

Broader Application of Data Analysis within Internal Audit

Sean Hounslow CISA CIA CFE CPA
Head of Internal Audit

Department of Communities, Child Safety and Disability Services
Audit and Compliance Investigation Services



Some Questions
My Journey
My Challenges



- Difficult to gauge the consequence side of risk
- How to quantify the likelihood side of the risk equation?
- Were these risks changing?
- How can I support the management of risks that are above a tolerable level?
- What is the appropriate approach in responding to risks and how do I monitor risk treatment / control effectiveness?
- How can I contribute to the other governance mechanisms ie. fraud and corruption response?
- How do I justify investment into CAAT development and application ?

Traditional View of computer assisted audit techniques (CAATS)

- ❖ Test controls
- ❖ Support Audit Execution
- ❖ Follow up exceptions
- ❖ Transition to Management

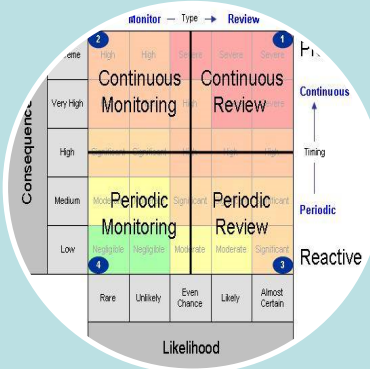
DUPLICATE PAYMENTS, DUPLICATE PAYMENTS, DUPLICATE PAYMENTS

This is also traditionally the beginning and the end of the CAAT journey
It is Not the End Game

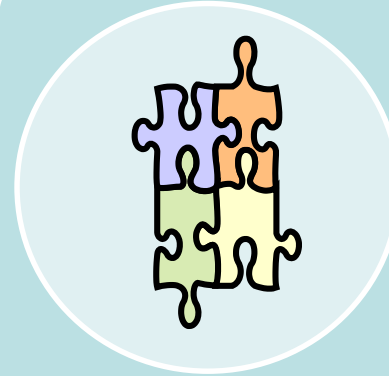
Emerging View Supporting Assurance



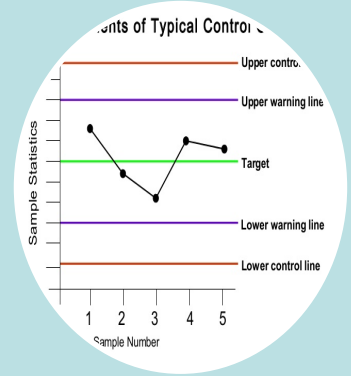
Using data analysis as a strategic planning tool



Quantifying risks by measuring consequence and monitoring likelihood
Determining response



Profiling where functions and risks reside in your organization



Monitor key control effectiveness and improvements to business



Goal:

Data Driven Assurance Map

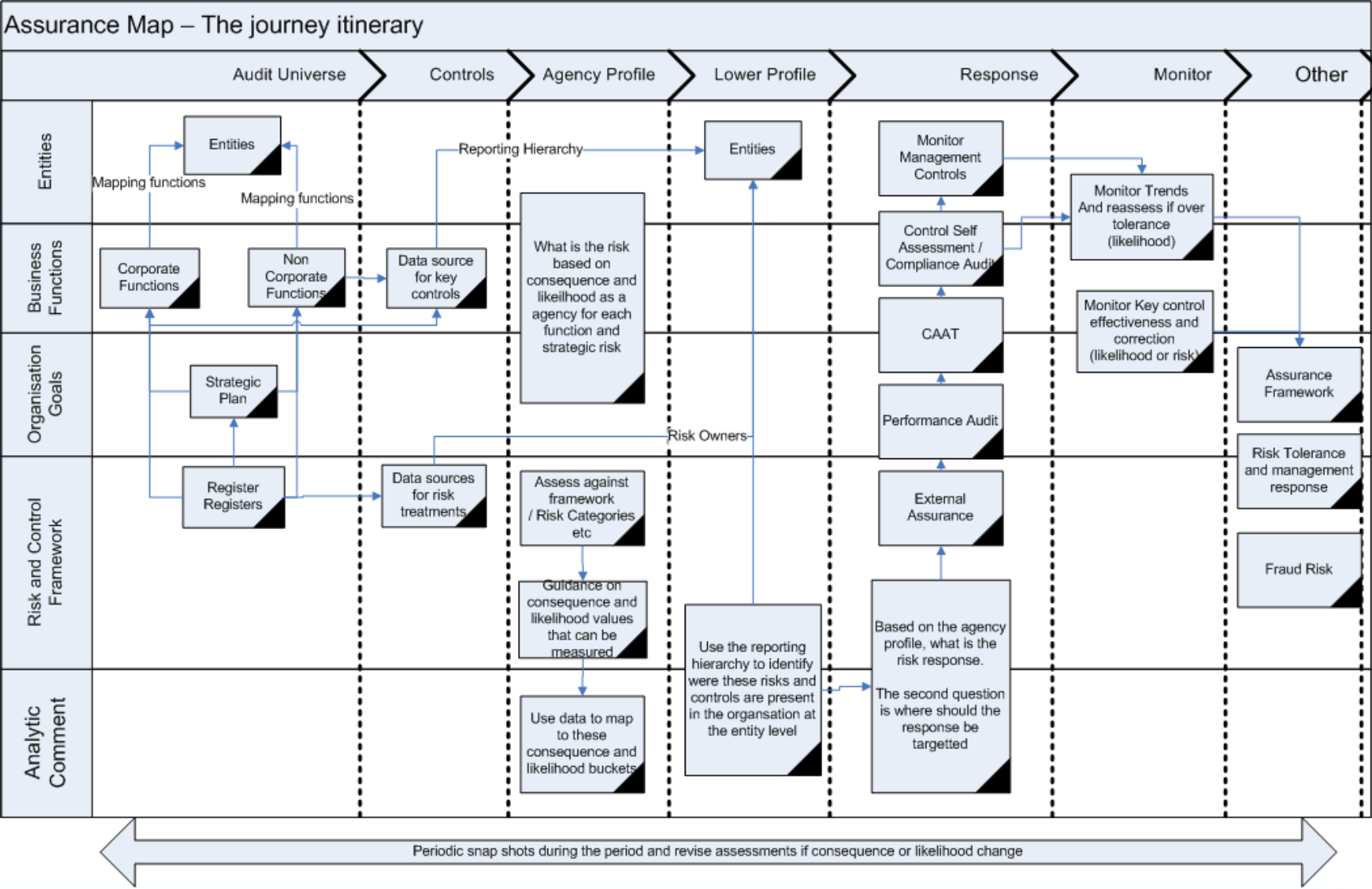
Assurance mapping is a tool which enables Internal Auditors to visually present all **assurance** activities of the organisation, both internal and external, as they apply to the organisation's risks. Once complete, risks with inadequate **assurance** coverage and / or areas with duplicated coverage can be identified.

