement/test
- Indicators should:
 - Be Data-driven
 - Exist - not created for this purpose

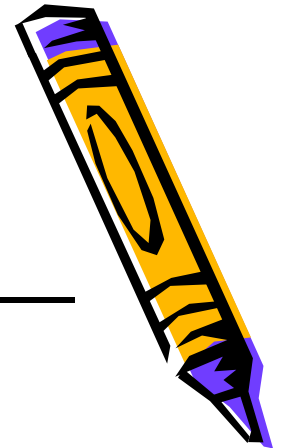


The Next Step

- Build a data-based predictor
 - Based on interviews and other qualitative factors
 - With assigned risk factors (H, M-H, M, M-L and L)
- The predictor should:
 - Support the assessment of risk in future years
 - Support the ongoing re-assessment of risk levels at any point during the year - using data-driven indicators
 - save effort in travel and interviewing units



Data Model - Risk Rating



	computer-assigned	
human-assigned	Risk level	Other
	HMH	Other
	Other	Other

A and D agree on risk and non-risk respectively.

B (HMH misclassified as Other) is critical and must be reduced to prevent high risk misclassification

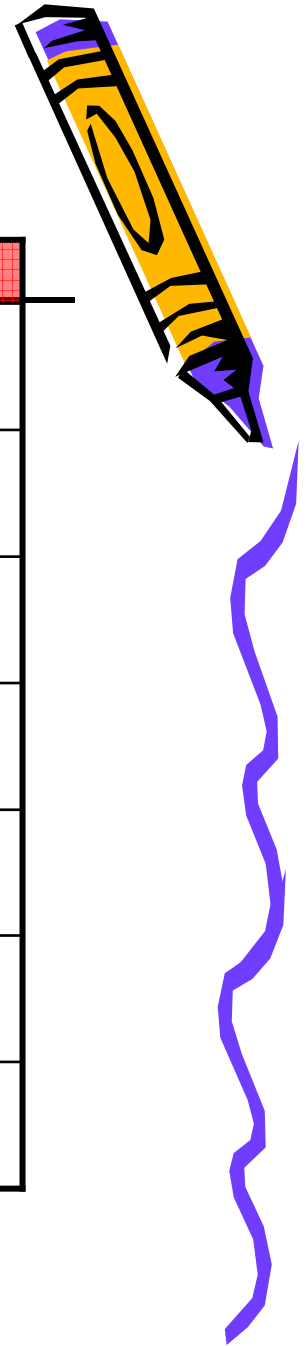
C (Other misclassified as HMH) is unnecessary work and should be reduced to lower cost of operation.



HMH - High and Medium-High
Other - Medium, Medium-Low, and Low

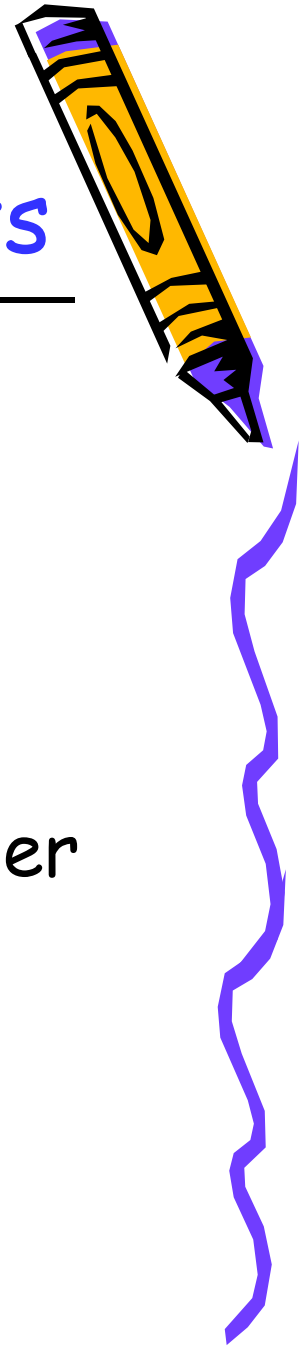
Evaluation of Results

Fold	L	MP	ADT	DT	RF	RT	NvaeB	BNet
2	2,11	5,8	5,8	4,9	6,7	7,6	8,5	0,13
	8,11	6,13	4,15	4,15	8,11	8,11	14,5	0,19
5	6,7	7,6	4,9	4,9	6,7	5,8	10,3	2,11
	6,13	7,12	3,16	4,15	5,14	4,15	15,4	2,17
10	5,8	9,4	5,8	4,9	5,8	8,5	10,3	0,13
	6,13	7,12	6,13	2,17	6,13	4,15	15,4	1,18
15	7,6	5,8	9,4	4,9	7,6	9,4	10,3	0,13
	5,14	6,13	6,13	4,15	10,9	6,13	15,4	0,19
20	7,6	5,8	9,4	2,11	5,8	9,4	10,3	0,13
	5,14	7,12	7,12	3,16	8,11	2,17	15,4	0,19
25	7,6	2,11	7,6	6,7	5,8	5,8	10,3	0,13
	6,13	8,11	6,13	6,13	11,8	6,13	15,4	1,18
32	6,7	4,9	6,7	4,9	7,6	4,9	10,3	0,13
	6,13	7,12	7,12	3,16	7,12	7,12	15,4	0,19



2. Support to Individual Audits

- Determine criteria to define entity
- Identify and assess risk
- Definition of scope
- Development of objectives
- Comparison to previous years or to other audit entities
- Identification of anomalies and trends



