A High Tech Sleuth? –
Technological Assistance for
Corruption Detection and Prevention

Presented to TRIC
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Working definition for this talk

“Fraud and corruption can take many forms. Fraud is normally characterised by some form of deliberate deception to facilitate or conceal the misappropriation of assets, whereas corruption involves a breach of trust in the performance of official duties and may be considered as official misconduct.”

Queensland Crime and Misconduct Commission

www.cmc.qld.gov.au
Road Map

• Introductory concepts
• Some advanced technology
• Characteristics anti-corruption IT systems
• Examples
  – Early intervention police systems
  – KACC - Kenyan Crime and Misconduct Commission
  – Swedish work on ICT based anti-corruption methods
• Conclusions
• Questions
Introductory Concepts

- Intelligence led investigations
- Fraud triangle
- Relevant technologies
Intelligence and intelligence led investigations

“Intelligence: information that has been evaluated and stored in a way that makes it actionable for the purposes of the organisation as a whole, forming a long lasting, single point of truth”

www.DistillerySoftware.com

“a model in which intelligence serves as a guide to operations, rather than the reverse”  Wikipedia
Visualising intelligence – Some (imaginary) link charts
The Fraud Triangle

- Opportunity
- Fraud Triangle
- Motivation
- Justification
Advanced Technology to Break the Fraud Triangle

• Prerequisite: massive amounts of electronic data
  – Numeric, text
  – Operational data: Audit logs, operational logs, transactions etc.
  – Textual data: emails, messaging, documents etc
• Predictive analysis: combination of data mining and game theory
• Natural language understanding

*Feeds into intelligence*

*Typically not evidence!!*
Opportunity

- Objective to reduce opportunity or increase likelihood of detection
- Improve access control & security
- Unusual patterns of behaviour
- E.g, Police Early Intervention Systems
  - identify low levels of on the spot fines, or
  - analysis of citizen complaints
Justification

• Analysis of email or other electronic messaging content

• NUIX: warning signs can always be found in emails

• Phrases like “I deserve it”, “Everyone is doing it” may be identified using sentiment analysis

www.nuix.com
Motivation

- Invariably driven by a financial imperative
- Rule based methods (“if employee A is a gambler then increase risk level”)
- Employee email content analysis can identify changes in personal circumstance that may increase financial pressure
- Forensic accounting methods: look at unsustainable life-style changes
Technology Research Possibilities

- Controlled experiments
- Review and improve technologies

Problem: Getting real data!
Systems are the key

- Provide complete life-cycle support
- Gather + analyse intelligence from different sources
- Must prioritise actions
- Ensure follow-up activities are appropriate to the organisation
Elements of an IT based anti-corruption system

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Function</th>
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<tbody>
<tr>
<td>Identify collusion and serial offenders</td>
<td>Retain knowledge gained from prior activities</td>
</tr>
<tr>
<td>Prioritise areas of concern</td>
<td>Strong risk assessment</td>
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<td>Enforce corporate processes</td>
<td>case management standards</td>
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<td>Prevent corruption operators</td>
<td>Comprehensive audit trails</td>
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<td>Guarantee access control, and privacy protection</td>
<td>Very strong levels of security</td>
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<td>Access to relevant organization data</td>
<td>Integrate with operational and admin systems</td>
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A few examples in public domain

- US police early intervention systems
- Public complaints and case management system used by KACC, the Kenyan Anti-Corruption Commission
- Swedish research program into ICT in developing regions
Police early intervention systems

- Pioneered in N America
- Look for early indicators
- Focus on no blame
- Prevention not punitive
- Complemented by strong ethics, code of conduct and counselling

“Inquiry into Early Intervention Systems in NSW Police”
KACC – Kenyan Anti-Corruption Commission

• KACC founded in 2003
• Computer based system to support complaints and provide case management
• Delivered by Distillery Software in 2008.
• Funding provided through a consortium led by KPMG
“Empowering People & Communities in Developing Regions”

- Swedish research program into ICT in developing regions
- Reduction in monopolies and discretion in managing information holdings
- Discussion on how to avoid moving corruption from one place to another
- Not the panacea

www.spidercenter.org/files/ICT4D_corruption.pdf
Conclusions

• Developed countries
  – moves to early intervention on corruption
  – Technology will assist in identifying people at risk
  – electronic operational data

• Developing countries
  – difficult to move to early intervention without data
  – empower their citizens to fight corruption by well crafted systems
  – generate data to take next steps
Questions