It shouldn't be static

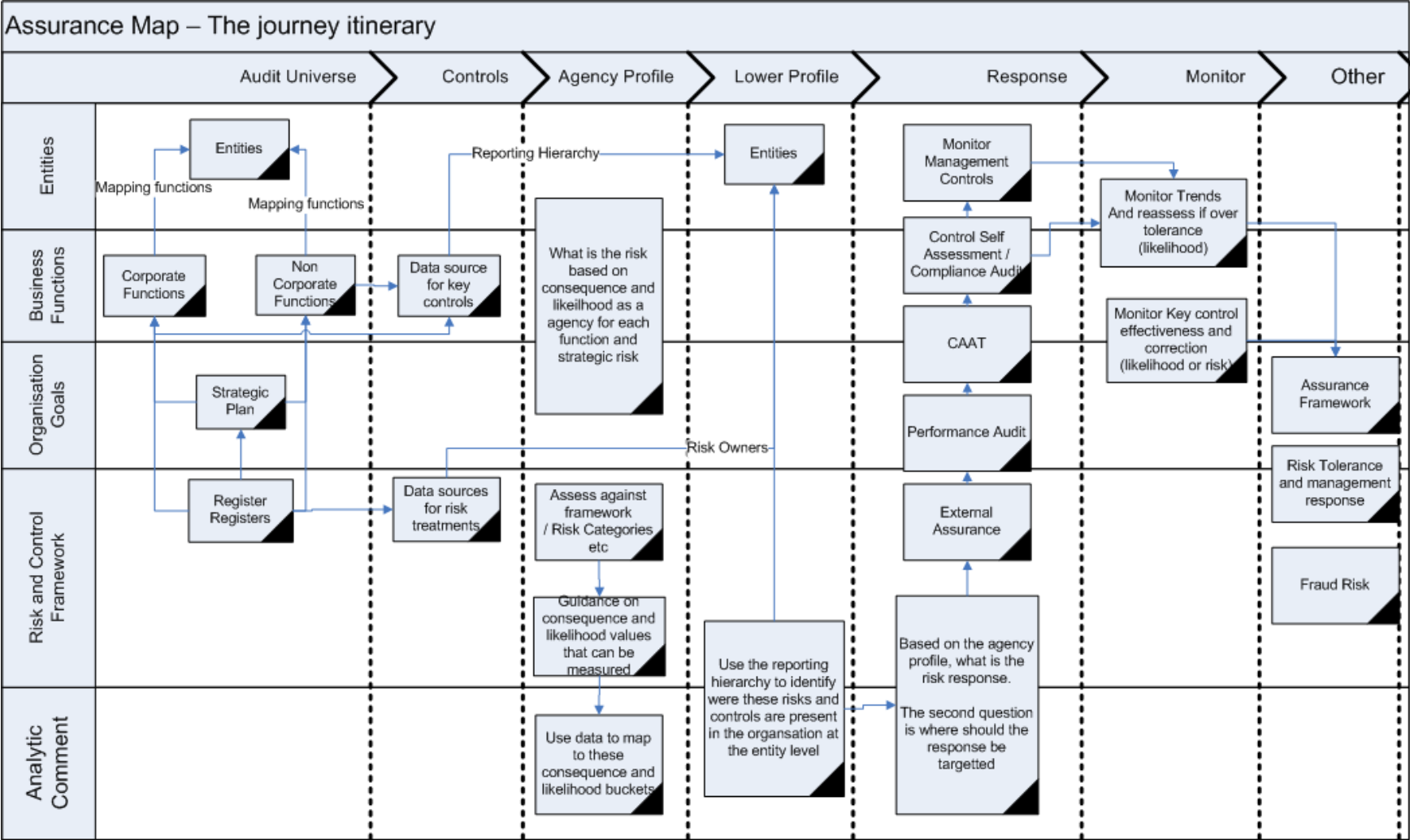
Your audit plan isn't, why would the basis for your plan be static



The Overall Model – My view



Audit Universe



Periodic snap shots during the period and revise assessments if consequence or likelihood change

