



Australian Government
Department of Veterans' Affairs

VETERAN CENTRIC REFORM

EIM Assessment & Business Initiatives
to enhance DVA's EIM capabilities

January 2018

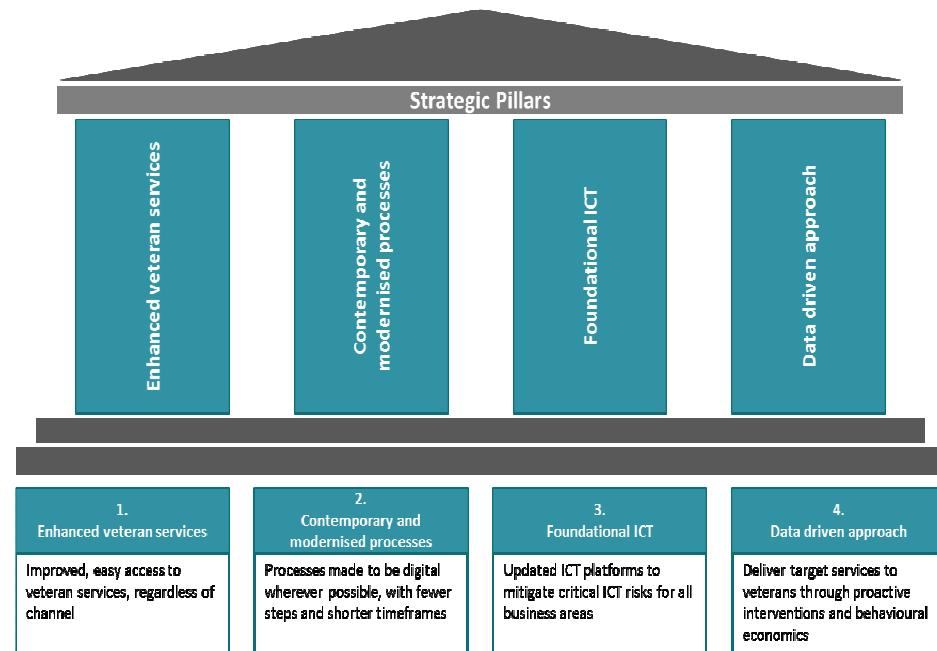
know / connect / support / respect

Agenda

- Industry Trends
- Approach to laying the foundations for EIM
- EIM Maturity Assessment Workshop
- EIM Deep Dive Interviews
- High Level Observations
- Business Initiatives
- Prioritisation

Veteran Centric Reform Program

- VCR Program is a large-scale change agenda to modernise and improve services to veterans and their families.
- A Data Driven Approach is one of the 4 VCR strategic pillars.
- VCR includes the Data and Analytics (D&A) stream as an enabling stream.
- D&A stream will focus on enabling other VCR streams, whilst laying the foundation for Enterprise Information Management (EIM).



Industry Trends

Information and Data – Workable Approach



The program expenditure report ("information") is based on data from our data warehouse ("data")..... [*DAMA 2.0*]

"Information is data in context"

Information comes in many forms...



Application Databases



Spreadsheets



Documents



Images



Business Reports



Data Warehouse



CSV



Email



Video



Data Quality & Preparation



Data Marts



Text



Web Content



Audio



Data Visualisations



Data Cube



XML, JSON



Social Media



Geospatial



Analytical Models

Information as an Asset – Driving Principle



Similar...

- Identify
- Owner
- Location
- Condition/Quality
- Access
- Value
- Register
- Lifecycle



But different

- Unique
- Used by many at the same time
- Not depleted when used
- Does not wear out
- Value by usage
- Easily copied
- Be stolen but not gone
- If lost, can't replace new for old

Enterprise Information Management

- is a **business-led program** to structure all data and analytics initiatives to drive better business outcomes
- is a **long-term commitment** to the exploitation of information for improved business outcomes
- is **not a technology** or stack of technologies that you can acquire
- is owned and **championed by the chief data officer (CDO)**, or whichever role owns the strategic business value of data (and not technology)

Strategic Roadmap for Enterprise Information Management. Gartner Research Paper G00325792. March 2017.

PwC's Global Data and Analytics Survey 2016

How much are Australian organisations data driven?

