Morning Topics

- Analytics imperative
- Obtaining data
- Determining data requirements
- Quantitative risk assessment for RBAP update
- Analytics in the Planning phase
Why Data Analytics?

• The IIA’s Global Technology Audit Guide (GTAG 16, Data Analysis Technologies) states, data analytics can give auditors:
  - Greater productivity and cost savings
  - To increase quality, efficiency and value
  - More efficient data access
  - Reduced audit risk

• ISACA’s white paper on data analytics, points out that a data analytics plan should focus on the end result by:
  - Performing ad-hoc analysis in support of targeted risk areas
  - Leveraging data analytics within many projects for greater insight
  - Moving to repeatable analyses periodically on high-risk activities
  - Defining success measures along the way.
Why Use Electronic Data Analysis?

- Electronic data is available
- Powerful and Innovative
- Accurate and efficient
- Interactive and easy to use
- Supports financial monitoring

The Department of Redundancy Department has 35,000 employees.

*How long would it take you to manually search payroll records to find duplicate payments and to identify the control weaknesses?*
Why Use Electronic Data Analysis?

- Understand the business process
- Assess integrity of info for decision making
- Identify and assess risk
- Improve consistency of review processes
- Improve timeliness
- Perform proactive tests
- Look for indicators of problems
- Review 100% of transactions
- Do continuous auditing / monitoring
Focus of Data Analytics in Internal Auditing

- Support for traditional audits, such as testing entire data populations as opposed to samples alone
- Routines designed to identify specific items, e.g. fraud, duplicate payments, duplicate purchases, split transactions, credit cards, suspicious journal entries, employee/vendor match, exceeding purchase limits

CAE thoughts on use of analytics by internal audit (from 2013 State of the Internal Audit Profession Study)

- 31% Data Analytics are used regularly
- 71% Plan to expand use of data analytics but do not have a well-developed plan
- 81% Data analytics are important to improving the quantification of issues
- 85% Data analytics are important to strengthening audit coverage
- 74% Data analytics are important to gaining a better understand of risks
Analytics Maturity Model

* PWC – Internal audit analytics conundrum (Dec 2013)
Understanding and Assessing the Business Process

- Policies define processes
- Processes are assigned to people
- Reports inform decision-making
- Controls are defined by decisions
- Automation implements controls

Business Goals and Objectives
Business Processes
People and Organization
Management Reports
Procedures and Controls
Systems and Data

Risks
- Processes are not aligned to goals and objectives
- People lack knowledge and experience
- Reports do not provide useful information
- Controls do not utilize information
- Controls don’t support business process

Data Analysis

Fraud and abuse; Assess fraud risk non-compliance
Develop understanding of process inputs outputs
Asses skills and competencies
Info sources; integrity and completeness of the data
Assess controls
Asses efficiency/effectiveness of info systems support to business process
Different Roles / Support by Data

**Internal Audit**
- Identify risk areas, risks not managed
- Identify control weaknesses
- Improve efficiency and effectiveness of business operations

**Evaluation**
- Assess efficiency and effectiveness of program areas
- Identify areas for improvement

**Internal Control**
- Monitor compliance
- Assess adequacy of controls
- Drive accountability and improved controls

**Business Process Management**
- Avoid & reduce errors
- Detect & prevent fraud
- Improve operational efficiency
- Responsibility for controls
- Assess and mitigate risks
Obtaining the Data

Access methods:

- Online access to application
- Run standard reports
- SQL or Ad hoc reports
- Access to application data or extract
Data Analysis: a Generic Approach

1. Goals and Objectives of the Review
2. Identify all available data sources
   - Internal to the organization
   - External to the organization
   - Data dictionary – list and description of fields
3. Obtain Access to the data and assess integrity
4. Formulate hypotheses about record / field relationships
5. Perform analytical tests for each hypothesis
6. Evaluate results and refine the tests
7. Re-run refined test to produce shorter, more meaningful results (repeat steps 4-6)
8. Evaluate (via analysis, interview, or other techniques) every item on the refined list
9. Address every item on the list - either:
   - Valid explanation is found; or
   - Probable improper - full investigation is needed
Approaches to Defining your Data Requirements

