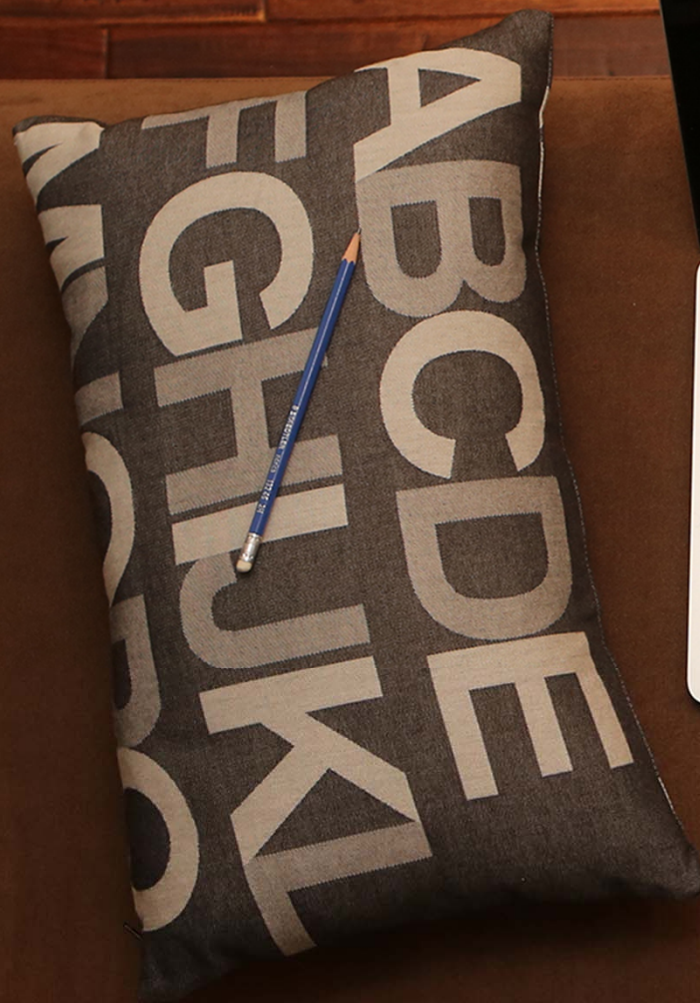


MAKING SENSE OF DATA

Analytics in Action

Shagen Ganason, CIA
CAE, Te Puni Kōkiri (Ministry for Māori Development)



Te Puni Kōkiri
REALISING MĀORI POTENTIAL

Agenda

- Context
- Analytics
- Case Study 1
- Case Study 2
- Internal Controls
- Tools and Resources
- Summary





Context

Department of Conservation



Department of Conservation
Te Papa Atawhai



11 Conservancies
44 Area Offices
1800 – 3200 Staff
Budget NZ\$390m
Assets NZ\$5.4b
3 Auditors



What business are they in?



What business are they in?





What business are you in?



Automotive



Banking &
Financial Services



e-commerce



e-learning



Energy &
Utilities



Healthcare



Insurance



Logistics



Media &
Entertainment



Retail



Technology



Travel &
Hospitality

Quick Poll

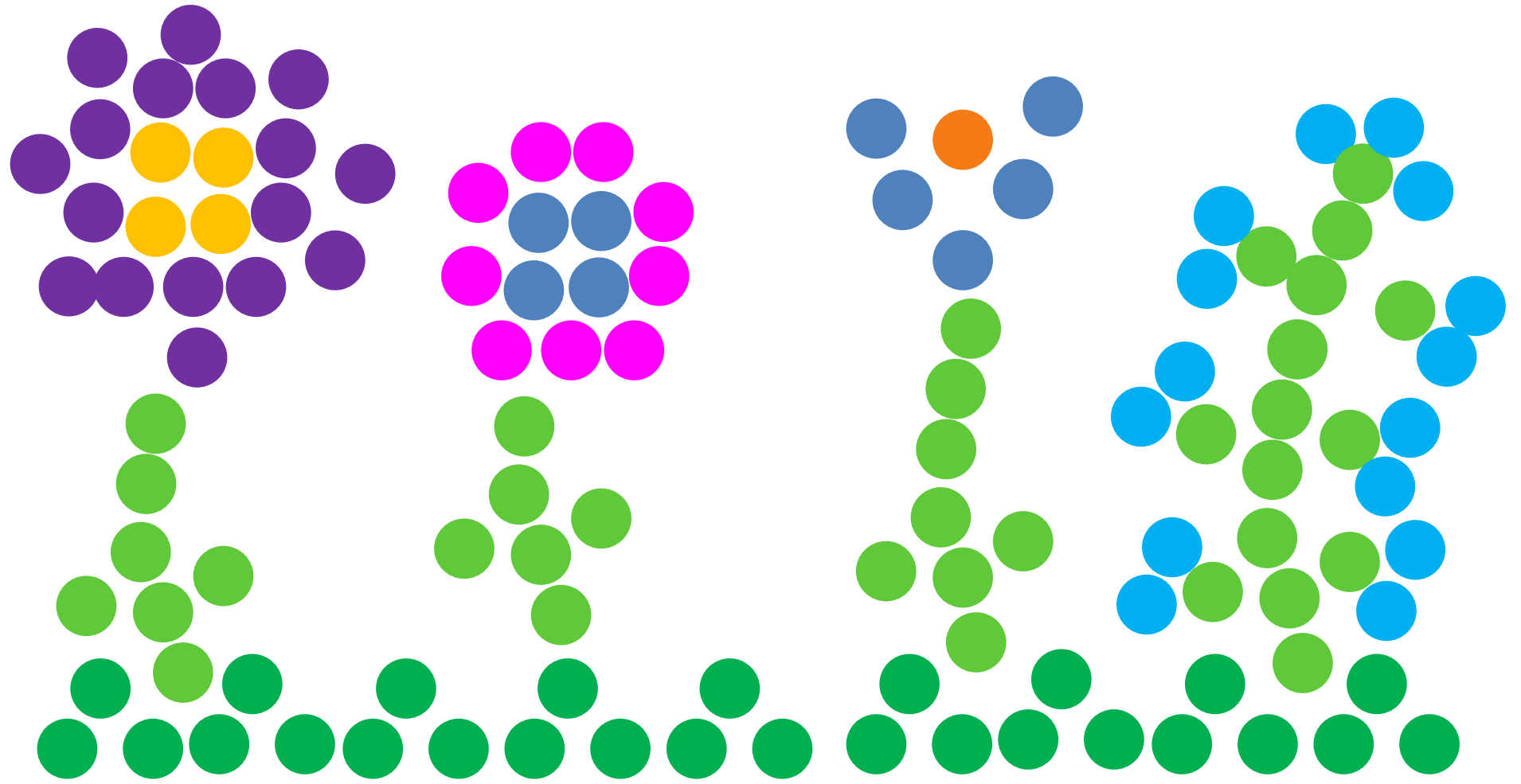
Does your organisation use data analytics in fraud prevention and/or detection?