Exercise #3 - Payroll audit



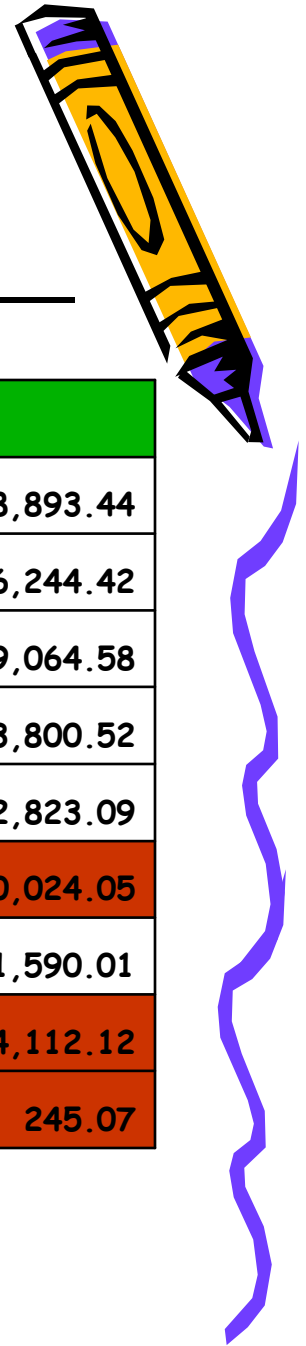
6 groups of 4 - 30 minutes

Consider the controls and business process risks in payroll and:

- Identify data-driven indicators that can be used to identify and assess risk and identify control weaknesses that will help to define the scope and objectives
 - State risk or control
 - Define analytical test - impact if T/F (Why are you doing it?)



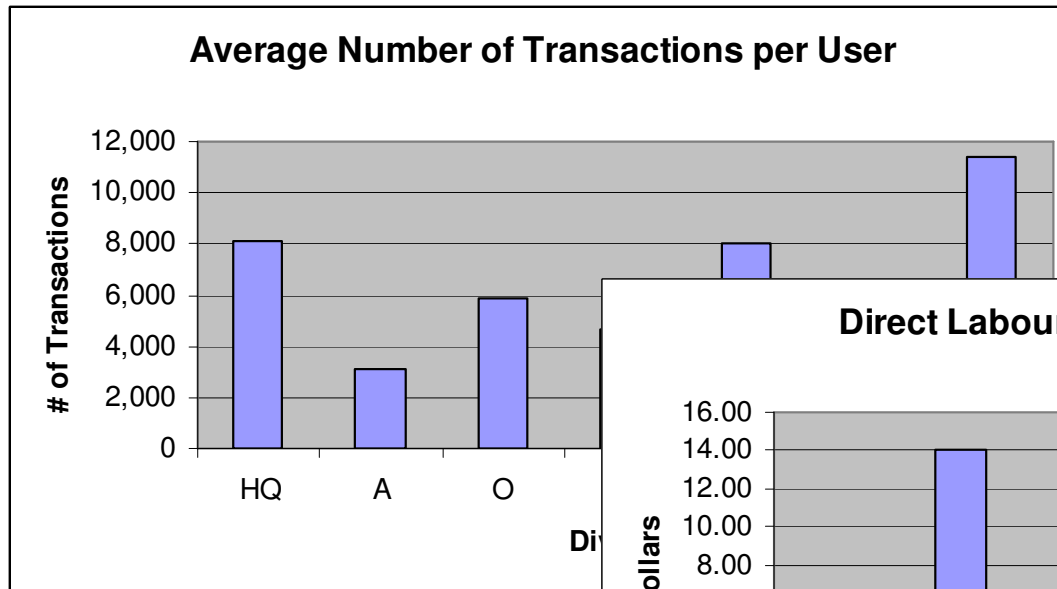
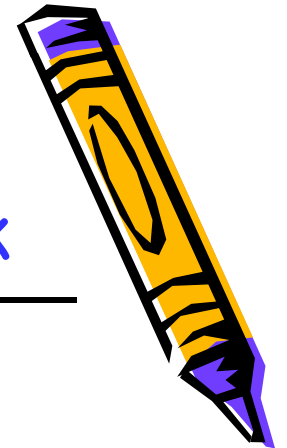
Identifying and Assessing Risk - Trends



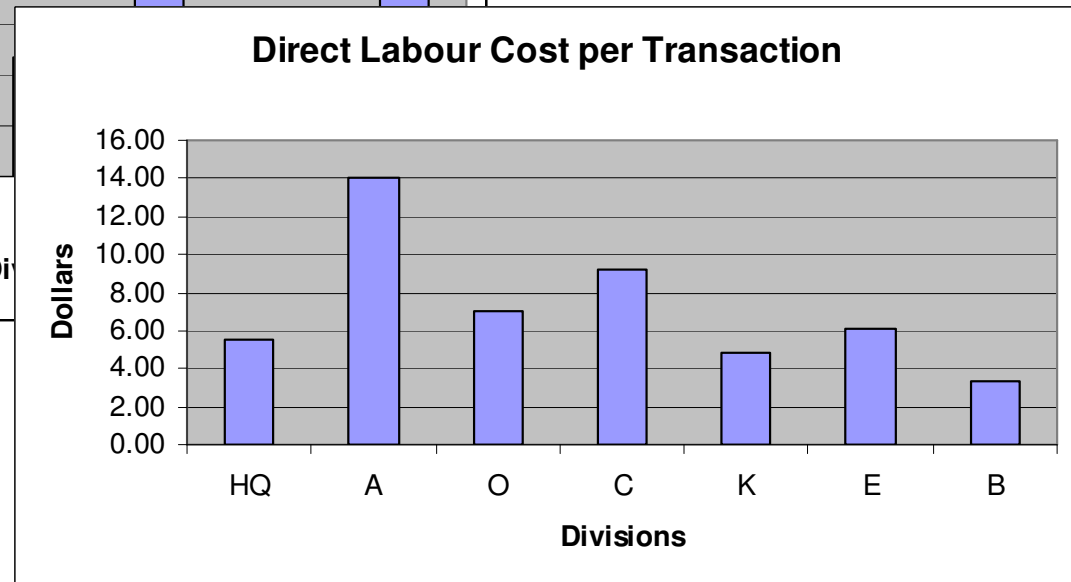
GL	FY 02/03	FY 03/04	FY 04/05
100	131,742,921.75	146,929,330.29	128,408,893.44
101	3,535,943.32	2,924,488.58	1,836,244.42
102	1,524,603.06	732,349.84	139,064.58
104	-6,428.65	-3,655.15	-3,800.52
105	739,630.00	811,174.58	722,823.09
106	1,782,054.68	2,097,957.33	660,024.05
107	761.89	2,580.00	1,590.01
108	53,205.45	25,118.97	124,112.12
109	37,208.55	22,071.49	245.07