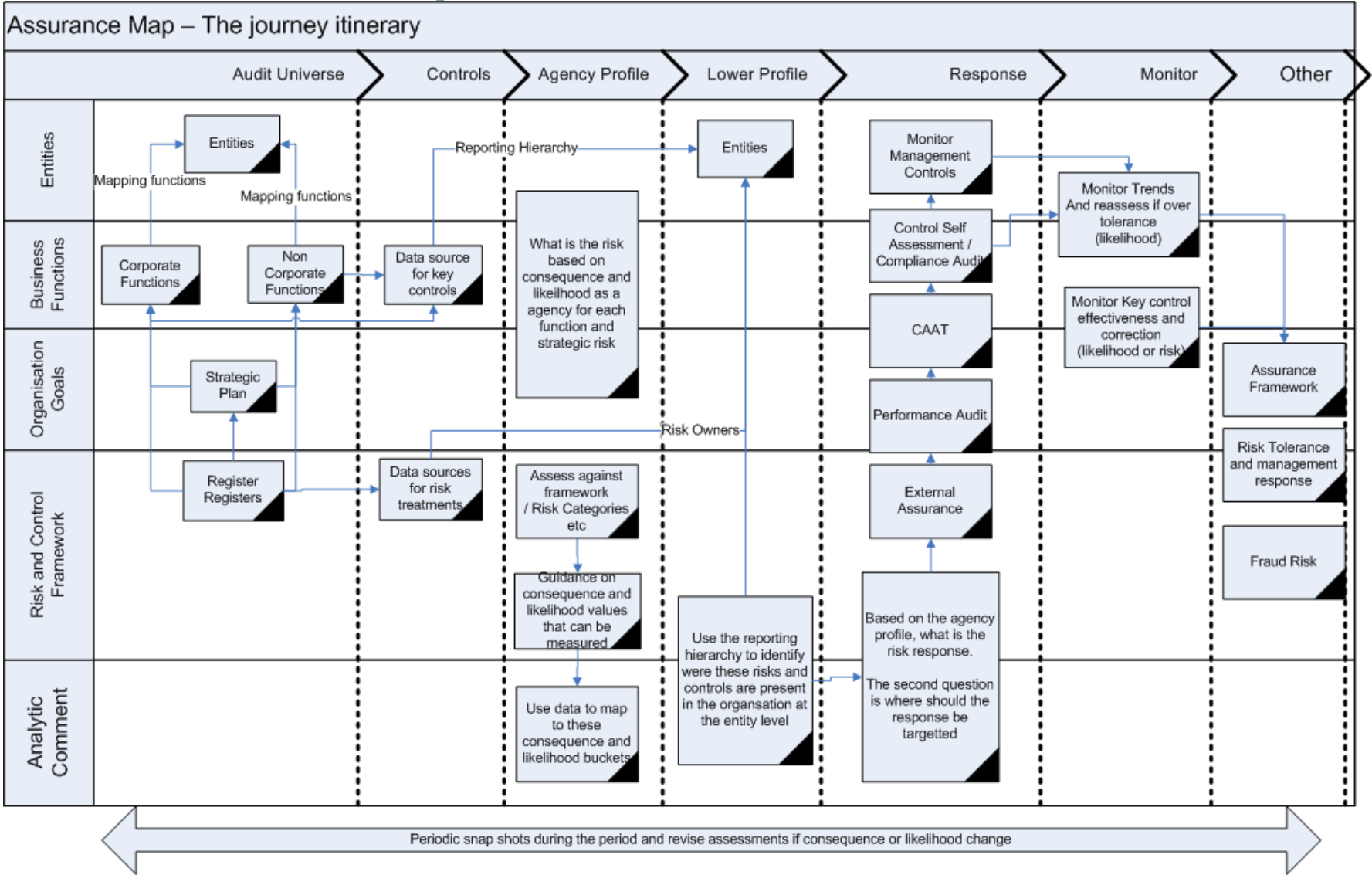
Audit Universe

- Traditional assurance mapping exercise
 - What and where are risks affecting my organisation
 - What are my functions
 - How is my organisation structured

Data Analysis can help you discover where functions and controls are being executed – Agency profiling and lower profiling



Controls

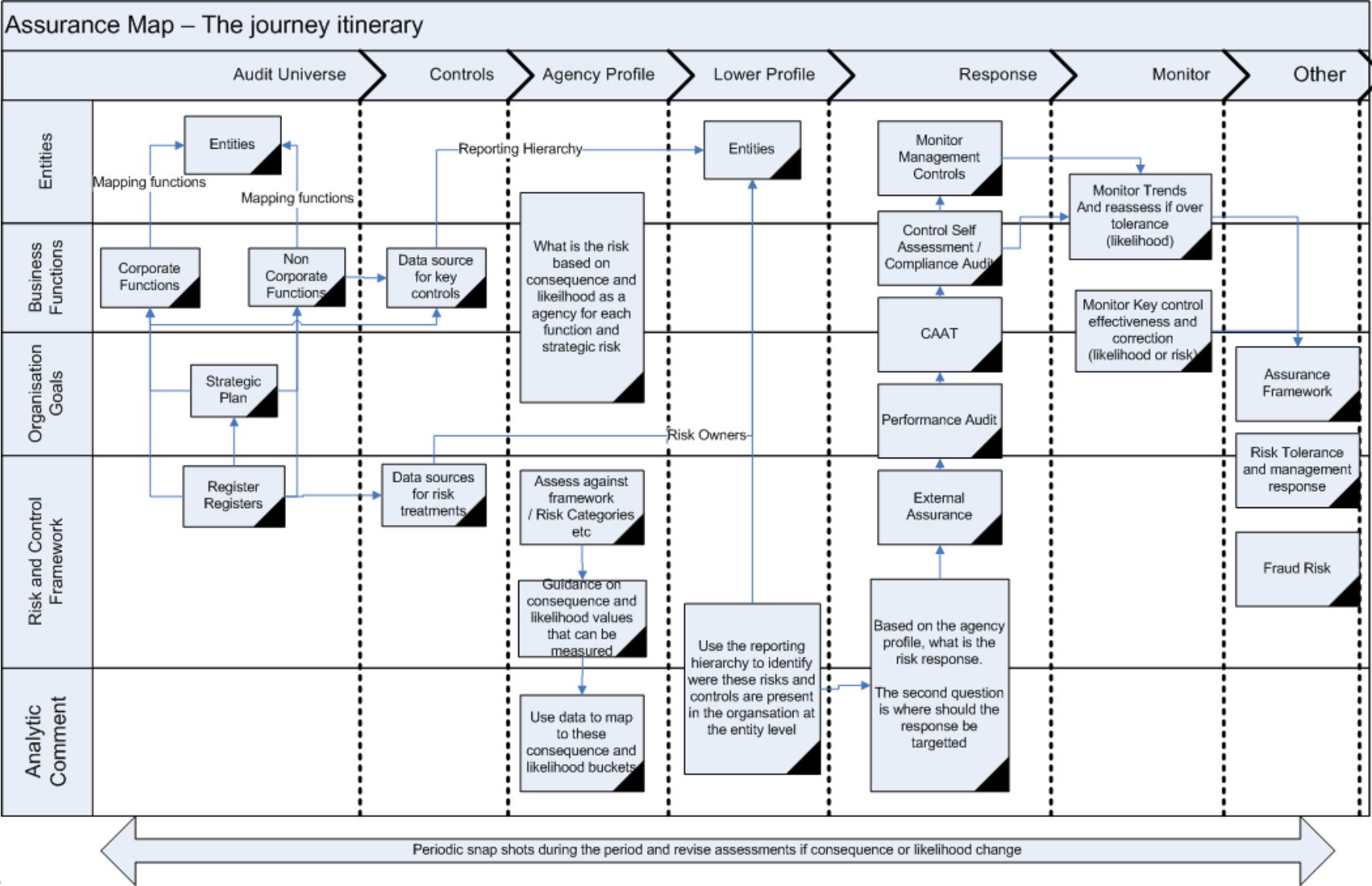


Controls

- What are the key controls that are associated with those functions and risks
- Identify data sources that relate to those functions/risk and controls
- The risk assessment is based on the risk framework

| Assurance Map | | | Inherent Risk | | | 1st Line of Defence | | |
|---|---------------------------|------------------|---------------------------|--------------------------|-----------------------|-----------------------|--|---|
| Function / Objective Associated with Risk | Control / Risk Identifier | Overall Area | Inherent Risk Consequence | Inherent Risk Likelihood | Inherent Risk Outcome | Management Controls | Description of 1st Line of Defence Key Control | 1st Line of Defence Control Effectiveness |
| Purchase Order | 1 | Accounts Payable | Minor | Possible | Medium | SAP controls Policies | Three way match | Satisfactory |