1. Start by defining control weaknesses.
2. Start by defining key data fields.

Diagram:
- Control Weakness
- Person / Fraudster
- Data Fields
- Data Analysis Tests

Directions:
- Start by defining control weaknesses
- Start by defining key data fields
Data Requirements – Approach #1

Examine control from the person’s perspective:

- Who could benefit or take advantage of a control weakness?
- How could they be involved?
- What can they effect, manipulate or control to allow the fraud to happen?
- Can they act alone or is collusion required?
- If collusion is required, who else is involved?
- What data analysis would identify control exposures?
Control Weaknesses / Risk

Discussion:

Risk/Control weakness: there is no control over the quantity received versus the quantity ordered.

1. Who might exploit the control weakness and why?
2. What analysis should be performed to determine if risk is being exploited?
3. What data would be required to determine if the risk is being exploited?
Data Requirements – Approach #2

Identify key data elements

- Info?
  Key data fields

- Who?
  Enter
  Modify
  Delete

- Why?
  Motivation/ Objective

- What?
  Key Controls

- Tests?
  Source / Integrity

16
## Accounts Receivable - Example

<table>
<thead>
<tr>
<th>Info/Data</th>
<th>Who</th>
<th>Why</th>
<th>Control</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Salesman</td>
<td>• Bonus</td>
<td>• Customer creation / modification</td>
<td>• Duplicates</td>
</tr>
<tr>
<td></td>
<td>Customer</td>
<td>• Fictitious</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Discount</td>
<td>• Customer creation / modification</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Credit rating</td>
<td></td>
<td>• Duplicates</td>
</tr>
<tr>
<td>Credit Limit</td>
<td>Salesman or Clerk</td>
<td>• Kickbacks</td>
<td>• Customer creation / modification</td>
<td>• Change to credit limit info</td>
</tr>
<tr>
<td>Payment terms</td>
<td>Clerk</td>
<td>• Kickbacks</td>
<td>• Customer creation / modification</td>
<td>• Change to payment terms</td>
</tr>
</tbody>
</table>
# Accounts Receivable - Example

<table>
<thead>
<tr>
<th>Info/Data</th>
<th>Who</th>
<th>Why</th>
<th>Control</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Clerk</td>
<td>• Kickbacks</td>
<td>• Shipping Date</td>
<td>• Due Date &gt; 30 days after shipping date</td>
</tr>
<tr>
<td>Amount</td>
<td>Clerk</td>
<td>• Kickbacks</td>
<td>• Contract info</td>
<td>• Amount due &lt; sales price</td>
</tr>
</tbody>
</table>

**Fraud risk**

- Incompatible duties
- Wrong customer
- Wrong bank account

**Test**

- SOD analysis
- Variance analysis
- Bank account info
Exercise – complete table for A/P

Identify the data fields required by the A/P process and complete table.

<table>
<thead>
<tr>
<th>Info/Data</th>
<th>Who</th>
<th>Why</th>
<th>Control</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Accounts Payable - Example

<table>
<thead>
<tr>
<th>Info/Data</th>
<th>Who</th>
<th>Why</th>
<th>Control</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor</td>
<td>Clerk</td>
<td>• Duplicates</td>
<td>• Vendor creation / modification</td>
<td>• Duplicates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Fictitious</td>
<td></td>
<td>• Blanks in key fields</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Change address or bank account</td>
<td>• Log</td>
<td>• Classify on Created by</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• duplicates</td>
<td></td>
<td>• Vendor Usage by clerk</td>
</tr>
<tr>
<td></td>
<td>Vendor</td>
<td>• duplicates</td>
<td></td>
<td>• Modifications by clerk</td>
</tr>
<tr>
<td>Invoice</td>
<td>Clerk</td>
<td>• Duplicates</td>
<td>• Duplicates</td>
<td></td>
</tr>
<tr>
<td>number</td>
<td></td>
<td>• Duplicates</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vendor</td>
<td>• Duplicates</td>
<td>• Duplicates</td>
<td></td>
</tr>
<tr>
<td>Amount</td>
<td>Clerk</td>
<td>• Over payment</td>
<td>• IR=GR=Contract</td>
<td>IR&lt;&gt; GR or Contract</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Payment terms</td>
<td>• Vendor table</td>
<td>Xtab – Vendor by payment terms</td>
</tr>
<tr>
<td></td>
<td>Vendor</td>
<td>• Over charge</td>
<td>• IR = GR = Contract</td>
<td>IR&lt;&gt; GR or Contract</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Accounts Payable - Example