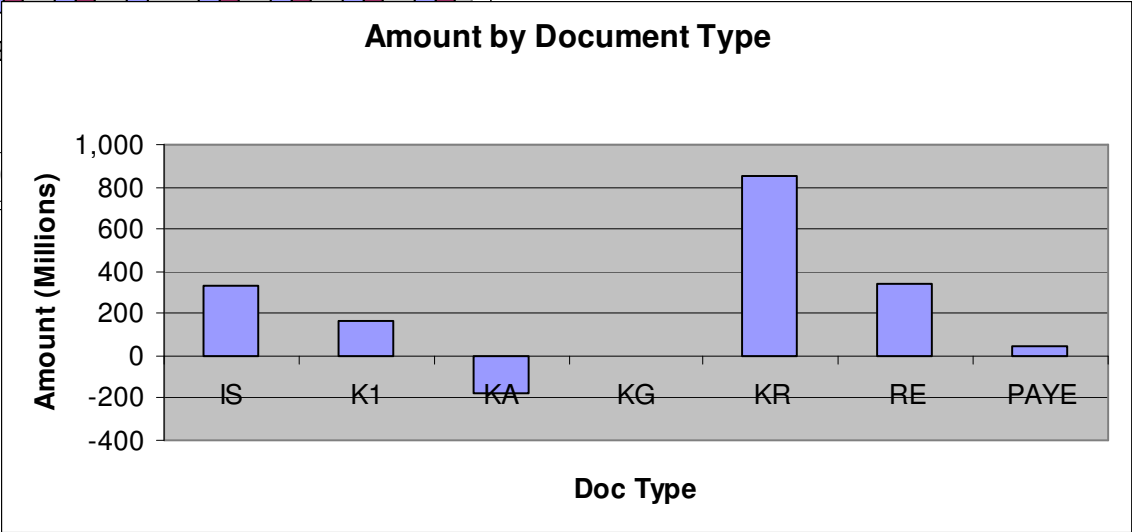
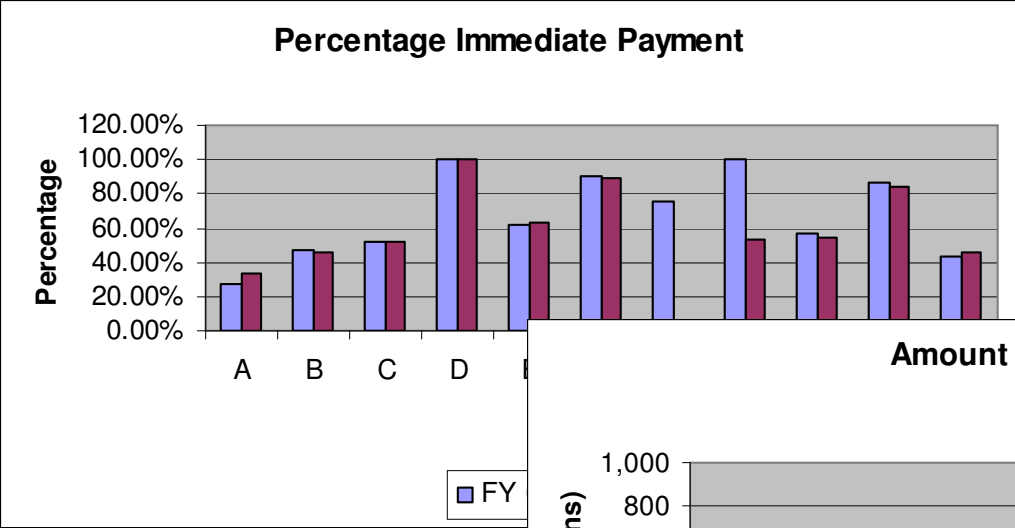
Payroll - identifying and assessing risk



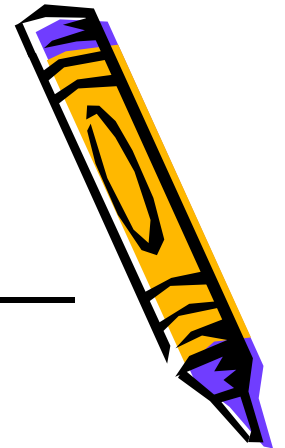
Efficiency of Payroll operations



A/P - identifying and assessing risk (Cont'd)



Specific Tests (Financial Audits)



RCMP Internal Audit

Financial audit - Main menu

Absolute Amount > \$50K

Negative entries

Duplicate invoices

Total employee expenses

Total vendor expenses

Total by GL by Qtr

Total GL by FY

Cost centre by document type

Employee pay by cost centre

Vendor ratio (max/min)

Wrong FY

Run all tests

OK

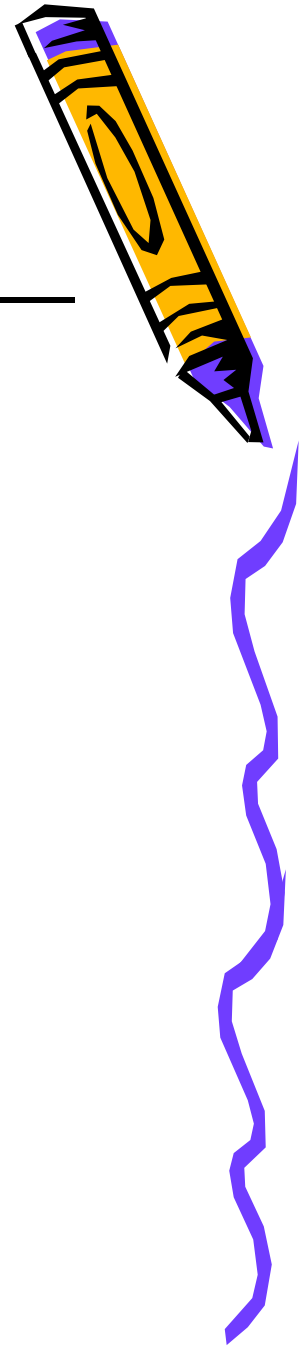
Cancel

Tests for anomalies and comparisons to previous fiscal years and/or other entities