Agency Profile



Agency Profile Example

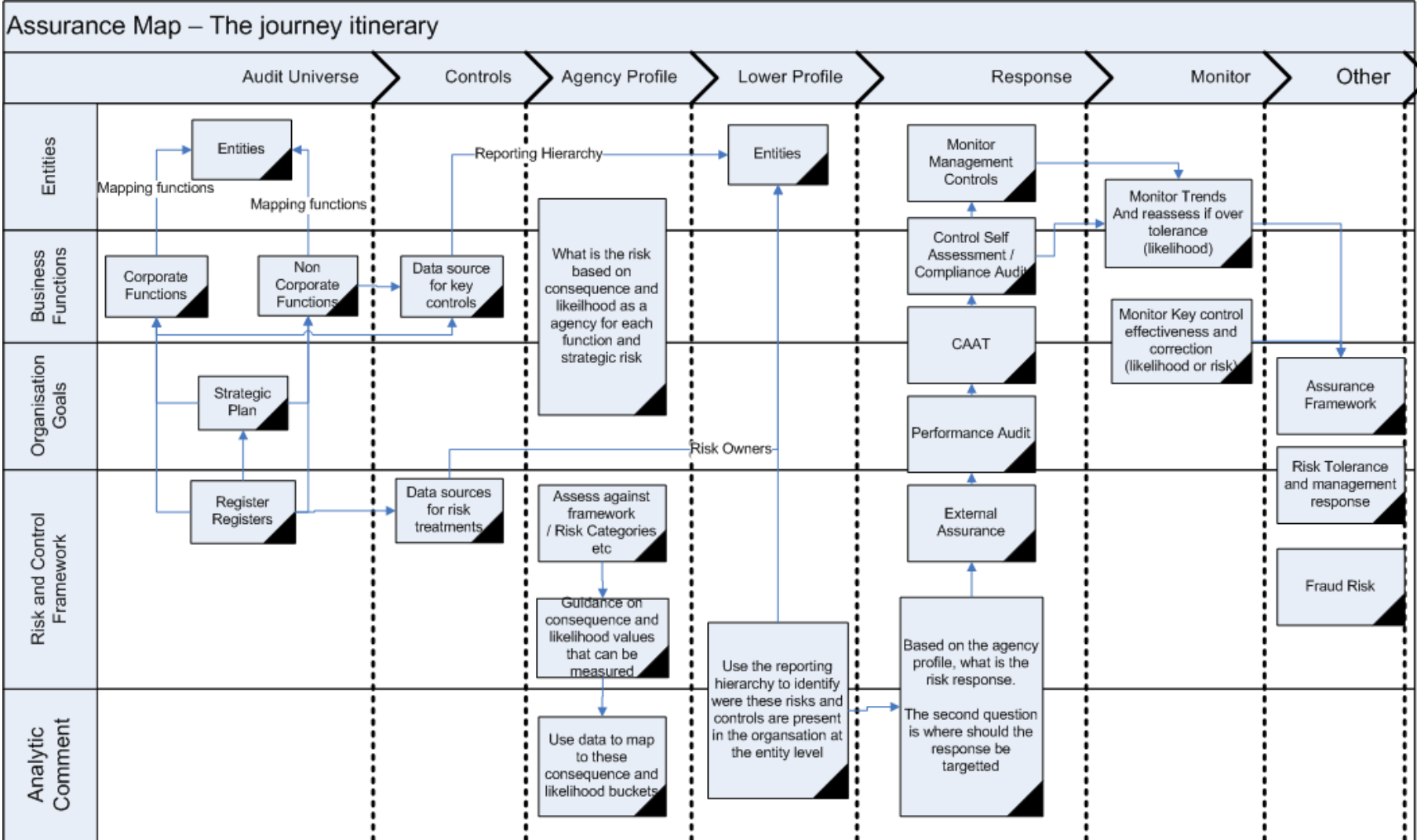
Finances

What financial transactions are material in terms of the risk and control framework?

SAP has document types in the ledger that collate types of SAP transactions
Isn't that part of the both **consequence** and likelihood

| Company Code | Document Type | Amount | Transaction Count | Transaction Description | Amount % | Count % |
|--------------|---------------|------------------|-------------------|-------------------------|----------------|---------------|
| DISQ | BC | 5,016,499,633.24 | 4814 | Bank clearance intf | 15.02317038170 | 0.50964180037 |
| DISQ | GL | 4,764,881,081.82 | 24640 | GL postings | 14.26963531830 | 2.60855296241 |
| DISQ | AB | 4,528,554,883.12 | 12858 | Accounting document | 13.56189705292 | 1.36123271066 |
| DISQ | ZA | 1,462,053,506.00 | 42767 | Accrual journals | 4.37848709930 | 4.52759677530 |
| 6000 | BC | 1,411,345,718.38 | 2714 | Bank clearance intf | 4.22662987040 | 0.28732194562 |
| DISQ | VP | 1,361,622,576.84 | 23104 | Vendor Payment | 4.07772141194 | 2.44594186865 |
| 6000 | AB | 1,205,199,822.08 | 8494 | Accounting document | 3.60927411439 | 0.89923087917 |
| DISQ | GM | 1,070,858,586.90 | 9880 | Grants interface | 3.20695548328 | 1.04596198330 |