Yes

No



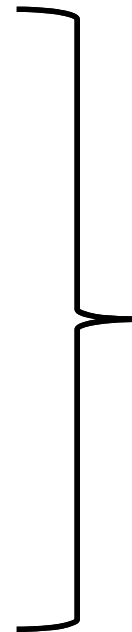
Data vs. Information



Data Analytics



- Collect
- Transform
- Analyse
- Mine
- Report



Informed
Decisions

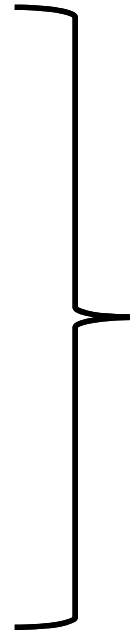


Traditional risk based analytics

Text Analytics



- Pattern
- Frequency
- Concept
- Linkages
- Key word association



Based on what
you already know

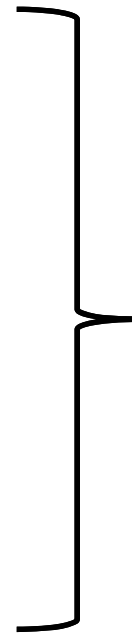


Non-traditional analytics

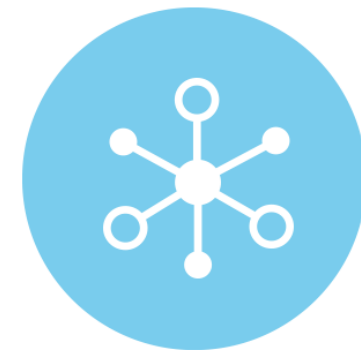
Visual Analytics



- Coordinate mapping
- Relationship
- Linkages
- Pattern
- Proximity analysis



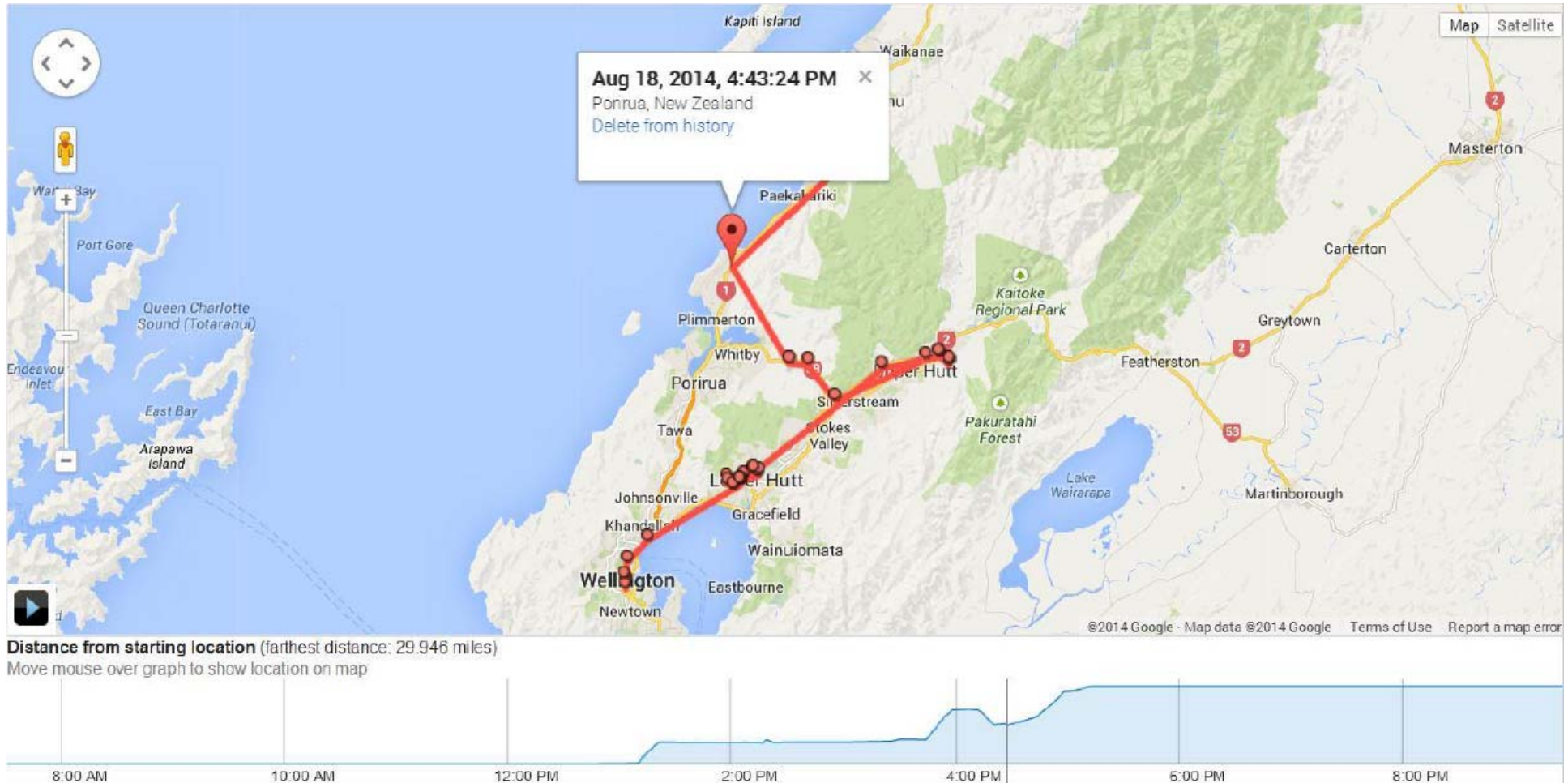
Based on what you already know



Non-traditional analytics

Visual Analytics

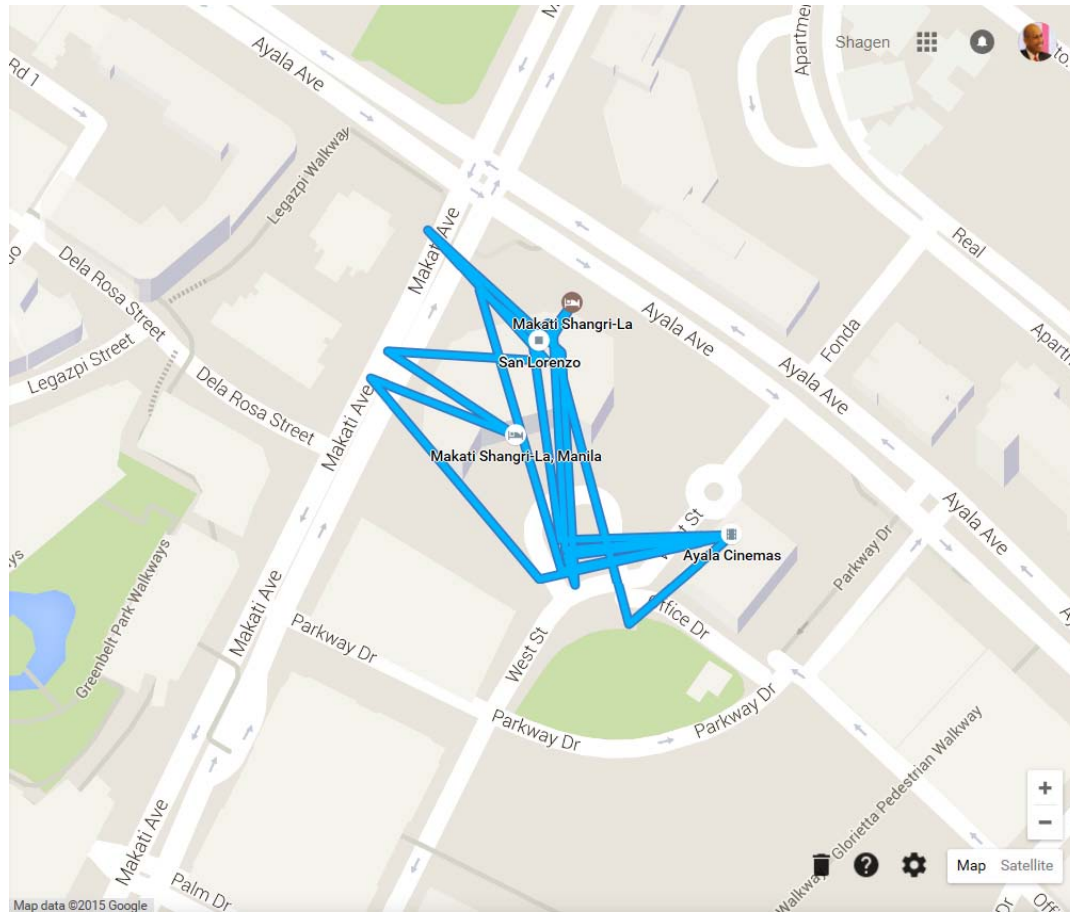
<https://maps.google.com.fj/locationhistory>