3. Follow-up on Audit Recommendations

- Define audit findings for follow-up
- Identify data-driven indicators
- Baseline measurements
- Determine when to re-run analysis
- Run tests and compare results
- Follow-up with management



Follow-up on Audit Recommendations - Accounts payable



Main Findings:

- Inconsistent org structure (numbers, classification, etc)
- A/P clerks not adequately trained on the financial system
- No ongoing risk assessment/performance monitoring
- A/P clerks performing conflicting duties (separation of duties)
 - Create vendor and enter invoices
 - Enter receipt of goods/service and invoice
- Inefficient use of acquisition cards - costly to process small dollar invoices
- Inappropriate use of DBA payments (Manual Cheques)
- Failure to commit funds and reference purchase orders
- Non-compliance with Payment on Due Date policy - paying immediately.



Exercise #4 - Accounts Payable



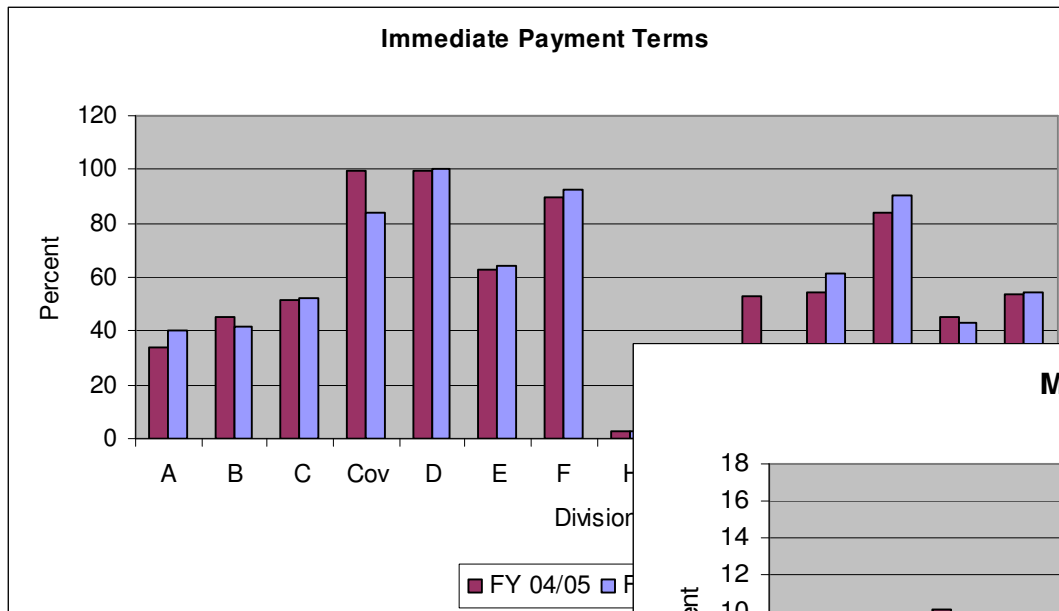
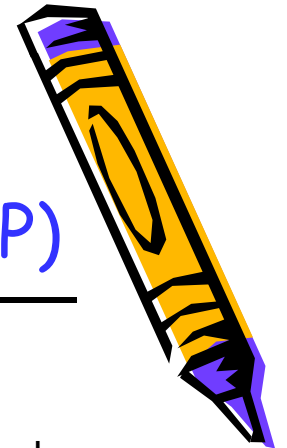
6 groups of 4 - 30 minutes

Consider the A/P findings and:

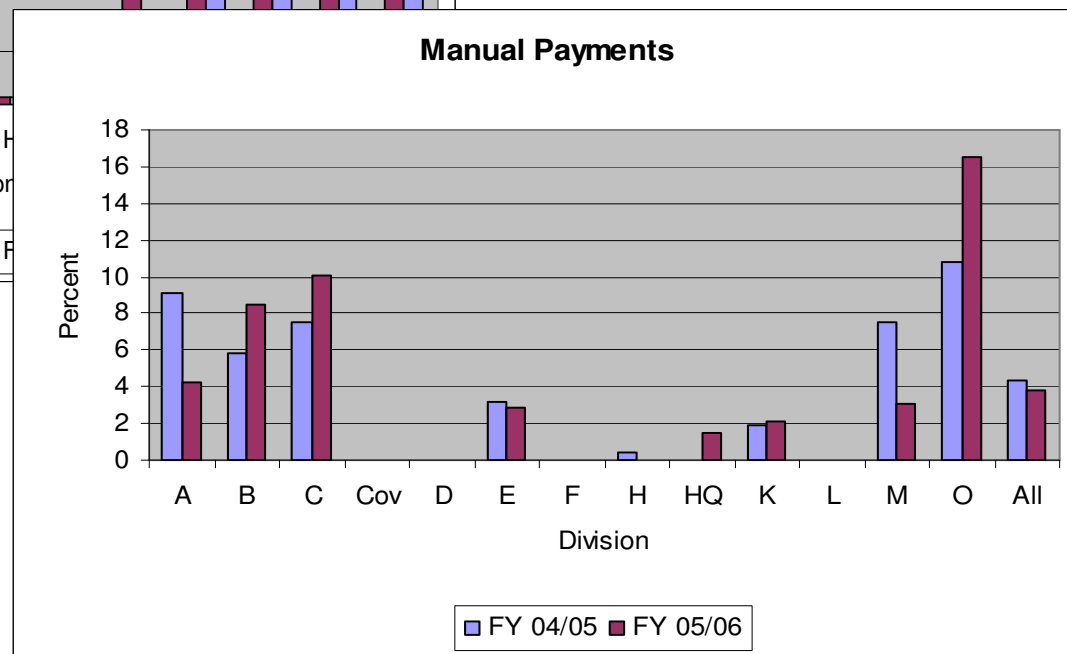
- Develop data-driven indicators that will allow you to follow-up on the implementation of the findings. Specify:
 - Data required
 - Analysis to be performed
 - Expected results