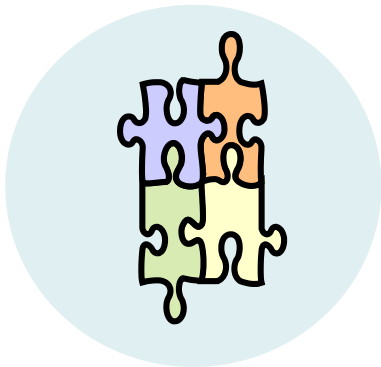
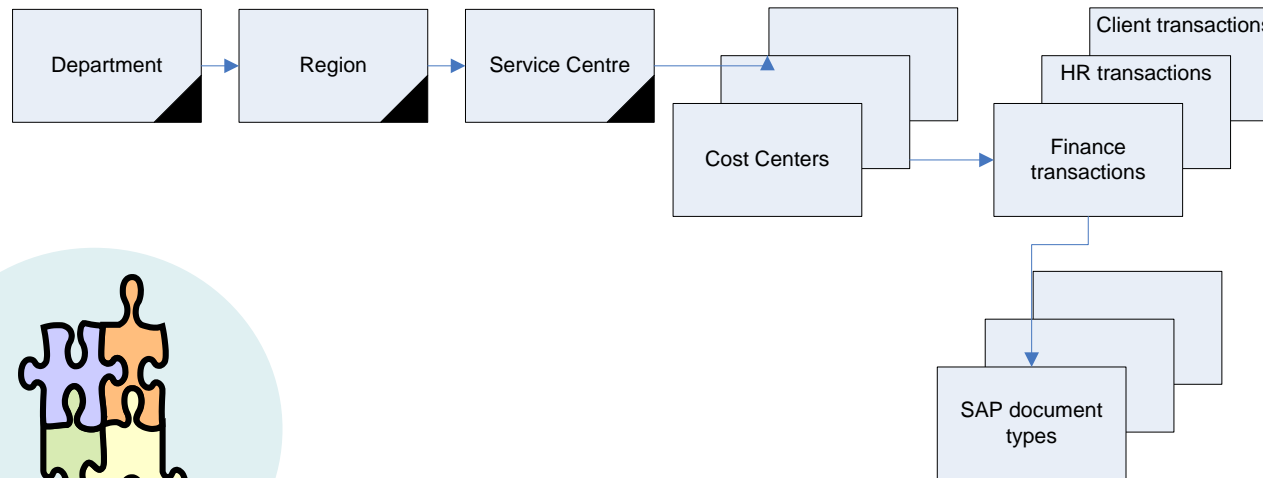
Lower Profile



Periodic snap shots during the period and revise assessments if consequence or likelihood change

Lower Profile

- Where are these transactions occurring in the entity. Can I target my response - yes
- Use the cost centre hierarchy / reporting hierarchy to map to each transaction / event

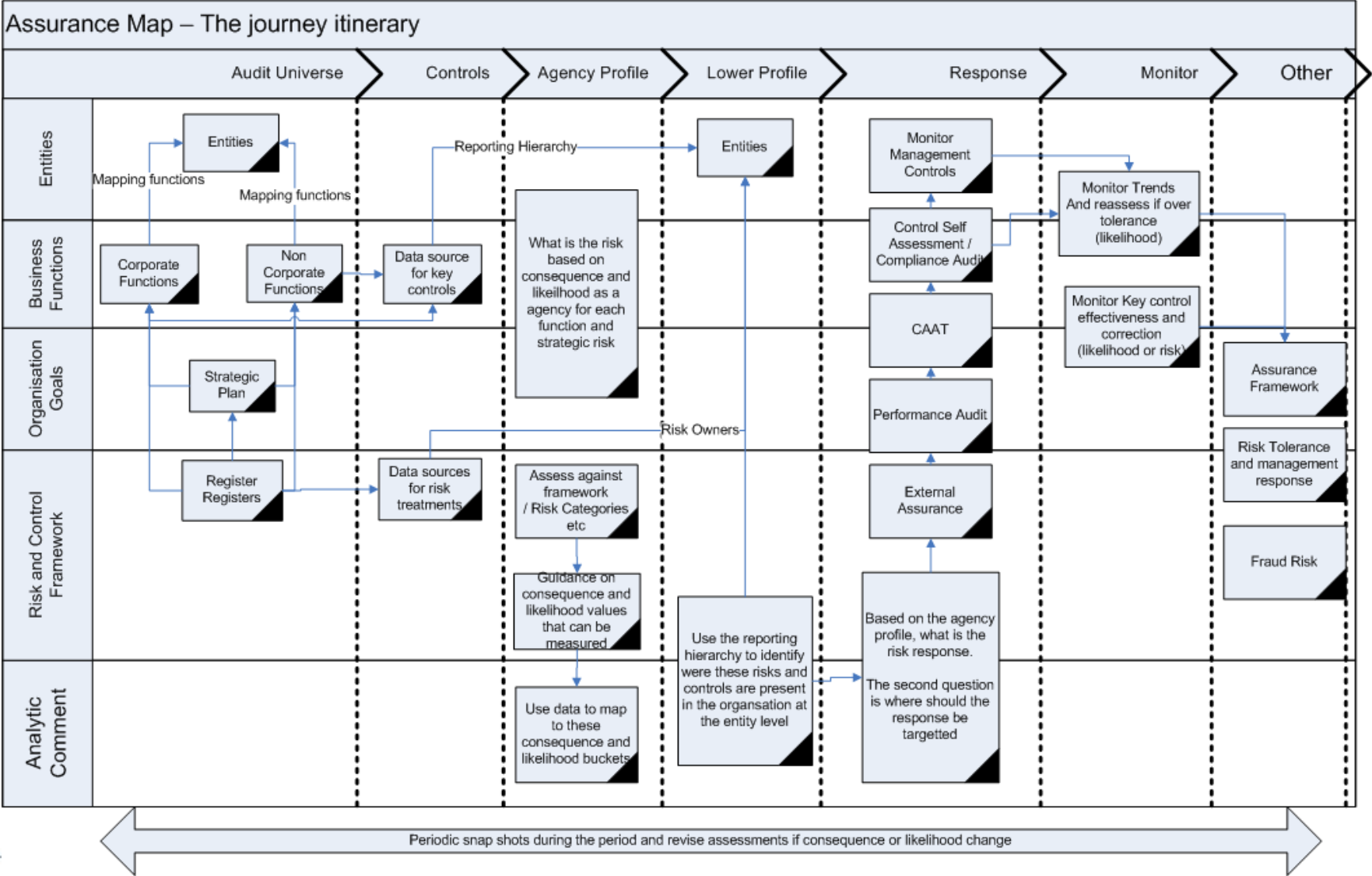


Lower Profile Example

- Summarise by cost centre by document type
- Roll up to the entity level by cost centre group
- Use the document type to identify where the control is being exercised
- Now have consequence and likelihood at the lower level

