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Using Technology and Data Analytics to Drive Audit Outcomes

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Australian Government Strategic Operating Environment

- Nov 2018
- <u>Digital Government Strategy</u> (updated in 2019 and 2020) Vision: Top three digital governments in the world by 2025.
- Aug. 2020
 Australian Cyber Security Strategy 2020 Vision: creating a more secure online world for Australians, their businesses and the essential services upon which we all depend.
- May 2021
 Digital Economy Strategy (updated in March 2022) Vision: Top 10 digital economy and society by 2030.
- Secure Cloud Strategy (updated in 2021) Focuses on helping government agencies use cloud technology.
- Dec. 2021 <u>Australian Data Strategy</u>—Vision: Become a modern data-driven society by 2030.
- Mar. 2022 Data Availability and Transparency Act 2022 An Act to authorise the sharing of public sector data, and for related purposes

In February 2018...

The Australian National Audit Office (ANAO) sent a survey to representatives of all Members of the *International Organisation of Supreme Audit Institutions (INTOSAI) Working Group on IT Audit (WGITA)* to get an understanding of their data analytic maturity, and direction.

Use of Data Analytics in Financial Statements vs Performance Audit



There is a consistent implementation and use of analytics on audits

There are some defined and documented standard analytics that are used on most audits

The use of data analytics in audits is ad hoc, driven by the knowledge and experience of individual auditors

Policy for Use of Data Analytics



Drivers for Use of Data Analytics



Data source: INTOSAI WGITA Survey, 2018

Please answer the same questions through your Slido app:

- What is your organisation's current practice of using data analytics?
- What is your organisation's policy position on use of data analytics?
- What are your organisation's drivers for using data analytics?

Data Analytics at the ANAO We live and breathe data analytics

ANAO Data Analytics Strategy 2018-20



Operationalising the Strategy

High risk/complexity

Full DA service model

DA undertakes all data-related work and analyst is a critical member of the audit team

Low DA capability within audit team

Capability development model

DA plays an enabler role to support and train auditors in data-related tasks.

Hybrid DA service model

DA is only involved in data-related phases of an audit and generally focuses on either the QA aspects of the audit or tasks that require efficiency

High DA capability within audit team

Consultation model

DA provides ad-hoc assistance as required by the audit teams

Low risk/complexity

Outcomes of the Strategy



- Consideration of using data analytics is mandated in all audit planning phase
- Application of data analytics is embedded in the audit manual and workflow
- Approved standardised solutions for financial statements audits

- Centralised data analytics (DA) team that supports all audit services groups, in particular for complex or high risk DA work
- DA capability development for all auditors

- Auditor-centric design
- Standardised solutions
- Bespoke solutions

Data Analytics and eDiscovery for Performance Audits

EVOLUTION & APPROACH

Evolving approach in Performance Audit

Evidence collection methodologies



Data analytics and eDiscovery

Evolving approach in Performance Audit

audit evidence

	2012	2017	2022
	Fewer evidence sources available – some still paper- based.	 Increased evidence sources – limited paper records 	 Prolific evidence across many sources (some unknown)
		 Average audit duration of 	 Average audit duration of
1	Average audit duration of 12.3 months	11.6 months	10.2 months
		 Decline in record-keeping 	 Audit risk from poor record-
1	Reliance upon audited entity's record-keeping practices	practices = 个 audit risk	keeping mitigated by use of DA and eDiscovery in audit
		 Increasing availability and use 	methodologies
	Emails emerging as a source of	of 'big data', digital storage	

and IT processing power

Strategic approach to be

developed

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• Strategic approach for data analytics across all audit products

eDiscovery for performance auditing



Case Study for Performance Audits

- Three funding rounds for a total of \$100 million awarded by the Minister for Sport between December 2018 and April 2019.
- The objective of the audit was to assess whether the award of funding under the program was informed by an appropriate assessment process and sound advice.
 - Was the program well designed?
 - Were applications assessed in accordance with the program guidelines?
 - Were the funding decisions informed by clear advice and consistent with the program guidelines?