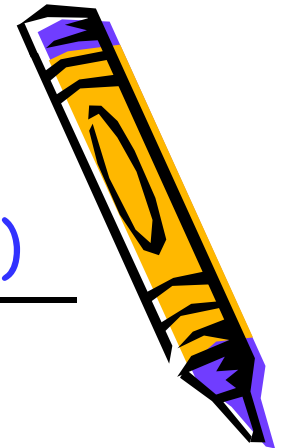
Follow-up on Audit Recommendations (A/P)



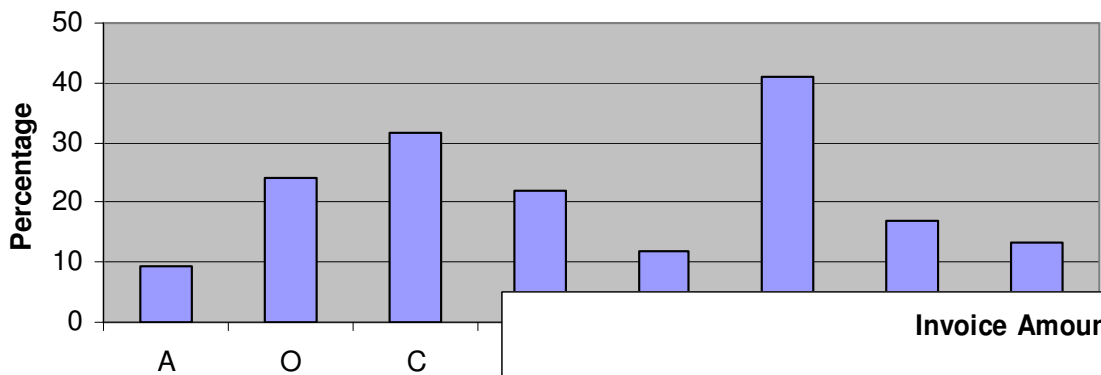
Verify improvements have occurred – check indicators after implementation of audit recommendations



A/P - Follow-up on Recommendations (Cont'd)