<table>
<thead>
<tr>
<th>Info/Data</th>
<th>Who</th>
<th>Why</th>
<th>Control</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Clerk</td>
<td>• Early Payment</td>
<td>• Good Receipt (GR) and Invoice Receipt (IR) dates</td>
<td>• Compare to GR/IR dates</td>
</tr>
<tr>
<td></td>
<td>Vendor</td>
<td>• Early Payment</td>
<td>• GR and IR dates</td>
<td>• Compare to GR/IR dates</td>
</tr>
<tr>
<td>Payment Terms</td>
<td>Clerk</td>
<td>• Early Payment</td>
<td>• Vendor table</td>
<td>• Check payment terms</td>
</tr>
<tr>
<td>Fraud risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Incompatible duties</td>
<td></td>
<td></td>
<td>• SOD analysis</td>
<td></td>
</tr>
<tr>
<td>• User making payments to self</td>
<td></td>
<td></td>
<td>• Compare user and vendor info</td>
<td></td>
</tr>
<tr>
<td>• Wrong vendor</td>
<td></td>
<td></td>
<td>• Ratio analysis or invoicing sequence</td>
<td></td>
</tr>
</tbody>
</table>
Risk-based Audit Planning

IIA Puget Sound Chapter
September 2015

David Coderre
Dave_Coderre@hotmail.com
Agenda

• Development of data-driven key risk indicators
• Risk re-defined
• Risk Assessment - Strategic Objectives:
  1. Corporate Risk
     • Drilldown to determine which areas of the organization are contributing to the corporate risk
  2. Project or Activity Risk
     • Relative risk rating of organizational activities - on different risk categories
Risk Management: don’t worry ... I know what I am doing

* No beavers were harmed in the making of this slide
Overview

Problem with traditional risk assessments:

- Risk assessment relies primarily on qualitative and subjective measures
- Corporate risk profile is time consuming to prepare and is typically only updated once a year
- Corporate risk profile is an aggregate (top-down) view of risk
- Corporate risk profile does not allow you to examine organizational entity / activity impact on risk
- Corporate risk profile does not allow you to examine the different risk categories (e.g. financial, HR, operational, strategic, legal, technological, etc.)
Emerging View of Analytics

Using data analysis as a strategic planning tool

Quantifying risks by measuring consequence and monitoring likelihood
Determining response

Profiling where functions/risks reside in your organization

Monitor key control effectiveness/improvements to business
Stakeholders

Audit
- Ongoing assessment of risks and controls
- Identification of specific audits; drilldown into risks; refine audit objectives
- Annual risk-based audit planning

Finance
- Financial monitoring and control testing
- Assessment of new opportunities
- Statement of assurance

Corporate Risk Officer
- Support for corporate risk profile
- Assessment of mitigation efforts
- Ongoing assessment of current and emerging risks
Benefits of Ongoing Risk Assessment

- Auditors can be more proactive in assessing corporate risks and emerging areas of risk.
- Predictive business performance measures will help drive productivity by 20 percent by 2017.
- Managers that persist in using historical measures miss the opportunity to capitalize on opportunities that would increase profit or fail to intervene to prevent an unforeseen event, resulting in a decrease in profit.
- ERM is more reliable and effective when ERM frameworks are shown to produce credible and useful risk-adjusted performance measures on an ongoing basis.
Quantitative Risk Indicators (QRIs)