Non-traditional analytics

Visual Analytics

<https://maps.google.com.fj/locationhistory>



Non-traditional analytics



Case Study 1

Case Study 1

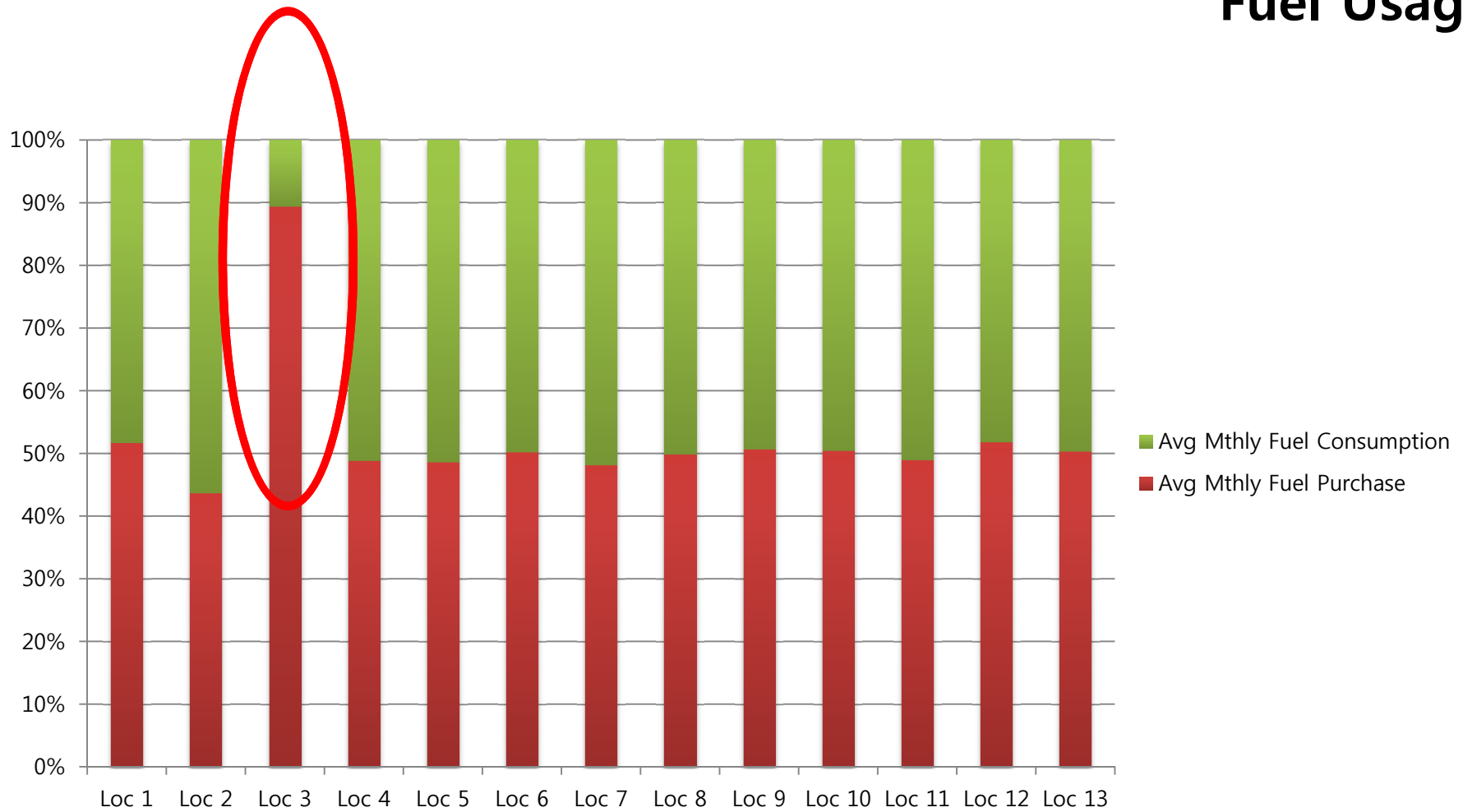


- Excessive fuel usage noted
- Matched to fuel consumption
- Invoice documentation & approval
- Email connections and correlations
- PCard - purchase expensive & attractive items
- Public auction site link identified
- Handed over to Police

Case Study 1



Fuel Usage



Case Study 1



Invoices

Invoice documentation

- Evidence of delivery
- No usage data provided

Invoice approval

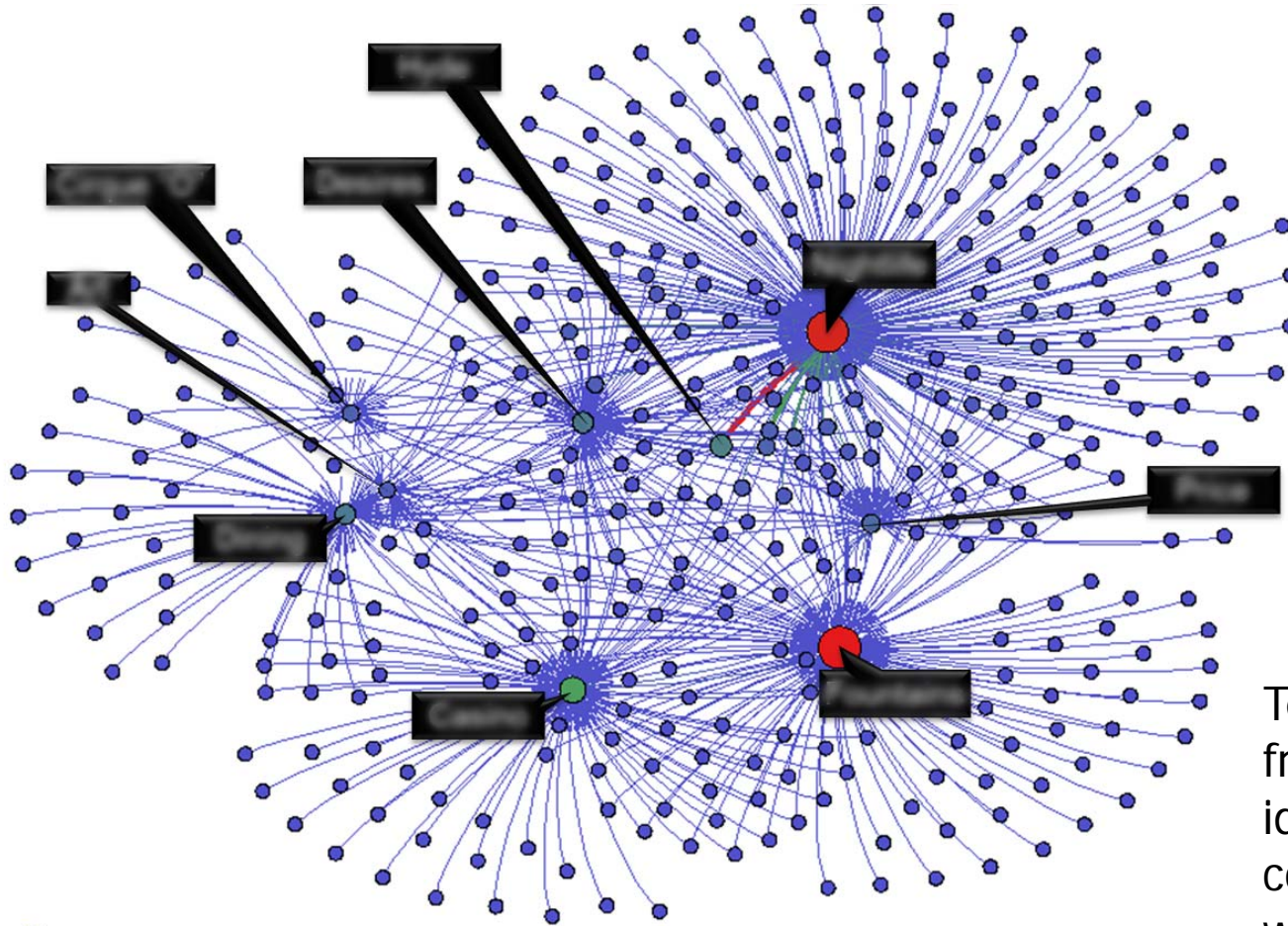
- User logged as the manager
- Approved by site accountant
- Circumvented approval limits