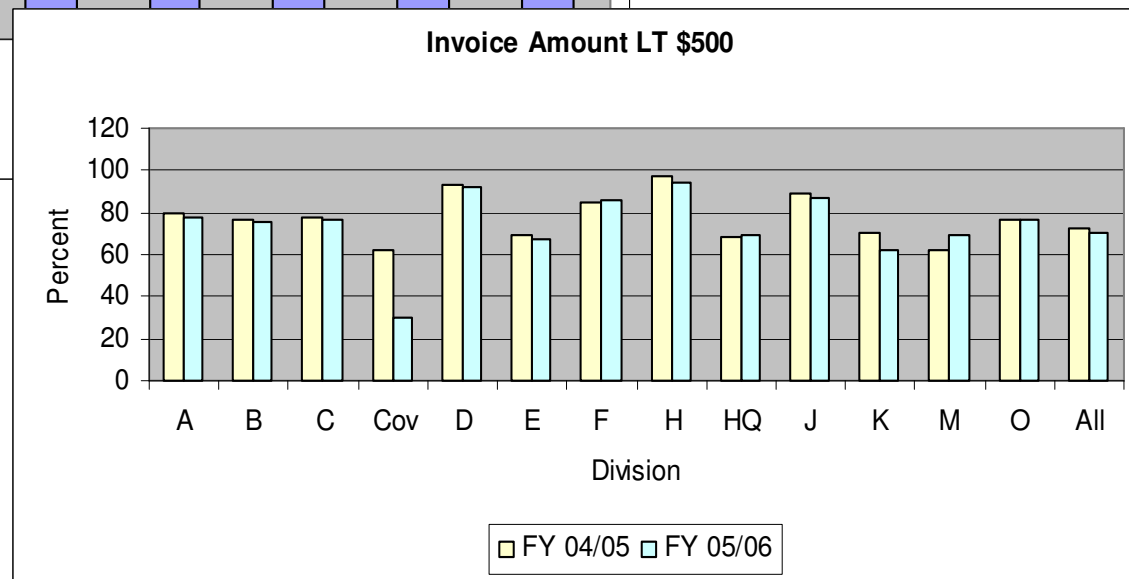


Acquisition Card Usage



Efficiency of A/P operations

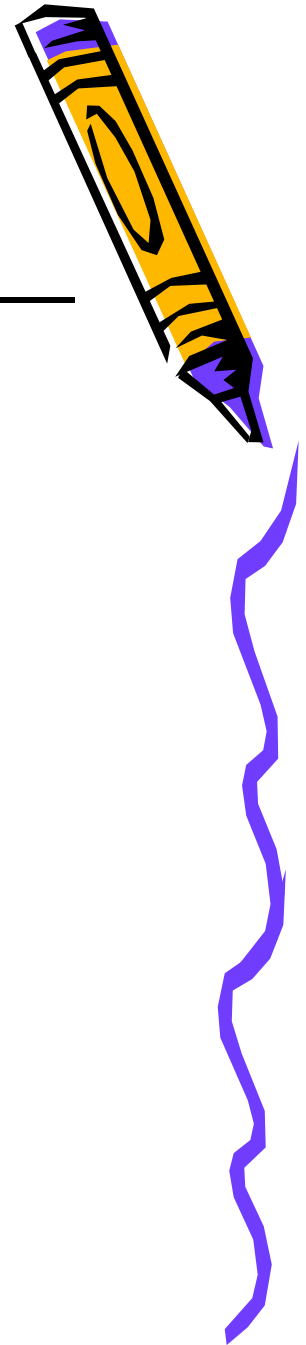
Invoice Amount LT \$500



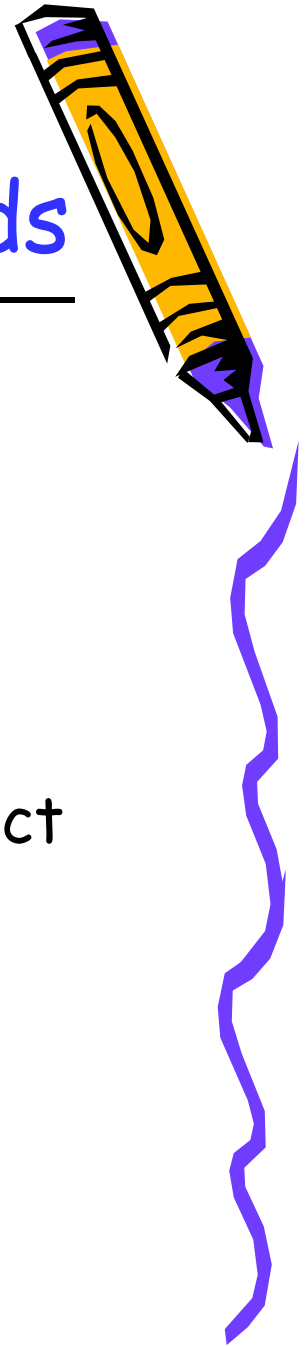
4. Anomalies, Waste, Abuse and Fraud (Corporate Acquisition Card)

Steps:

- Consider risks and control weaknesses
- Identify who could take advantage of risk/weakness
- Speculate as to what they could affect or do
- Determine what the symptoms would look like in the data
- Identify and access data sources
- Define the analytical tests
- Determine expected results
- Run tests and review results
- Evaluate, follow-up and revise



Exercise #5 - Acquisition cards

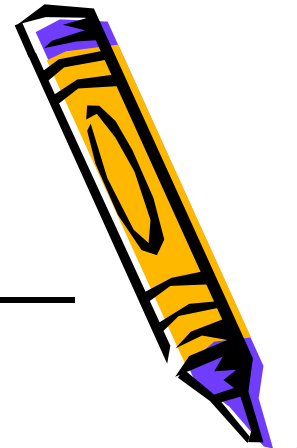


6 groups of 4 - 30 minutes

- Potential Control weaknesses
- Areas of Risk
- Consider who could be benefiting from the risks/weaknesses and what they could affect
- Identify symptoms in the data
- Determine tests to be run
- Source of data and fields required
- Expected results



Anomalies, Waste, Abuse and Fraud (Corporate Acquisition Card)



RCMP Internal Audit - Credit Card Tests

Acquisition Card Menu

<input checked="" type="checkbox"/> Cash - manual or automated	<input type="checkbox"/> Pharmacy/Drugstore expenses
<input checked="" type="checkbox"/> Financial services	<input type="checkbox"/> Foreign expenses (CIBC Only)
<input checked="" type="checkbox"/> Airline expenses	<input type="checkbox"/> Internet expenses
<input checked="" type="checkbox"/> Hotel expenses	<input checked="" type="checkbox"/> Expenses greater than \$5,000
<input checked="" type="checkbox"/> Car rentals	<input type="checkbox"/> Weekend purchases
<input type="checkbox"/> Food expenses	<input type="checkbox"/> Multiple of \$100
<input checked="" type="checkbox"/> Transportation expenses	<input checked="" type="checkbox"/> Duplicate purchases
<input checked="" type="checkbox"/> Automotive expenses	<input checked="" type="checkbox"/> Split purchases
<input type="checkbox"/> Computer expenses	<input type="checkbox"/> Totals by merchant category
<input type="checkbox"/> Government expenses	<input checked="" type="checkbox"/> Check for unused card numbers
<input type="checkbox"/> Questionable expenses	

Execute all tests

OK
Cancel

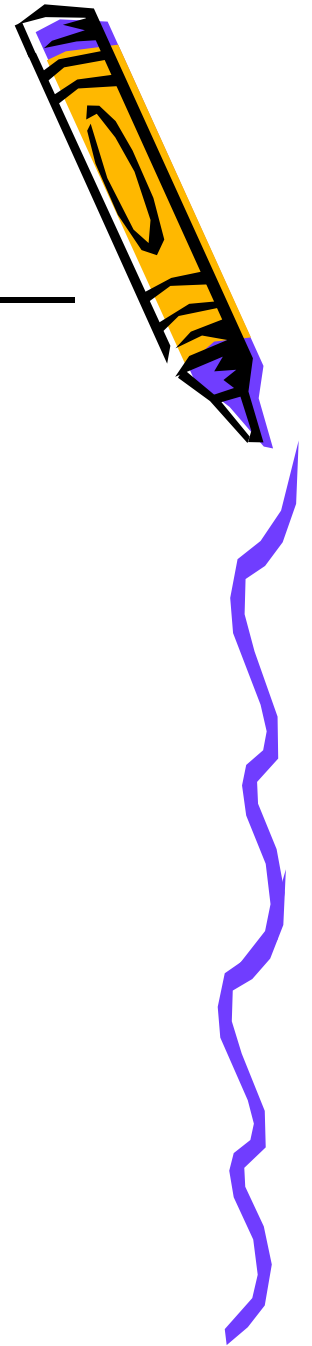
Specific tests to highlight transactions to be reviewed – can be run monthly