	Australian Sport Commission	Department of Health	Department of Infrastructure, Transport, Regional Development and Cities	Department of Finance
Document requests	Meetings	Meetings		 Representation letter and written responses to the audit team's questions
System access	 User account logins Grants Management System (SmartyGrants) Network shared drive EDRMS (TRIM) 	 Parliamentary Document Management System (PDMS) 	No user-level access	No user-level access
Bulk evidence	 Email accounts for over 20 key staff/group inboxes EDRMS folder contents Grants Management System (SmartyGrants) 	 Email accounts for 13 individuals or group inboxes Three email accounts for key ministerial staff 	One email account for a ministerial staff member	No bulk evidence





- The decision-making process was iterative
- The Commission's funding advice briefings in PDMS did not accurately reflect this
- Substantial analysis was required to piece together the basis for funding decisions



Award of Funding under the Building Better Regions Fund

PUBLISHED Thursday 28 July 2022

- Five funding rounds for a total of \$1.38 billion awarded by a Ministerial Panel between 2016 and 2021.
- The objective of the audit was to assess whether the award of funding under the BBRF was effective as well as being consistent with the CGRGs.
 - Was the program well designed?
 - Were appropriate funding recommendations provided?
 - Were funding decisions informed by the advice provided and appropriately documented?
 - Was the distribution of funding consistent with program objectives and grant opportunity guidelines?

Appendix 6 Timeline of the decision-making processes for each funding round



Note a: After at least two cancellations, the ministerial panel did not meet in round three to decide which grants to approve. Source: ANAO analysis of departmental records.



Chronology and date of ministerial panel shortlist versions / date of departmental funding recommendations

Not approved - was recommended for funding by Infrastructure Approved - application recommended for funding by Infrastructure Not approved - on the ministerial panel shortlist on this date Approved - not yet on the ministerial panel shortlist

Approved - not recommended by Infrastructure but was approved Approved - on the ministerial panel shortlist on this date

The first shortlist for 14 February 2019 represented the cohort of IP applications the ministerial panel was to consider that Note: evening. The meeting was cancelled due to some members being unavailable and was not rescheduled for a later date.

Source: ANAO analysis of departmental records.

Procurement Processes and Management of Probity by the Moorebank Intermodal Company

PUBLISHED Thursday 11 October 2018

- The objective of the audit was to assess MIC's achievement of value for money and management of probity in its operations and procurement activities.
 - In its procurement of consultants and advisers, has MIC employed open and effective competition, demonstrably achieved value for money and managed any conflicts of interest?
 - Has MIC effectively managed and controlled the use of credit cards and reimbursement of staff expenses for official purposes?
 - Are the risks associated with accepting and providing hospitality, gifts or benefits effectively managed?

Figure 2.2: Timing of MIC's procurement policy development as compared to the engagement of advisers and consultants



Total value (\$ million) — Number of engagements

Note a: MIC's financial data suggests that at least seven of these 19 advisers were either still ongoing or had been re-engaged by MIC prior to February 2018 (when this financial data was captured by the ANAO).

Note b: Similarly, at least seven of these 21 advisers were either still ongoing or had been re-engaged by MIC prior to February 2018.

Note c: At least 10 of these 15 contracts were still ongoing in February 2018. Therefore the total value of these contracts are likely to increase over time.





Note a: The MIC records underpinning the ANAO's identification of additional offers were collected in early February 2018. The 2018 column represents the offers recorded by MIC in its register up until April 2018.

Source: ANAO analysis of MIC records.

Period	Number rejected	Number accepted	Total offers	Estimated total value
2013	1	9	10	\$1,540
2014	0	21	21	\$3,150
2015	0	35	35	\$7,088
2016	0	33	33	\$4,160
2017	1	29	30	\$4,100
2018	6	3	9	\$890
Total	8	130	138	\$20,928

Table 4.1: Offers of gifts, benefits or hospitality to MIC staff by year

Source: ANAO analysis of MIC records.