Case Study 1



Email



Text Analytics of emails from these individuals identified two strong correlation and several weak

Case Study 1

Email

Keyword

Rationalisation

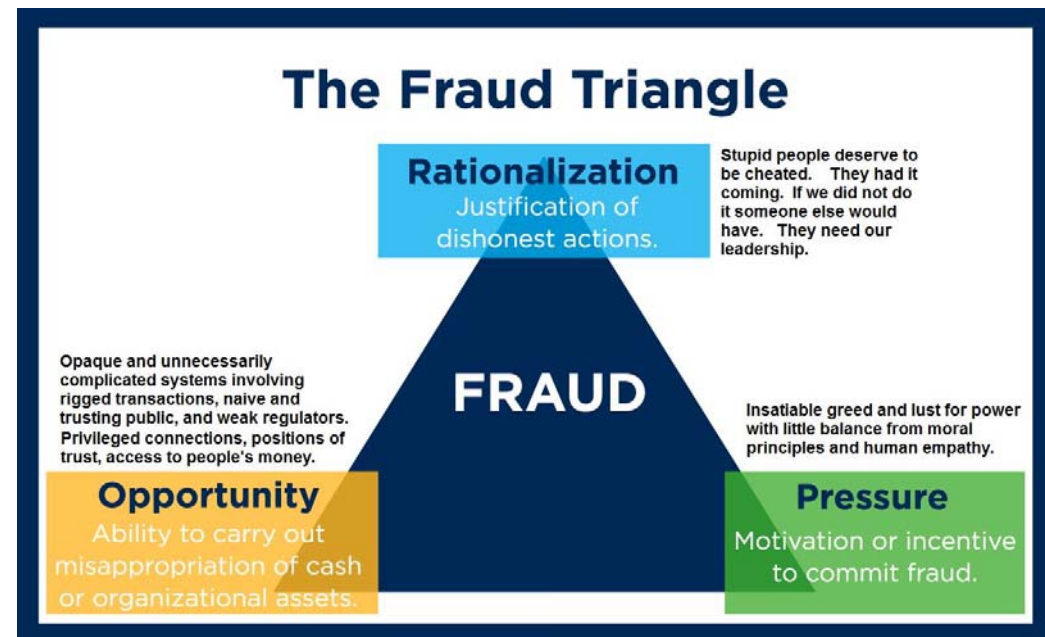
It's OK, sounds reasonable, I deserve, therefore, find out, get back, find it, figure out, catch, doesn't make sense.

Opportunity

Override, write-off, capture cost, correct, appropriate, reserve, misconduct, departing, discount, difficult, fail, critical.

Motivation

Meet budget, favour, problem, committing, creative, concern, not sure, spread, revise, release,



Case Study 1



PCard

PCard

- Over 3 yr period – excessive attractive assets
- Purchase and sales of vehicles

Auction sites

- On sold public assets



Discussion

- 1 Based on the analytics we discussed, what could the auditor have done to enhance/strengthen the internal controls using analytics?
- 2 What triggers could have been useful to detect this before it happened?