5. Continuous Control Assessment

Control deficiency / weaknesses

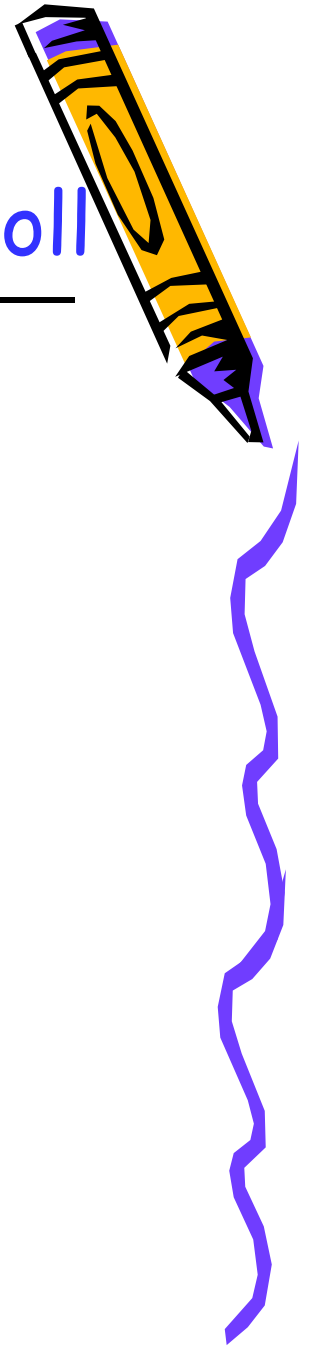
- Identify key business functions and their applications
- Define critical control points
- Define rules / exceptions
- Develop analytical tests
- Run and report on results
- Monitor and Revise



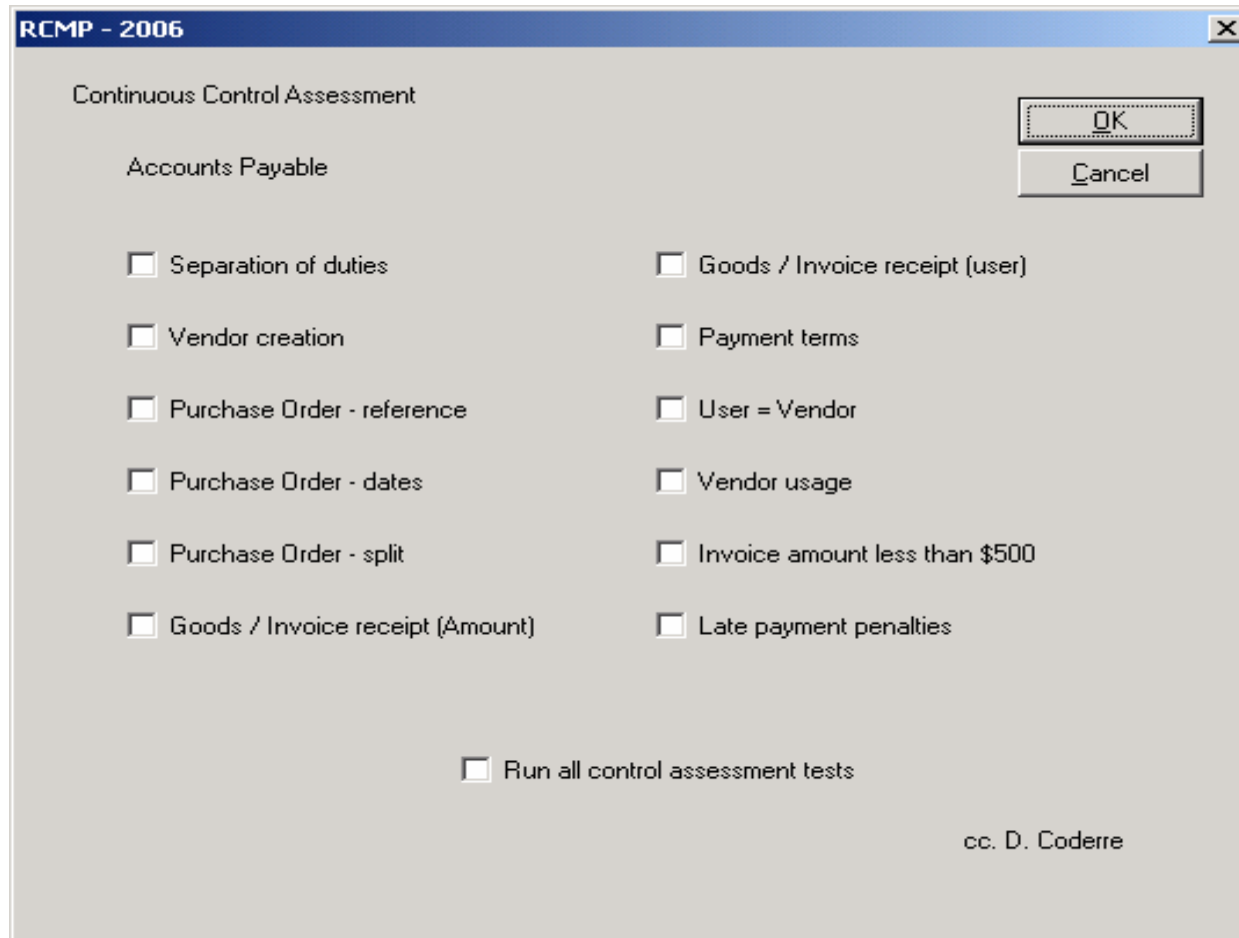
Exercise #6 - Key Controls in Payroll

6 groups of 4 - 30 minutes

- Control points
- Rules / exceptions
- Define the analytical tests
- Determine the source of the data and required fields
- Define the expected results



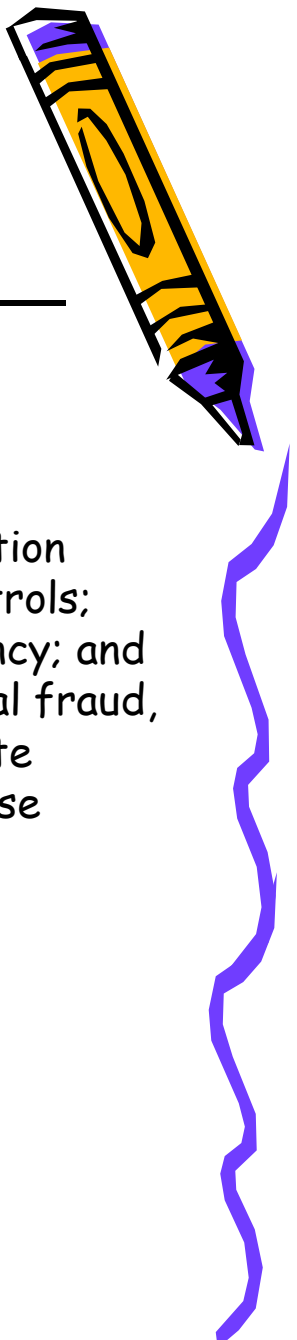
Accounts Payable: Continuous Controls Monitoring