Pre-requisites for Effective QRIs

• By-product of production systems
• Easily updated and reduce reporting burden
• Free from bias
• React to changes in risk levels
• Support the assessment risk at any organizational level - drilldown to transactional level data
• Support annual and ongoing risk assessment process
Quantitative Risk Indicators

Subjective/qualitative assessment

Quantitative/data-driven assessment

Risk -> Probability and Impact

Risk -> Variability, Complexity and Volume
Ongoing Assessment of Risks

Objective:

The development and assessment of data-driven key risk indicators for ongoing assessments:

• **For each corporate risk**
  – Assessments of each organizational entity to determine impact on corporate risk and to develop an overall risk ranking (Low, Medium, High).

• **For each risk category**
  – Assessments of each organizational entity to determine impact on each risk category and to develop an overall risk ranking (Low, Medium, High).
Development of KRI

Steps:

1. Ensure that your Audit Universe is aligned to Strategic Initiatives that are tied to Corporate Objectives
2. Develop KRIIs for each corporate risk and for all corporate risk categories
3. Perform ongoing assessment of corporate risks and risk categories by audit entity or any slice of the organization
4. Select activities/entities to audit which have highest corporate or risk category ratings.
Quantitative Key Risk Indicators

Corporate Risks - example:

1. Risk the management or loss of Intellectual Property will damage ability to drive future revenue

2. Risk .......

X . Risk .....
# Developing Data-Driven Risk Indicators for Corporate Risk – Intellectual Property

<table>
<thead>
<tr>
<th>Risk Sub-category</th>
<th>Risk Result / Impact</th>
<th>Risk Indicator</th>
</tr>
</thead>
</table>
| **R&D** – failure to manage research and development projects. | • Project failure  
• Escalation in costs  
• Project delays | • Success rate  
• Expenditures / budget  
• Project status / Plan |
| **Safeguarding of IP** - failure to implement safeguards to prevent theft of IP by employees. | • Loss of IP  
• ? | • Percentage turnover  
• Number of grievances  
• Percentage use of outside / non fulltime employee  
• Geographic location of facilities |
| **IT Controls** – failure to implement IT controls to protect IP. | • Loss of data  
• System unavailable or unreliable  
• Control weaknesses | • Email attachments  
• # of unauthorized access attempts  
• System availability / downtime |
Overall Corporate Risk Rating

Combined assessment of risk across all corporate risks for each organizational entity.

<table>
<thead>
<tr>
<th>Org Entity</th>
<th>Corp Risk 1</th>
<th>Corp Risk 2</th>
<th>......</th>
<th>Corp Risk n</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entity 1</td>
<td>3.5</td>
<td>3.7</td>
<td></td>
<td>2.3</td>
<td>Low</td>
</tr>
<tr>
<td>Entity 2</td>
<td>3.5</td>
<td>4.5</td>
<td></td>
<td>4.6</td>
<td>High</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entity X</td>
<td>4.8</td>
<td>2.8</td>
<td></td>
<td>4.4</td>
<td>Medium</td>
</tr>
</tbody>
</table>
Risk Categories - example

- External environment
- Legal and regulatory
- Strategy
- Governance
- Operational

- Information
- Human resources
- Technology
- Financial and administrative
## Developing Data-Driven Risk Indicators for HR Risk Category

<table>
<thead>
<tr>
<th>Risk Sub-category</th>
<th>Risk Result / Impact</th>
<th>Risk Indicator</th>
</tr>
</thead>
</table>
| **Recruiting** – failure to attract people with the right competencies. | • Lack of resources  
• Lack of skills  
• ? | • Vacancies  
• Acting appointments  
• ? |
| **Resource Allocation** – failure to allocate resources in an effective manner to support the achievement of goals and objectives. | • Inappropriate resources for tasks  
• ? | • Type of employee  
• Employee classifications  
• Status of employee  
• Unions  
• ? |
| **Retention** – failure to retain people with the right competencies and match them to the right jobs. | • Demographics  
• Low experience levels  
• Turnover | • Years of pensionable service  
• Average age  
• Average years in position  
• ? |
| **Work environment** – failure to treat people with value and respect. | • Unhappy workforce  
• High sick leave | • Average sick leave/vacations  
• Percentage departures  
• ? |
HR Risk Category Data-Driven Indicators