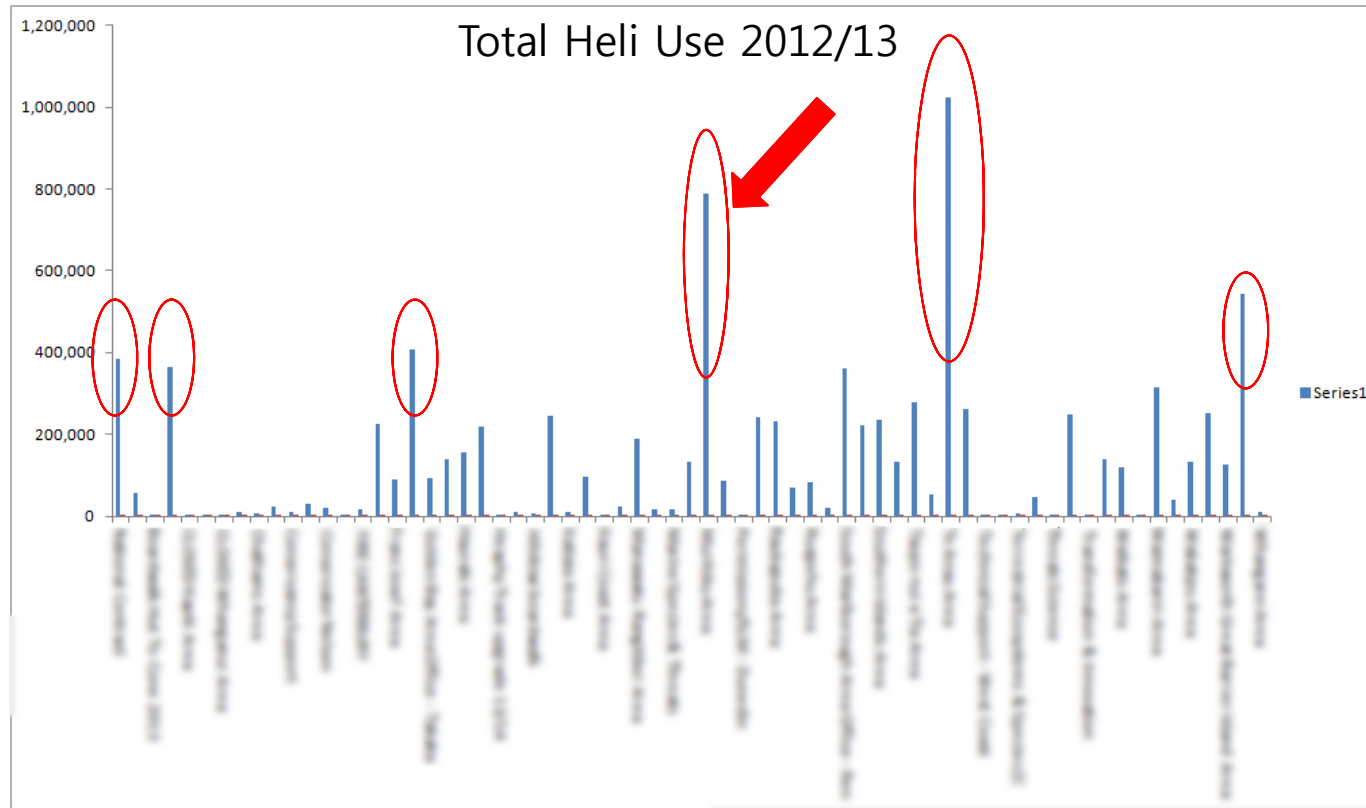


Case Study 2

- Exceptionally high use of helicopters
- Circumvent delegated authority
- Matched flight plans against Google Earth
- Email pattern and connections
- Fictitious invoices created
- Fictitious vendor set up
- Handed over to Police

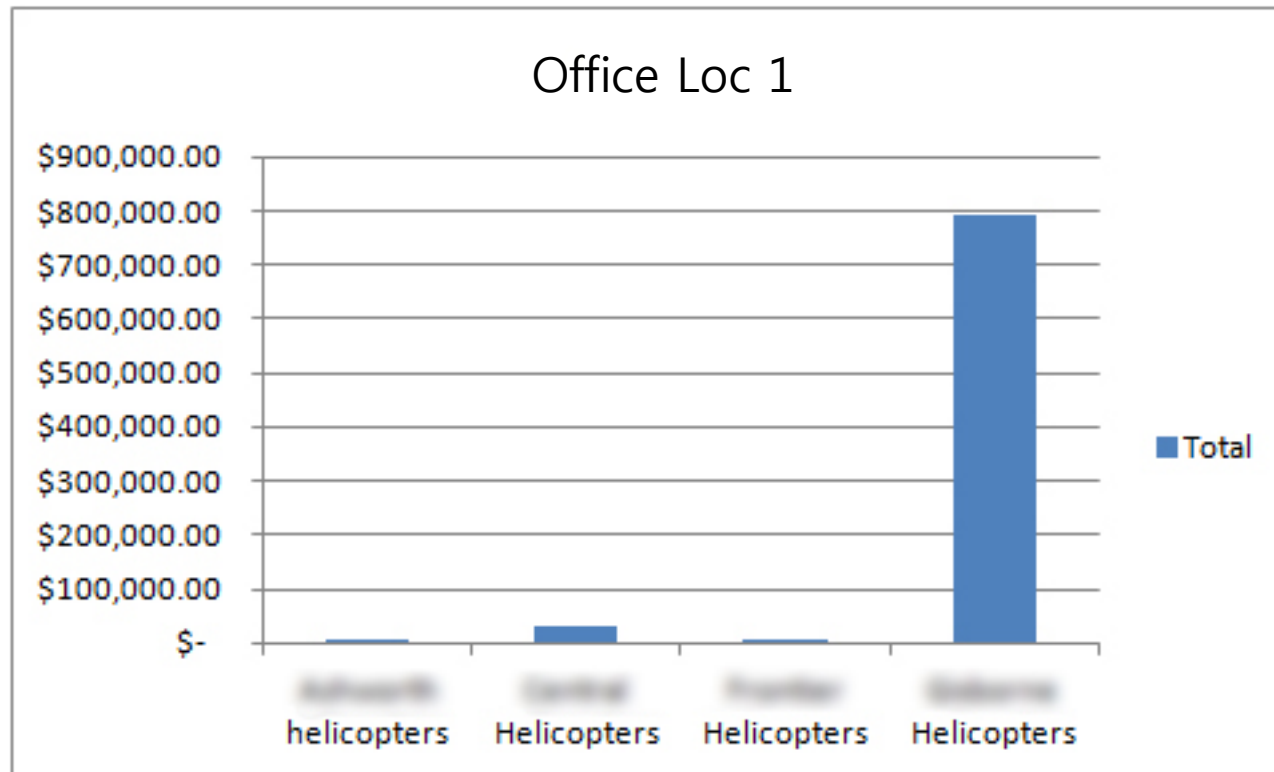


Case Study 2



Selected an office where value of flights could not be justified against amount of areal work required

Case Study 2



Within the selected location, one supplier had more business than any other supplier