IBLISHED Monday 30 March 2020

- The audit objective was to examine the efficiency of the CDPP's case management. The audit is focused on the pre-brief and brief assessment phases of the CDPP's work and the extent to which the CDPP used its resources efficiently in evaluating referred matters.
 - Does the CDPP have arrangements to support the efficient assessment of referred briefs?
 - Does existing performance data indicate that the CDPP assesses briefs efficiently?
 - Is the CDPP effectively monitoring and reporting on its case management performance?

PUBLISHED Monday 30 March 2020

Year	Referrals processed	Matters before the court	Convictions
2014–15	3,600	4,909	2,156
2015–16	3,252	5,011	2,403
2016–17	3,147	5,015	2,249
2017–18	2,700	4,667	2,187
2018–19	2,579	3,961	1,691
5-year change	- 28%	- 19%	- 22%

* From annual reports

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Year	Appropriations and revenue	Average staffing level	Federal prosecutors	Legal costs	Expenditure
	(\$million)			(\$million)	(\$million)
2014–15	84	396	258	15	87
2015–16	87	365	250	12	85
2016–17	86	411	293	12	86
2017–18	85	379	260	13	88
2018–19	86	371	276	17	93
Change	+ 2%	- 6%	+ 7%	+ 13%	+ 7%
CPI-adjusted					0%







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How we used the data:

- For descriptive purposes
- As a means of validation of CDPP's public reporting
- For explanatory purposes
- To identify inefficient processes
- To test some hypotheses
- As a sampling tool

Year	Referrals processed*	Brief assessment referrals processed*	Brief assessments completed*
2014–15	3,626	2,200	2,182
2015–16	3,278	1,989	2,051
2016–17	3,162	1,671	2,201
2017–18	2,715	1,269	1,295
2018–19	2,565	1,324	1,263
5-year change	- 29%	- 40%	- 42%

* From case management systems data









Data Analytics for Financial Statements Audits

IMPLEMENTATION & BENEFITS

Approach in Financial Statements Audit

Investment principles

• Assurance first

- Target high risk financial statement line items/programs:
 - address risk of material misstatement/assurance
 - where possible build multi use
 - efficiencies
- Develop and mandate platforms analysing common processes:
 - structured data and processes
 - scalability enabling functions such as payroll
 - develop once, solve for many

Maximise impact

- Focus of business plan performance indicators linked to uptake of standardised solutions and number of engagements using any data analytical tools
- Implementation

Approach in Financial Statements Audit

- methodical
- structured data and processes
- wide application across audits enabling processes such as HR, funding
- develop once, solve for many
- Celebrate innovation
 - regularly share outcomes of bespoke platforms

Approach in Financial Statements Audit

Standardised solutions

- auditor centric multi use
- simple design
- common result set or process enabling functions, legislation
- consistent instructions and methodology
- lower cost data acquisition
- Bespoke solutions
 - targeting higher risk
 - focus on efficiencies or complexity
 - more complex development/modelling

Platforms

Implementation in Financial Statements Audit

Embedding

Capability

Structure- genuine partnership model in delivery between financial and data specialists

- Multi level working groups
- Strategy for digital audit
- Share success/lessons

- Investment in core data analytics and system assurance specialists – upskill in financial acumen
- Data literacy in financial auditors through mandatory, graduated training on platforms- upskill data acumen

- Quality at outset
- Documented methodology and quality assurance process

Quality

 Involvement of quality specialists at outset for standardised solutions – certifying model

Pilots

Number of Data Analytics Solutions Applied for Financial Statements Audit



Number of Teams Using Standardised Solutions for Financial Statements Audit



Case Studies – Financial Statements Audit

Learnings

Continuous improvement

Data acquisition

Reasonable assurance

- 2021-22: 75-80% of audits in which standardised tools applied had an efficiency gain
- Reflection on tools to improve efficiency, or enhance uptake
- Replication and expanded tool set – other enabling functions