Volume / Size
- # of employees
- Payroll dollars

Variability/Change
- Avg age; avg age of senior managers
- Avg years of pensionable service; % who can retire < 2 years
- Experience – years in dept / position / classification
- % Fulltime employees; % affected by org change
- % acting ; % new hires
- Leave: total leave taken; avg sick; avg vacation; avg unpaid

Complexity
- # types of employee; # classifications; # locations; # unions
- % employee with non-std hours

Other
- % Sex (M/F); % FOL (Eng/Fr)
**HR Risk Category Assessment**

**Objective:** to support the assessment of HR risk category for each audit entity.

<table>
<thead>
<tr>
<th>Audit Entity</th>
<th>Volume</th>
<th>Variability/Change</th>
<th>Complexity</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entity 1</td>
<td>304</td>
<td>5 6 12% 1</td>
<td>12 4 28%</td>
<td>Medium</td>
</tr>
<tr>
<td>Entity 2</td>
<td>281</td>
<td>13 2 13% 2</td>
<td>16 6 32%</td>
<td>High</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entity X</td>
<td>463</td>
<td>28 6 21% 4</td>
<td>9 8 14%</td>
<td>Low</td>
</tr>
</tbody>
</table>
## Data-Driven Risk Indicators for Finance Risk

Exercise: for these and additional risk categories - develop risk indicators

<table>
<thead>
<tr>
<th>Risk Sub-category</th>
<th>Risk Results / Impact</th>
<th>Risk Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Failure to establish a proper financial framework</td>
<td>• Errors and corrections</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Losses</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Suspense transactions</td>
<td></td>
</tr>
<tr>
<td>• Failure to establish budgeting and forecasting</td>
<td>• Over expenditures</td>
<td></td>
</tr>
<tr>
<td>processes</td>
<td>• Late expenditure decisions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Poor commitment accounting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• ?</td>
<td></td>
</tr>
<tr>
<td>• Failure to manage financial structure</td>
<td>• Complex financial structure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Inadequate financial structure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Discretionary expenses</td>
<td></td>
</tr>
</tbody>
</table>
# Developing Data-Driven Risk Indicators for Finance Risk Category

<table>
<thead>
<tr>
<th>Risk Sub-category</th>
<th>Risk Results / Impact</th>
<th>Risk Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Failure to establish a proper financial framework</td>
<td>• Errors and corrections&lt;br&gt;• Losses&lt;br&gt;• Suspense transactions</td>
<td>• % JV and reversals&lt;br&gt;• % Losses&lt;br&gt;• % Suspense account</td>
</tr>
<tr>
<td>• Failure to establish budgeting and forecasting processes</td>
<td>• Over expenditures&lt;br&gt;• Late expenditure decisions&lt;br&gt;• Poor commitment accounting&lt;br&gt;• ?</td>
<td>• Actual &gt; Planned&lt;br&gt;• % expenditures period 12+&lt;br&gt;• % not referencing a commitment or PO&lt;br&gt;• ?</td>
</tr>
<tr>
<td>• Failure to manage financial structure</td>
<td>• Complex financial structure&lt;br&gt;• Inadequate financial structure&lt;br&gt;• Discretionary expenses</td>
<td>• # of funds / fund centres&lt;br&gt;• Use of Internal orders / WBS&lt;br&gt;• # of currencies&lt;br&gt;• % discretionary expenses</td>
</tr>
</tbody>
</table>
Finance Risk - Data-Driven Indicators

Volume
- Total Expenses, Revenue, and Assets

Variability/Change
- Percentage of discretionary spending
- Percentage of expenditures in Period 12, 13+
- Total and number of JVs / Suspense account transactions
- Total and number of Reversal documents / Loss transactions

Complexity
- Number of Funds / Fund centres / Cost centres
- Number of Economic object categories / GLs
- Number of Currencies / Document types
- Use of Internal Orders / Purchase orders / Fund reservations
- Use of Materiel and Asset numbers / Real estate blocks / WBS
- Number of employees
- Number of P-Cards
Risk Factor Weighting

By default all risk factors are weighted equally. Enter the desired risk factor weight.