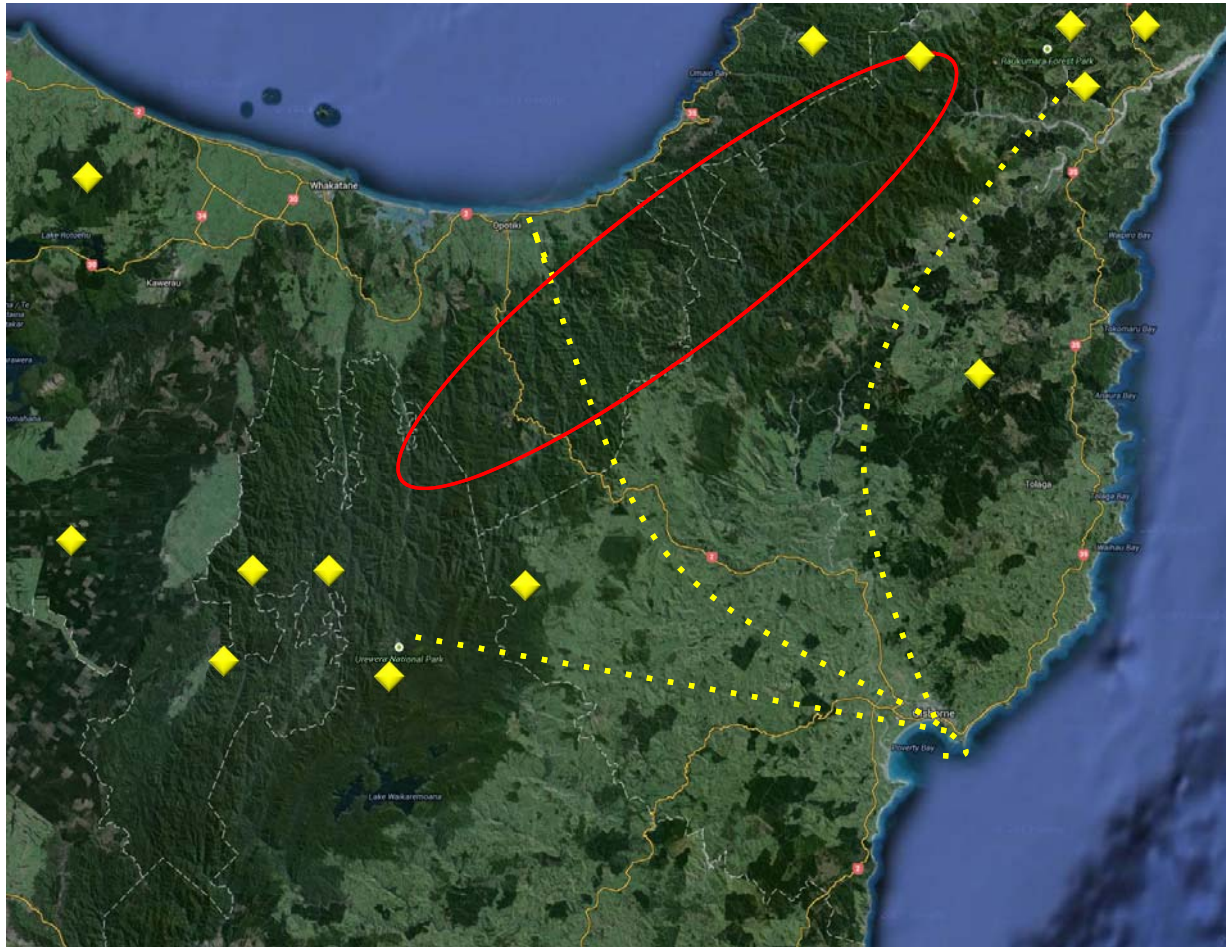
Case Study 2



Isolated one individual who procured more helicopter use at this location than anyone else

Circumvented approvals limits

Case Study 2

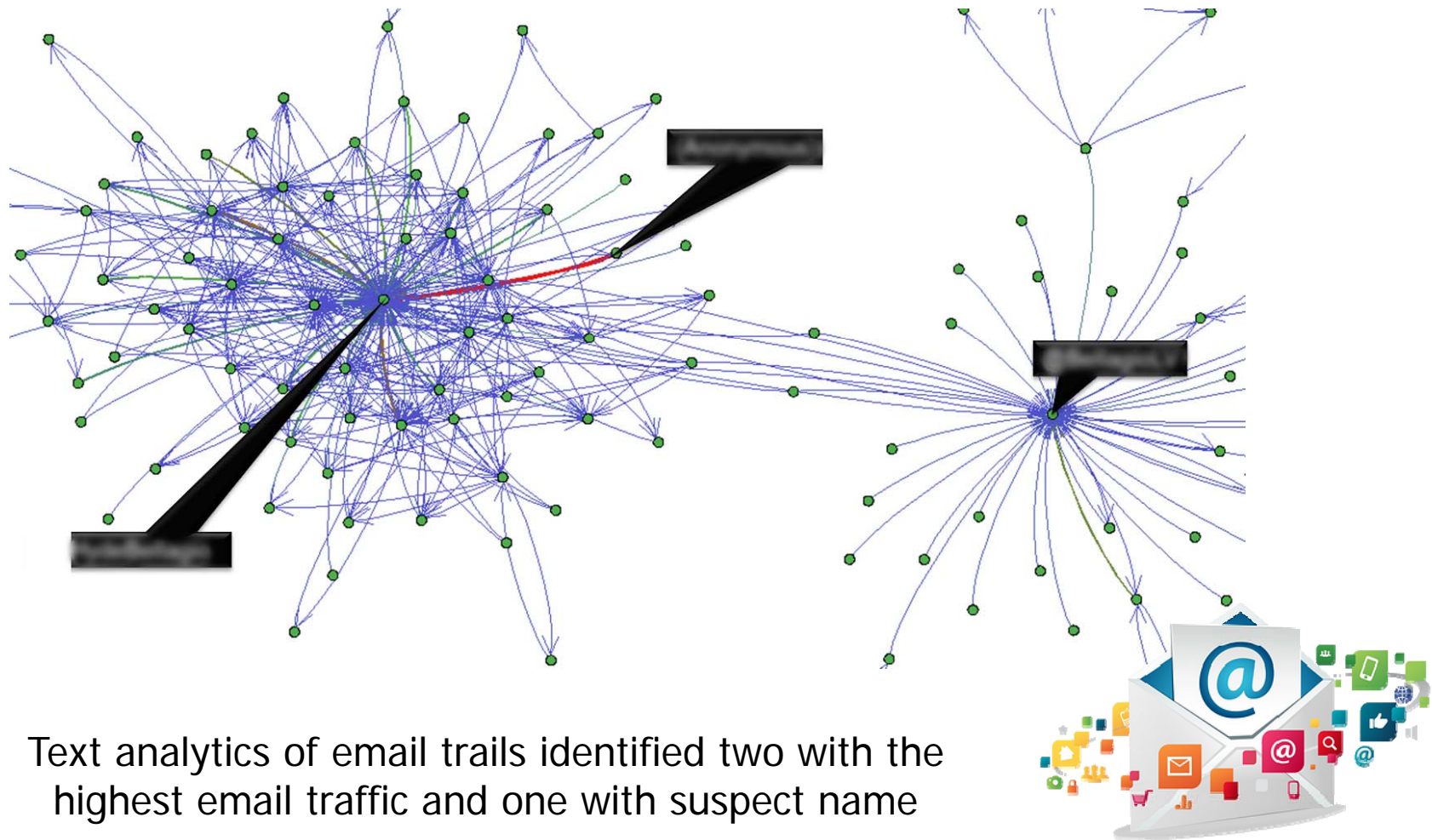


Obtained flight log
from supplier and
plotted route on
Google Map

Locations flown
had no assets

◆ *Asset Location*

Case Study 2



Text analytics of email trails identified two with the highest email traffic and one with suspect name