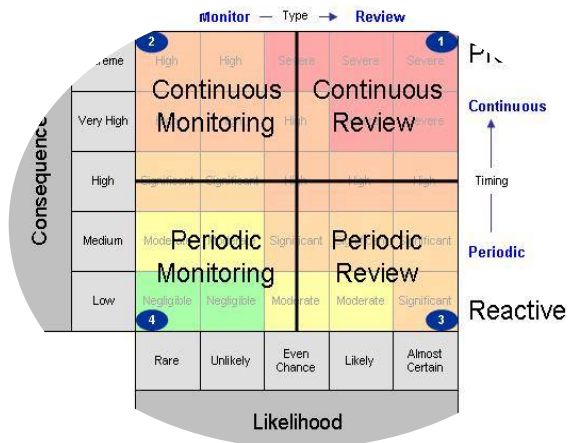
| Direct Involvement | Hierarchy Number | Hierarchy | No | No | No | No | Yes | Yes |
|---------------------------------------|------------------|--|--------------------------------------|-------------------------|-----------------------------------|----------------------|---|----------------------------|
| | | | Number Transactions Accrual Journals | Amount Accrual Journals | Number Transactions Asset posting | Amount Asset posting | Number Transactions Cabcharge interface | Amount Cabcharge interface |
| Entity | Hierarchy Number | Hierarchy | No | No | No | No | Yes | Yes |
| Entity | Hierarchy Number | Hierarchy | No | No | No | No | Yes | Yes |
| Planning & Performance | 1.01 | Department of Communities, Department of Communities Controlled, Regional Service Delivery Operations, Planning, Performance & Review, Planning & Performance | 41.00 | 69,094.95 | - | - | 6.00 | 97.78 |
| Specialist Response Service Implement | 1.01 | Department of Communities, Department of Communities Controlled, Regional Service Delivery Operations, Service Delivery Improvement & Support, Disability Practice Improvement, Specialist Response Serv Program & Refm, Specialist Response Service Implement | - | - | - | - | - | - |
| Funding Administration | 1.01 | Department of Communities, Department of Communities Controlled, Regional Service Delivery Operations, Service Delivery Improvement & Support, Sector Funding & Performance Support, Funding Administration | 90.00 | 327,208.89 | - | - | - | - |
| Business Development Innovation | 1.01 | Department of Communities, Department of Communities Controlled, Regional Service Delivery Operations, Service Delivery Improvement & Support, Sector Funding & Performance Support, Sector Performance and Support, Business Development Innovation | 2.00 | 23.20 | - | - | - | - |

Response



Response

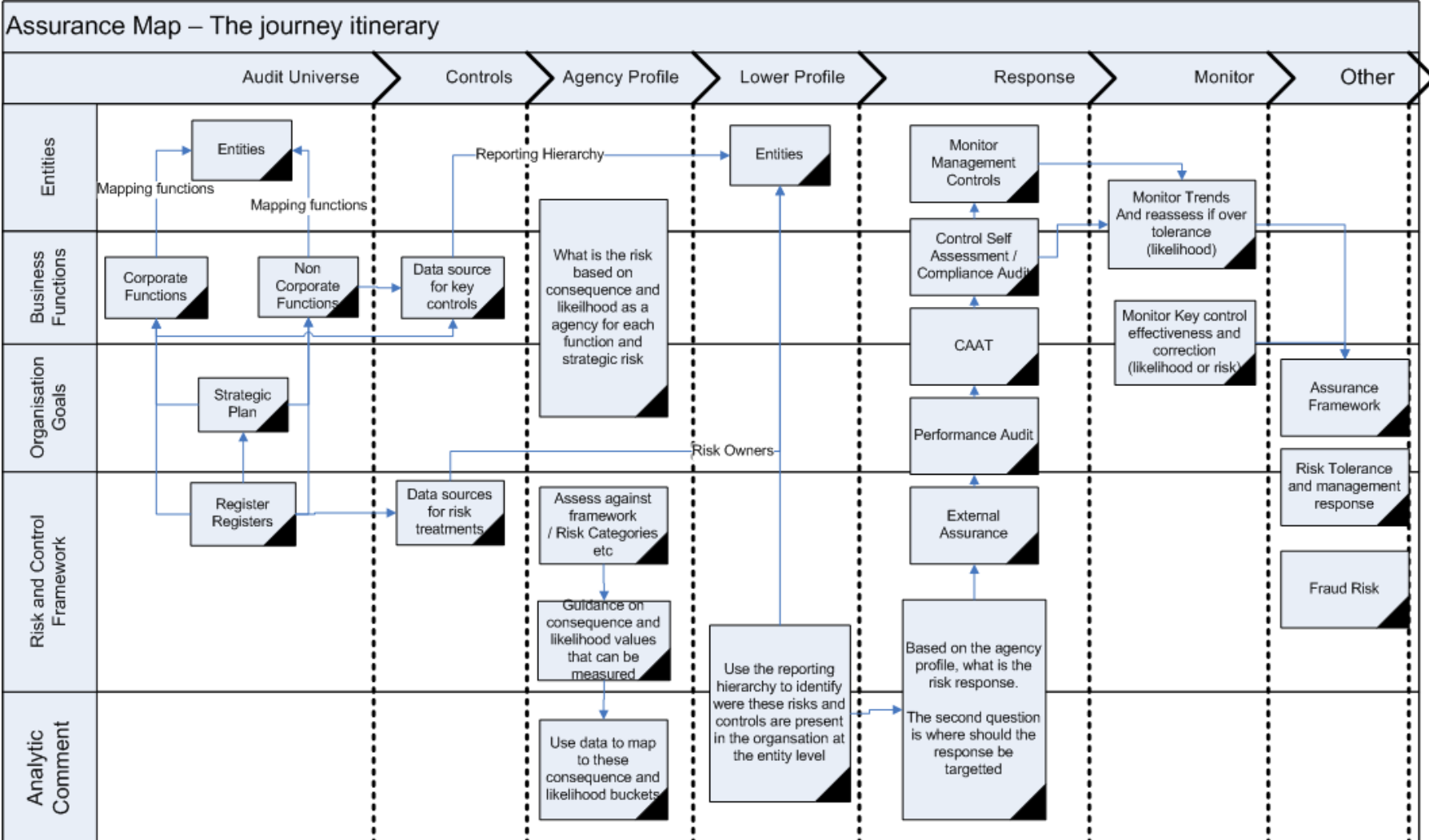
- Based on the agency profile we can measure consequence (\$ for example) and likelihood (how many times it occurs)
- Using the risk and control framework we can model this too for appropriate response