<table>
<thead>
<tr>
<th>Volume</th>
<th>Complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Expenses</td>
<td>Number of object categories</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>Number of funds</td>
</tr>
<tr>
<td>Total Assets</td>
<td>Number of Cost Centres</td>
</tr>
<tr>
<td>Number of Invoices</td>
<td>Number of GLs</td>
</tr>
<tr>
<td>Number of PRLs</td>
<td>Number of currencies</td>
</tr>
<tr>
<td>Number of acquisition cards</td>
<td>Number of document types</td>
</tr>
<tr>
<td></td>
<td>Number of Internal Orders</td>
</tr>
<tr>
<td>Variability</td>
<td>Number of POs and FRs</td>
</tr>
<tr>
<td>Pct discretionary spending</td>
<td>Number of material documents</td>
</tr>
<tr>
<td>Pct period 12 or later</td>
<td>Number of Assets</td>
</tr>
<tr>
<td>Number of JVs</td>
<td>Number of real estate blocks</td>
</tr>
<tr>
<td>Number of suspense recs</td>
<td>Number of WBS documents</td>
</tr>
<tr>
<td>Number of loss recs</td>
<td>Pct Overtime to Salary</td>
</tr>
<tr>
<td>Number of reversal recs</td>
<td>Pct Invoice Date Errors</td>
</tr>
</tbody>
</table>

OK Cancel
Financial Risk Category Rating

Financial risk rating:
• Overall rating;
• By volume;
• By variability; and
• By complexity

Not only can you assess which entity has the highest overall risk, but you can also determine whether it is because of volume, variability or complexity.
Quantitative Risk Indicators

ACL Demo
Other Risks - examples

Legal and Regulatory
- Number of new regulations
- Number of modified regulations
- Regulatory fines within the industry
- Frequency and extent of onsite visits by regulators
- Frequency of media coverage of issues affecting regulations

Cyber Security
- Number of firewall attacks and breaches
- Number of applications operating in the cloud
- Amount of IT traffic
- Assessment of the organization’s cyber security maturity
- Frequency of alerts from cyber security vendors

Source: 2014 Emerging Risks Teleconference and Panelist Discussion, Corporate Executive Board
Other Risks - examples

Retail

- Number of products
- Number of regions
- Sales / sq ft
- ???

Manufacturing

- Number of production lines
- Number of special runs
- Percentage defects
- Percentage downtime
- ???
**Overall Risk Category Rating**

Combined assessment of risk across all risk categories for each organizational entity.

<table>
<thead>
<tr>
<th>Org Entity</th>
<th>Financial</th>
<th>HR</th>
<th>......</th>
<th>Operational</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entity 1</td>
<td>3.2</td>
<td>3.2</td>
<td></td>
<td>4.3</td>
<td>Low</td>
</tr>
<tr>
<td>Entity 2</td>
<td>6.5</td>
<td>5.5</td>
<td></td>
<td>3.6</td>
<td>High</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entity X</td>
<td>4.3</td>
<td>1.8</td>
<td></td>
<td>4.4</td>
<td>Medium</td>
</tr>
</tbody>
</table>
Corporate Risk – rating by indicator
Overall Risk Rating by Audit Entity

Projects A - K
Audit Entity - rating by risk category
HR Risk Rating – by Region by Indicator
HR Risk Rating - Complexity by Entity

High-level of HR Risk
Conclusions

Data-driven risk indicators:

- Use operational system information
- Quantitative (data-driven) and can easily be updated (e.g. monthly/quarterly)
- Provide relative risk ranking for each org entity
- Support the risk identification and assessment process
- Support ongoing assessment of risk management and mitigation activities
- Support the ongoing update of the risk profile
- Support the ongoing assessment of risks for new initiatives
Risk Assessment in the Planning Phase

IIA Puget Sound Chapter
September 2015

David Coderre
Dave_Coderre@hotmail.com
Support to Individual Audits or Reviews

Planning phase of an audit or review
- Review operations / improve our understanding of business processes
- Identify and assess risks
- Assessment of control framework and testing of critical controls
- Identify areas for improvement in operations and controls
- Establish review objectives and scope

Conduct
- Assess compliance
- Test controls

Follow-up
- Status and impact of recommendation

Fraud Risk
- Identify and assess fraud risk
Support to Financial Officers

• Financial monitoring
• Trial balance
• Multi-year trend analysis
• Cost / Benefit analysis
• Life cycle costing
• Program and sub-program expenditures
• Post payment verification
• Internal control testing
• ICFR – analysis of risks and controls
• Assess fraud risk
• ???
There are better ways to check for weaknesses in the controls
Hazardous Materials Example

Objective:

• Ensure that purchasing and disposal activities respected environmental considerations
• Ensure that hazardous materials were being properly stored, used and disposed of

Background:

• Numerous warehouses/depots across the country
• Various types of hazardous materials with different environmental impacts, storage and health and safety requirements
Inventory

From

• Verifying inventory (counts)
• Three-way matching (contract – receipt – invoice)

To

• Economic order quantities
• Just-in-time Inventory
• Obsolete inventory
• Provisioning rates
• Fraud risks
  – Management override
  – Items sent to scrap
  – Turnover rates
  – Unusual pricing
  – Attractive items
Financial Trends and Analysis
Financial Trends and Analysis
Multi-Year Summaries