- Building capacity for analysis of unstructured data
- Building capacity and best case for obtaining structured data – standardise / platform
- Working with entity finance teams and key contacts to enhance data acumen

- Designing procedures with sufficient precision that they provide reasonable assurance
- Identified outliers and methodology
- Bespoke solutions level of precision
- Audit standards and methodology focus

Case study – On Route Charges

- Complex process involving data capture on navigation and distance travelled from satellites, number of business systems and individual contracts
- Area of significant audit involvement and high risk of misstatement, covered with number of substantive and IT based procedures in past
- Bespoke solution tailored to risk of misstatement
- Build recalculation engine which ingests data, uses audited contract/pricing to determine expected revenue with a high level of precision
- Dashboard to analyse trends
- Efficiency, insights into billing practices, pricing, control over revenue

Case study – On Route Charges

Figure 3.1: Number of flight records from Airservices Australia's flight billing system from 1 July 2019 to 30 June 2020



Case study – Medical Benefits Payments

- Complex process involving very large pricing lists set in legislation, updated regularly, number of categories data formats and extremely large quantity of items
- Area of significant audit involvement and high risk of misstatement, particularly around accuracy of pricing, manual upload processes and scale
- Bespoke solution tailored to risk of misstatement
- Build tool which ingests legislative prices from structured formats and compares them to pricing lists within business systems
- Efficiency, assurance over pricing and payment accuracy

Case study – Industry Levies

- Complex process involving rates in legislation updated regularly, number of types of levies and industry participants, manual and digital returns, few but detailed calculation types
- Area of significant audit involvement and high risk of misstatement, particularly around accuracy of revenue calculation and collection
- Bespoke solution tailored to risk of misstatement
- Build model which ingests legislated rates, declarations from participants and overlays calculation methodology – compare in total or by transaction
- Data visualisation by sector, prior period
- Efficiency, control over revenue assessment and collection

Case study – Employee Benefits Expenses

- Routine payroll process which involve standard condition structure across the Australian Public Service, limited complexity or variation in condition structure, few payroll systems in use
- Area of normal audit involvement and lower risk of misstatement across most audits, primarily performing manual analytical, control or IT procedures
- Standardised solution common data set and business rules
- Build model which uses structured data, conditions and expectations from enterprise agreements to predict expenses
- Efficiency, consistency of approach
- Scale potential application to circa \$40 billion of entitlements per annum

Case study – Compliance Audit

PERFORMANCE AUDIT REPORT AUDITOR-GENERAL REPORT NO.46 OF 2021-22

Management of Staff Leave in the Australian Public Service



Case study – Compliance Audit

- Management of leave (\$3.0 billion per annum) conditions with entitlements in relevant enterprise agreements or legislation
- Assessed 10 entities of various size and complexity of workforce
- Highlighted improvements required in management of leave, conditions
- Standardised solution common data set and business rules
- Build model which uses structured data, conditions and expectations from enterprise agreements to conclude on compliance with conditions, rules and requirements
- Sector wide insights

Case study – Information Reports

Australian Government Procurement Contract Reporting Update

PUBLISHED Wednesday 11 March 2020

Australian Government Grants Reporting

PUBLISHED Tuesday 19 October 2021

() INFORMATION REPORT AUDITOR-GENERAL REPORT NO.37 OF 2021–22

Reporting on Governing Boards of Commonwealth Entities and Companies

PUBLISHED Monday 20 June 2022

() INFORMATION REPORT AUDITOR-GENERAL REPORT NO.11 OF 2022–23

Australian Government Procurement Contract Reporting – 2022 Update

PUBLISHED Thursday 2 February 2023

Our Future Directions

Strategic Alignment

- Digital Audit Strategy for Financial Statements Audit
- Business-led Organisational Digital Strategy Making greater use of cloud-based technologies
- Strategic engagement with entities to obtain quality data in standardised formats through a repeatable process
- Talent development and staff retention

Thank you!