The data analysis strategy is determined by the level of risk and the quadrant of response

As we have this assessment functionally and organisationally we can target which audit response is appropriate and whether data analytics and its frequency should be used




Monitor

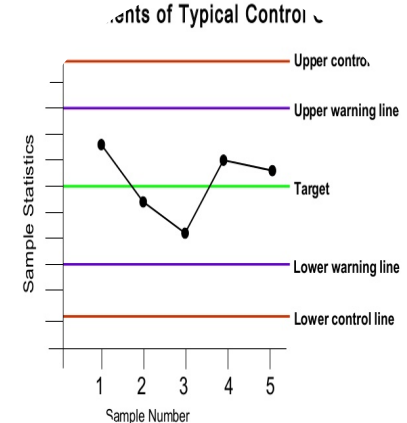


← Periodic snap shots during the period and revise assessments if consequence or likelihood change →

Monitor

- Periodically update your understanding of consequence, likelihood and proximity based on data
- Where appropriate monitor control effectiveness using cautions and exception follow up
- Monitoring can be simple as a control chart

| Number of Occurrences purchase order unit value equalled the quantity purchased | | | | |
|---|------|-----|------|---|
| Office | July | Aug | Sept | Trend |
| Site 1 | 0 | 5 | 50 |  |
| Site 2 | 0 | 1 | 0 |  |
| Site 3 | 5 | 5 | 5 |  |



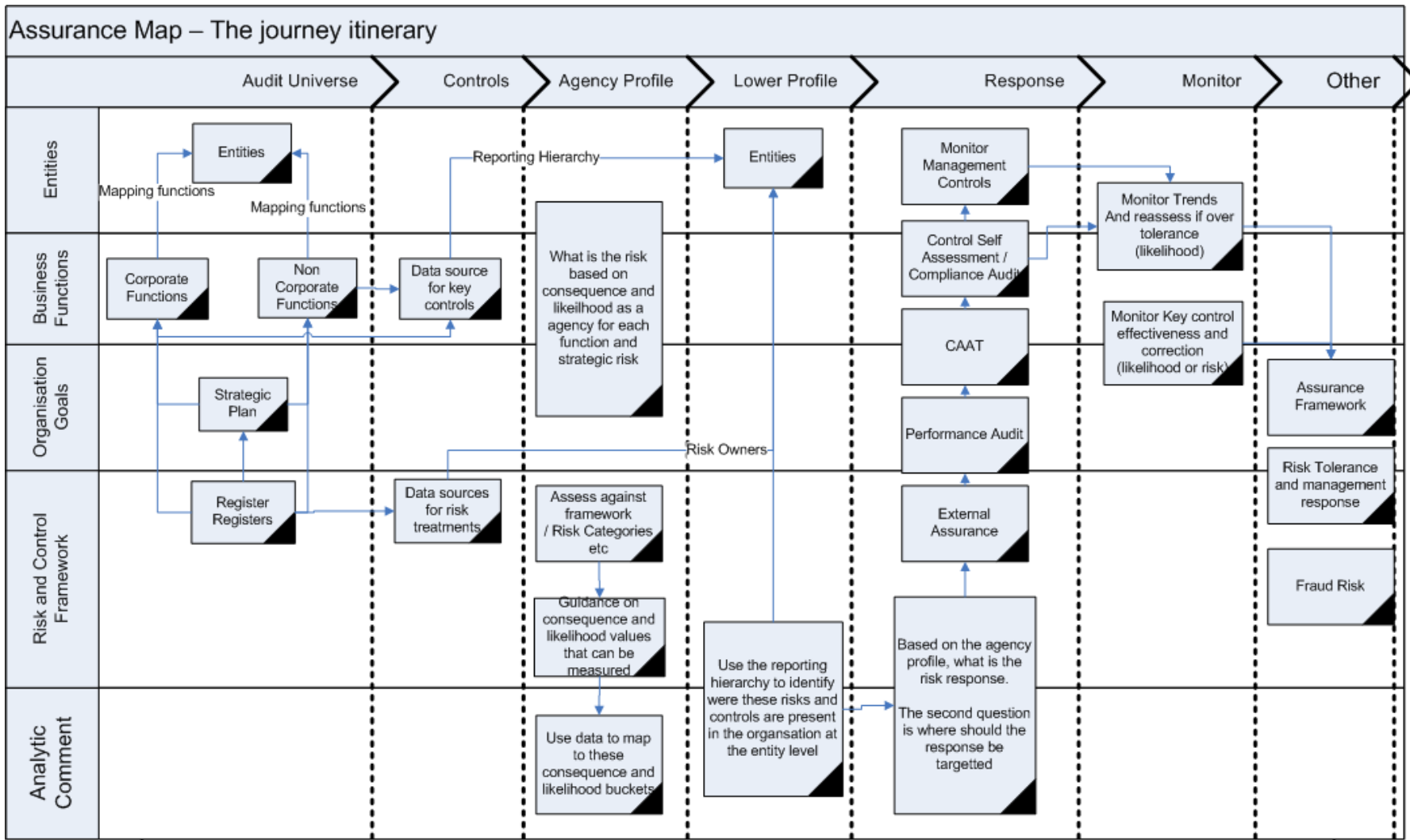
Monitoring – Aligning to Assurance map

Plot the rate of control failure against each functional area (exceptions testing – traditional CAATS)