Create Multi-Year Summary Files

Starting fiscal year (format YYYY)  2007

Ending fiscal year (format YYYY)  2012

OK  Cancel

ver 1.0
## Multi-Year Trend Analysis

### Trends by Cost Centre by Fiscal Year

<table>
<thead>
<tr>
<th>BSEG_COST_CENTER</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0011000001</td>
<td>-255.16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19,074.84</td>
</tr>
<tr>
<td>0011006527</td>
<td>1,262.50</td>
<td>2,050.00</td>
<td>6,450.00</td>
<td>1,975.00</td>
<td>2,775.00</td>
<td>2,056.25</td>
<td>16,568.75</td>
</tr>
<tr>
<td>0011006711</td>
<td>3,503.61</td>
<td>3,768.41</td>
<td>3,561.78</td>
<td>24,702.32</td>
<td>3,736.40</td>
<td>14,722.92</td>
<td>53,995.44</td>
</tr>
<tr>
<td>0011006741</td>
<td></td>
<td>739.39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,025.08</td>
</tr>
<tr>
<td>0011006762</td>
<td>6,114.87</td>
<td>6,406.05</td>
<td>6,406.04</td>
<td>6,114.87</td>
<td>6,697.23</td>
<td>6,406.05</td>
<td>38,145.11</td>
</tr>
<tr>
<td>0011006763</td>
<td>-120.00</td>
<td>-240.00</td>
<td>-240.00</td>
<td>-30.00</td>
<td>-90.00</td>
<td>-390.00</td>
<td>-1,110.00</td>
</tr>
<tr>
<td>0011006917</td>
<td>3,060.51</td>
<td>2,608.99</td>
<td>2,660.02</td>
<td>2,523.95</td>
<td>2,775.76</td>
<td>4,303.61</td>
<td>17,932.84</td>
</tr>
<tr>
<td>0011006919</td>
<td>2,480.34</td>
<td>1,559.01</td>
<td>1,910.00</td>
<td>1,623.93</td>
<td>2,175.76</td>
<td>3,385.63</td>
<td>13,134.67</td>
</tr>
<tr>
<td>0011006923</td>
<td>1,429.97</td>
<td>1,478.90</td>
<td>1,482.64</td>
<td>1,442.01</td>
<td>1,573.16</td>
<td>6,396.71</td>
<td>13,803.39</td>
</tr>
<tr>
<td>0011006927</td>
<td>4,866.02</td>
<td>4,129.81</td>
<td>3,729.45</td>
<td>3,622.12</td>
<td>3,995.16</td>
<td>13,245.93</td>
<td>33,588.49</td>
</tr>
<tr>
<td>0011006929</td>
<td>-1,470.00</td>
<td>-1,470.00</td>
<td>-3,920.00</td>
<td>-490.00</td>
<td>-980.00</td>
<td>-490.00</td>
<td>-8,820.00</td>
</tr>
<tr>
<td>0011006935</td>
<td>1,251.93</td>
<td>1,263.49</td>
<td>1,338.67</td>
<td>1,231.86</td>
<td>1,343.91</td>
<td>1,982.95</td>
<td>8,412.81</td>
</tr>
<tr>
<td>0011006941</td>
<td>93,902.00</td>
<td>40,395.00</td>
<td>39,346.00</td>
<td>39,792.00</td>
<td>38,720.00</td>
<td>54,975.00</td>
<td>307,130.00</td>
</tr>
<tr>
<td>0011006942</td>
<td>89,706.00</td>
<td>79,655.00</td>
<td>78,007.00</td>
<td>103,431.00</td>
<td>92,522.00</td>
<td>443,321.00</td>
<td></td>
</tr>
<tr>
<td>0011006944</td>
<td></td>
<td>49,794.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5,708.00</td>
</tr>
<tr>
<td>0011006947</td>
<td>185,014.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>185,014.00</td>
</tr>
<tr>
<td>0011006951</td>
<td>-3,312.50</td>
<td>-2,800.00</td>
<td>-3,650.00</td>
<td>-1,975.00</td>
<td>-2,056.25</td>
<td>-13,793.75</td>
<td></td>
</tr>
<tr>
<td>0011006953</td>
<td>146,357.97</td>
<td>122,161.89</td>
<td>181,989.03</td>
<td>89,649.76</td>
<td>155,311.87</td>
<td>130,356.04</td>
<td>825,826.56</td>
</tr>
<tr>
<td>0011006955</td>
<td>5,286.24</td>
<td>5,061.61</td>
<td>5,098.52</td>
<td>4,876.02</td>
<td>5,378.43</td>
<td>11,284.68</td>
<td>36,985.50</td>
</tr>
</tbody>
</table>
Analysis Examples

- Inventory – obsolete, sale of scrap, warehouse space, delivery time, EOQ
- Succession planning
- Hazardous Materials
- Staffing
- Operational efficiency
- Duplicate invoices
- Reorganization
- Control testing
- Health claims
- Inventory Management
- Stale/backdated commitments
- Trial balance and financial trends

- Risk identification and assessment
- Acquisition card monitoring
- Payroll – rates and allowances
- User access rights
- Travel agency costs
- Overtime
- Separation of duties
- Charter air routes
- Telecom charges
- System conversion
- Management bonuses
- Recruitment process
- Program costing/tracking
Challenges and Opportunities

From

- Controls
- Compliance
- Information Gatherer
- Hindsight
- Shop Floor
- Tick and Bop
- Detection

To

- Efficiency and Effectiveness
- Governance, Risk Mgt and Control processes
- Knowledge Provider
- Foresight
- C-suite
- Strategic Change Agent
- Provision of Assurance
Operational Readiness

Is Unit ready to be deployed?

Factors:

- Equipment
- Personnel
- Support
- ?
Reference Materials

- INTERNAL AUDIT: Efficiency through Automation by David Coderre
- COMPUTER-AIDED FRAUD: Prevention & Detection by David Coderre
- FRAUD ANALYSIS TECHNIQUES USING ACL by David Coderre
Questions?