Case Study 2

Invoice Tracking Sheet

Originating Office: _____ DATE: 5/06/13

Originating Office _____

Supplier	Description	Invoice Number	Dated	Payment Due	Amount GST Incl	Date Invoice Received	Budget Mgr	CC/WBS	GL Code
360 Degrees	service of doc.	635	09/08/13	20/09/13	357.65			6405124018	6237
Alba Alliance	debt recovery	655	27/07/13	20/08/13	351.90			6405124010	6237
AlSCO	Fem care unit	CNER162259	31/07/13	20/08/13	21.15	9/08/13		640501	6233
AlSCO	Matata	CRTA242351	31/07/13	20/08/13	93.45	9/08/13		6405303003	6233
Mick E. Mowse	Housefly pupae	00122211	19/08/13	20/09/13	60.80			6405408006	6232
Cake tin	Jan's visit	2486	23/08/13	30/08/13	100.00			641101	6043
Cliffs electrical	lighting cooks landing	INV10936	25/07/13	20/08/13	3128.00	30/07/13		6405202001	6232
CognitaAV		00005498	12/08/13	20/09/13	285.00	26/08/13		6405301001	6232
CognitaAV					360.87			6405303002	6235
CSL ME Ltd	alarm	191884	31/07/13	20/08/13	51.11	6/08/13		640501	6110
Donaldson Plumbing	Rimu St, Te Araroa	16202	15/08/13	20/09/13	551.93	19/08/13		640501	6110
Doug Perkins	Ngatiawa fenceline	INV-0031	31/07/13	20/08/13	19625.21	20/08/13		6495412006	6237
Doug Perkins	Pacific Heights	INV-0030	31/07/13	20/08/13	1777.38	20/08/13		6495412006	6237
Eastern Bay Upholst	belt & bags for flags	00002542	12-Jul	20-Aug	127.44	7-Aug		6405101001	6230
Firewatch	extinguishers	INV-1887	31-Jul	20-Aug	40.82	6-Aug		640501	6232
Frame Group	tauranga bridge	8458	31/07/13	20/08/13	622.73			6405304101	6200
Gisborne Distr Council	rimu st	2014/6053	26/07/13	20/08/13	2074.64	30/07/13		640501	6110
Gisborne Distr Council	carnarvon st	2014/26228	26/07/13	20/08/13	4895.71	30/07/13		640501	6110
Gisborne Heli	Te Waiti	HXU-6728	11/06/13	20/07/13	2018.25			6405301001	6200

Suspect name turns out to be a fictitious vendor
Set up approved by manager

Discussion

- 1 Based on the analytics we discussed, what could the auditor have done to enhance/strengthen the internal controls using analytics?
- 2 What triggers could have been useful to detect this before it happened?



Internal Controls



- Internal controls are only as good as the people who administer them. Many organisations claim to have sound control frameworks but in reality very few do.
- Proactive framework requires proactive people; and lots of thinking to identify “what could” and not “what is”.
- Most people are reactive (human nature). To many organisations, to identify “what could” is seen as a waste of resource (time and money).
- End result – reliance is placed on trust, hope, culture and people.

Tools and Resources

- Search engines
- Public records for addresses and phone numbers
- Digital footprint
- Birth, death and marriage registrar
- Reverse look ups (phone & addresses)
- PPSR (personal property security registrar)



Tools and Resources

- Google Earth (2D, 3D, Street View and Areal)
- Physical address



Tools and Resources

- Social media (LinkedIn, Facebook, Twitter, etc.)
- Online news sites



Tools and Resources

What do you search for?

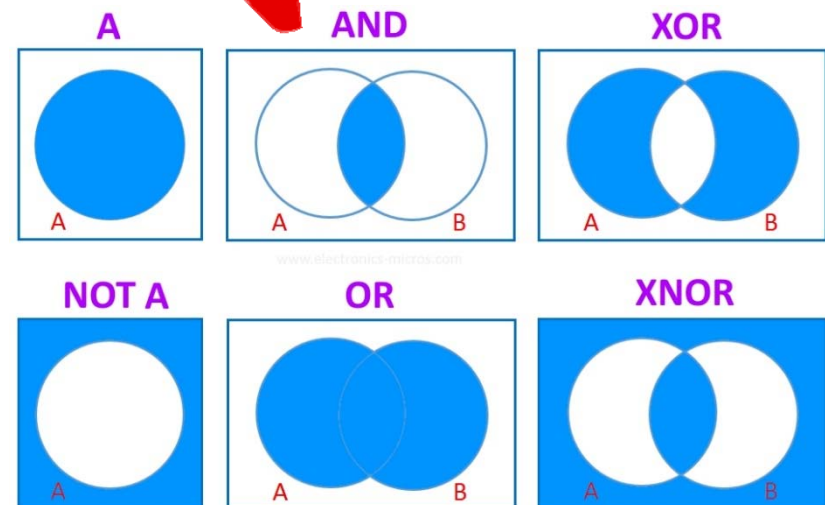
- Topical searches
- Boolean logic
- Refine and narrow searches
- Acronyms, aliases and AKA's
- Try common misspellings
- 5 wives and a husband (5W1H)



Tools and Resources

How do you search

- Known particulars
- Known events
- Use "AND", "OR" and "NOT"
- Quotation marks
- Character strings



Summary

- Understand your business
- Difference between data and information
- Different types of analytics
- What you can do with data
- Case studies
- Limitations of internal control
- Tools at your disposal to mine data for information