Drill down to the organisational levels these control failure exist

| Assurance Map | | Inherent Risk | | | 1st Line of Defence | | | Residual Risk | Fraud | Escalation | Trend | | | | |
|---|---------------------------|------------------|---------------------------|--------------------------|-----------------------|-----------------------|--|---|-------------------------------|-----------------|-------------------------------------|------|-----|------|-------|
| Function / Objective Associated with Risk | Control / Risk Identifier | Overall Area | Inherent Risk Consequence | Inherent Risk Likelihood | Inherent Risk Outcome | Management Controls | Description of 1st Line of Defence Key Control | 1st Line of Defence Control Effectiveness | Residual Risk After Treatment | Fraud Indicator | Management Response | July | Aug | Sept | Trend |
| Purchase Order | 1 | Accounts Payable | Minor | Possible | Medium | SAP controls Policies | Three way match | Satisfactory | Low | Yes | Accept the risk, routine management | 5 | 11 | 55 | |

Other Considerations



Periodic snap shots during the period and revise assessments if consequence or likelihood change

Other considerations

Data analytics can contribute to the organisation's governance arrangements

Use the analysis for more than one use

Fraud Plan example

- Profile delegation spread
- Profile key staff not taking leave

| Entity | Non Delegated Officers | Delegation Level Officers | Delegation Spread | Administrative Staff Numbers | Operational Staff Numbers | Professional Staff Numbers | Technical Staff Numbers | Senior Officer |
|--------------------------------------|------------------------|---------------------------|-------------------|------------------------------|---------------------------|----------------------------|-------------------------|----------------|
| Accommodation & Respite | 13 | 2 | 15.385 | 14 | 1 | 0 | 0 | 0 |
| Active Recreation Centres | 65 | 1 | 1.538 | 20 | 46 | 0 | 0 | 0 |
| Adoption Services Qld (Child Safety) | 39 | 1 | 2.564 | 13 | 0 | 27 | 0 | 0 |
| Adults & Older Carers | 5 | 1 | 20.000 | 6 | 0 | 0 | 0 | 0 |
| Aids & Modifications | 4 | 1 | 25.000 | 5 | 0 | 0 | 0 | 0 |

Other considerations

Risk Tolerance

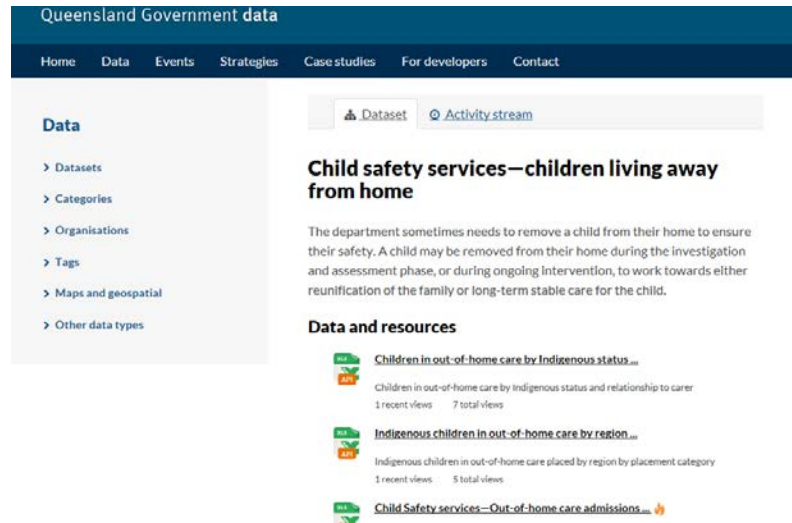
- Inform management of risks that exceed their risk tolerance
- Data analytics can measure consequence, likelihood and control effectiveness (rate of exceptions)
- Inform your assurance map

| Matrix | Consequence | Insignificant | Minor | Moderate | Major | Critical |
|----------------|----------------|---------------|-------|----------|-------|----------|
| Likelihood | Numeric Values | 1 | 2 | 3 | 4 | 5 |
| Almost Certain | 5 | 5.00 | 10.00 | 15.00 | 20.00 | 25.00 |
| Likely | 4 | 4.00 | 8.00 | 12.00 | 16.00 | 20.00 |
| Possible | 3 | 3.00 | 6.00 | 9.00 | 12.00 | 15.00 |
| Unlikely | 2 | 2.00 | 4.00 | 6.00 | 8.00 | 10.00 |
| Rare | 1 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 |

| Risk | Management Response |
|---------|---|
| Low | Accept the risk, routine management |
| Medium | Identify responsible owner and treatment strategy, routine management |
| High | Quarterly Audit Committee and Senior Management Review |
| Extreme | Monthly Executive Management Team |

Result and Future

- Better targeting of risk
- Better use of audit resources
- Ability to refresh the assurance map more timely
- Future – upload into risk model in audit tools
- Focus more on non financial data, especially the data quality of information used to inform client outcomes and decisions
- Integrating open data feeds



The screenshot displays the Queensland Government data portal. The header includes navigation links: Home, Data, Events, Strategies, Case studies, For developers, and Contact. A sidebar on the left lists categories under 'Data': Datasets, Categories, Organisations, Tags, Maps and geospatial, and Other data types. The main content area shows a dataset titled 'Child safety services—children living away from home'. Below the title is a brief description: 'The department sometimes needs to remove a child from their home to ensure their safety. A child may be removed from their home during the investigation and assessment phase, or during ongoing intervention, to work towards either reunification of the family or long-term stable care for the child.' Underneath, there is a section for 'Data and resources' with three entries: 'Children in out-of-home care by Indigenous status ...', 'Indigenous children in out-of-home care by region ...', and 'Child Safety services—Out-of-home care admissions ...'.

Queensland Government data

Home Data Events Strategies Case studies For developers Contact

Data




- > Datasets
- > Categories
- > Organisations
- > Tags
- > Maps and geospatial
- > Other data types

Dataset Activity stream

Child safety services—children living away from home

The department sometimes needs to remove a child from their home to ensure their safety. A child may be removed from their home during the investigation and assessment phase, or during ongoing intervention, to work towards either reunification of the family or long-term stable care for the child.

Data and resources

-  **Children in out-of-home care by Indigenous status ...**
Children in out-of-home care by Indigenous status and relationship to carer
1 recent views 7 total views
-  **Indigenous children in out-of-home care by region ...**
Indigenous children in out-of-home care placed by region by placement category
1 recent views 5 total views
-  **Child Safety services—Out-of-home care admissions ...**

Questions

Sean Hounslow CISA CIA CFE CPA

Head of Internal Audit

Department of Communities, Child Safety, Disability Services

sean.hounslow@communities.qld.gov.au

shounslo@gmail.com

I welcome dialog and discussion
We learn from mistakes and each other