The screenshot shows a dialog box titled "RCMP - 2006" with a close button (X) in the top right corner. The main heading is "Continuous Control Assessment". Below this, the section "Accounts Payable" is listed. There are two columns of checkboxes, each with a corresponding control description. At the bottom, there is a checkbox for "Run all control assessment tests" and the text "cc. D. Coderre".

Control Description	Checked
Separation of duties	<input type="checkbox"/>
Vendor creation	<input type="checkbox"/>
Purchase Order - reference	<input type="checkbox"/>
Purchase Order - dates	<input type="checkbox"/>
Purchase Order - split	<input type="checkbox"/>
Goods / Invoice receipt (Amount)	<input type="checkbox"/>
Goods / Invoice receipt (user)	<input type="checkbox"/>
Payment terms	<input type="checkbox"/>
User = Vendor	<input type="checkbox"/>
Vendor usage	<input type="checkbox"/>
Invoice amount less than \$500	<input type="checkbox"/>
Late payment penalties	<input type="checkbox"/>
Run all control assessment tests	<input type="checkbox"/>

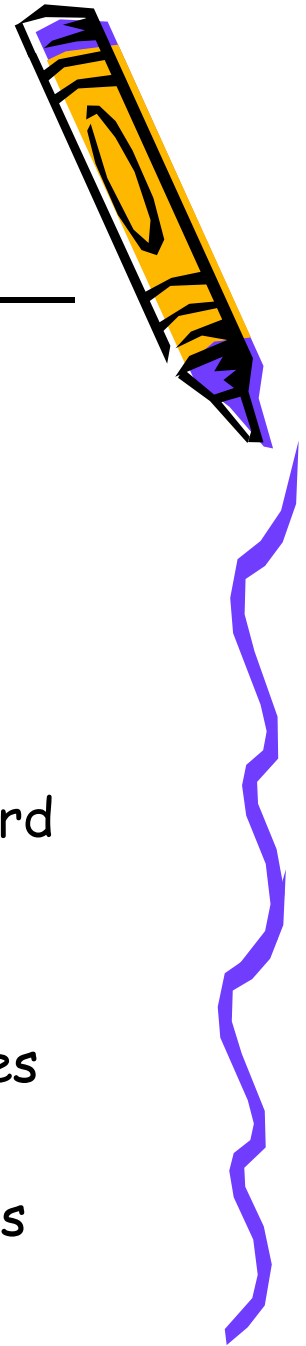
cc. D. Coderre



Application controls;
Efficiency; and
potential fraud,
waste
and abuse



Continual Auditing - Examples



Areas of Risk

- Pay - persons not in the employee master file
- Air travel - inappropriate class of travel
- Acquisition cards - monitoring system for abuse
- Duplicate payments - identified over \$160K
- Vacation balances - more than maximum carry forward
- Overtime payments - questionable payments

Areas of Control

- Security clearances - problem with renewal processes
- Bilingual bonuses - inappropriate
- Allowances - maternity, clothing upkeep, plain clothes



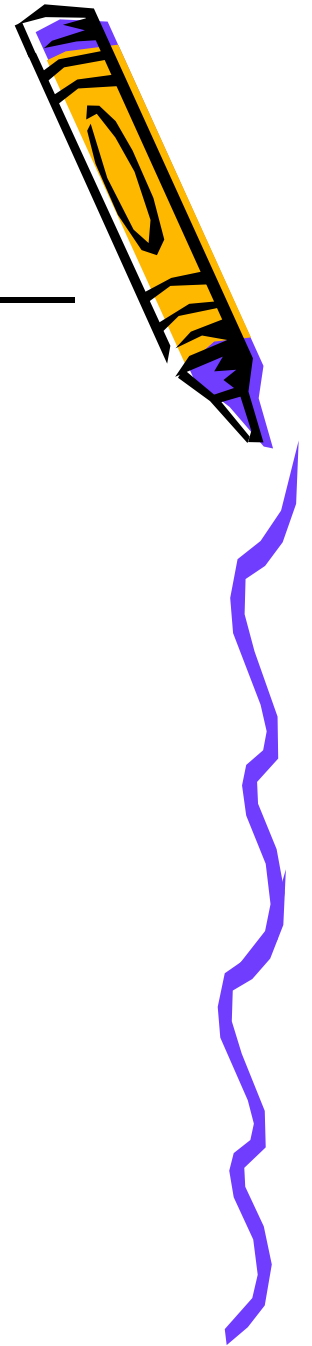
Moving Ahead

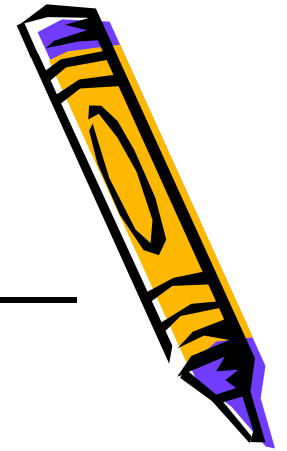
- Continuous auditing is not an end but a journey.
- It requires ongoing work to:
 - Develop indicators of control weaknesses / risk
 - Determine who will be notified and how
 - Obtain feedback on utility of information/analyses
 - Develop a strategy for reporting results of continuous auditing



Moving Ahead

- Related Activities
- Balanced scorecard
- Integrated risk management
- Continuous improvement
- Continuous/Active monitoring





Questions?