Insights on the Australian market from PwC's Global Data and Analytics Survey 2016: Big Decisions | August 2016

Big DecisionsTM
Let the data do
the talking



61%

of Australian organisations admitted that their decision-making process is only 'somewhat' guided by data

39% vs 5%

of Australian organisations use analytics tools to 'look back' and discover what went wrong

who use data and analytics to understand what actions should be taken in the future

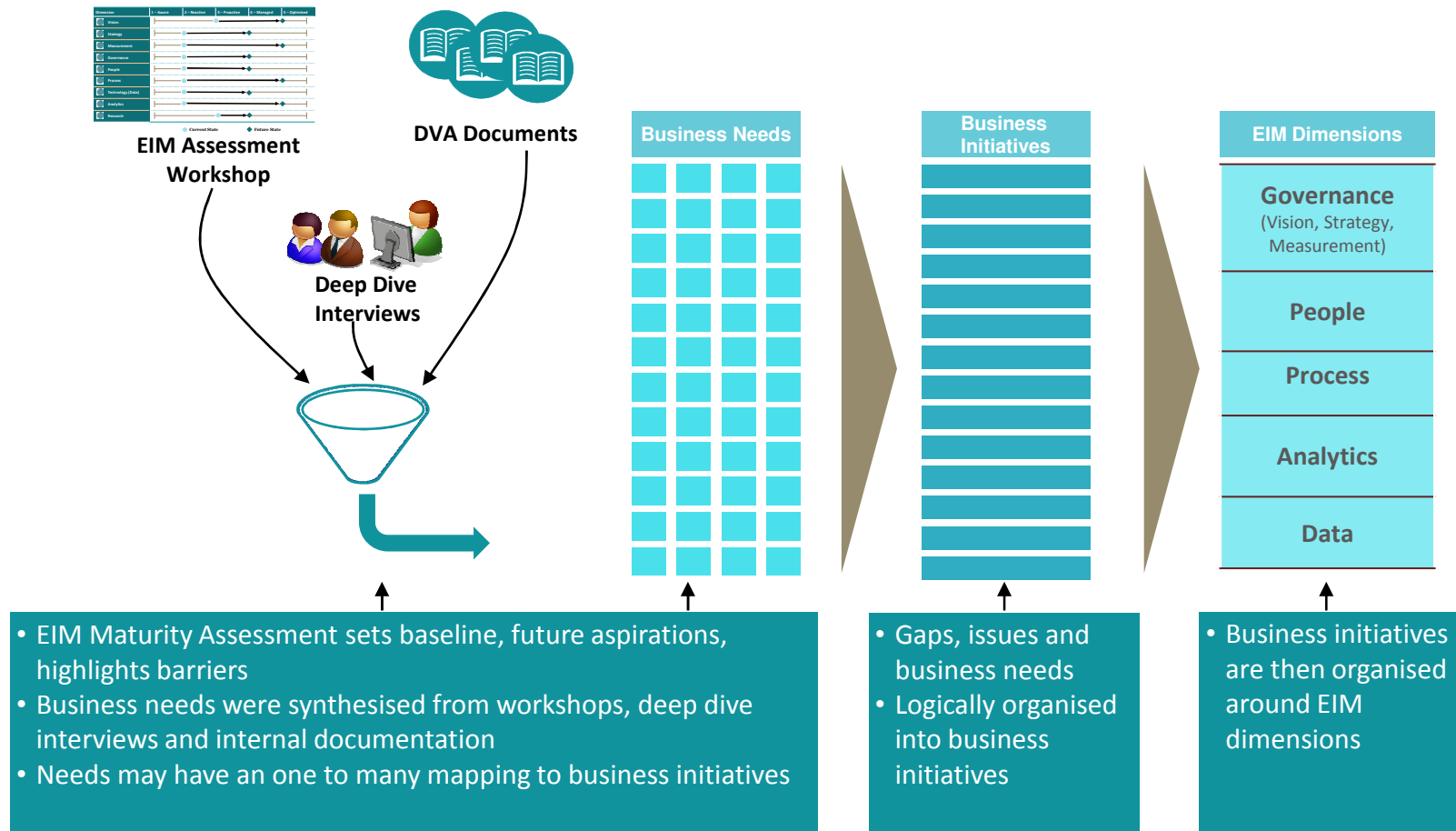


www.pwc.com.au

Approach to laying the foundations for EIM

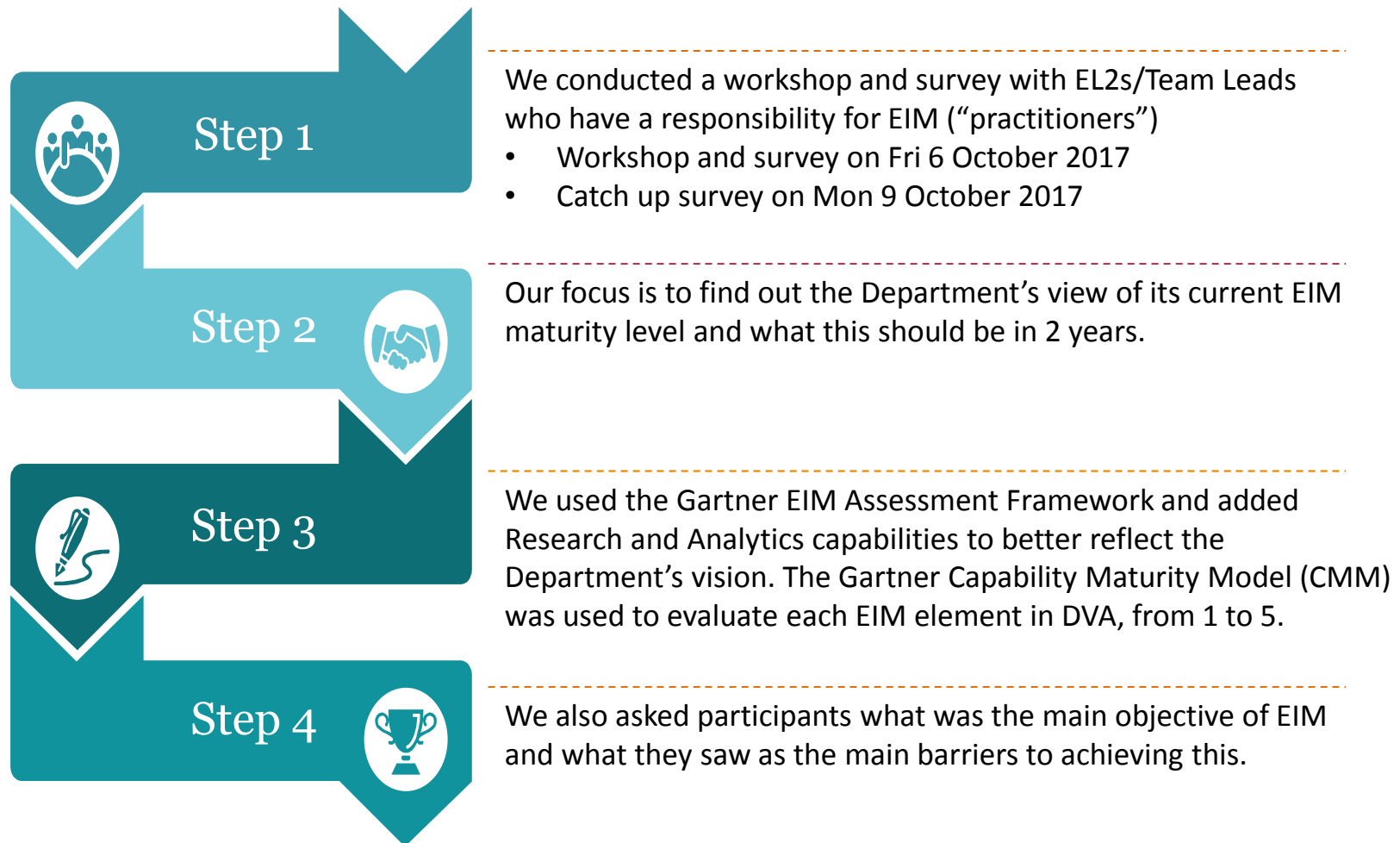
Laying the foundations for EIM

Assessment to baseline and Business Initiatives to enhance EIM



EIM Maturity Assessment Workshop

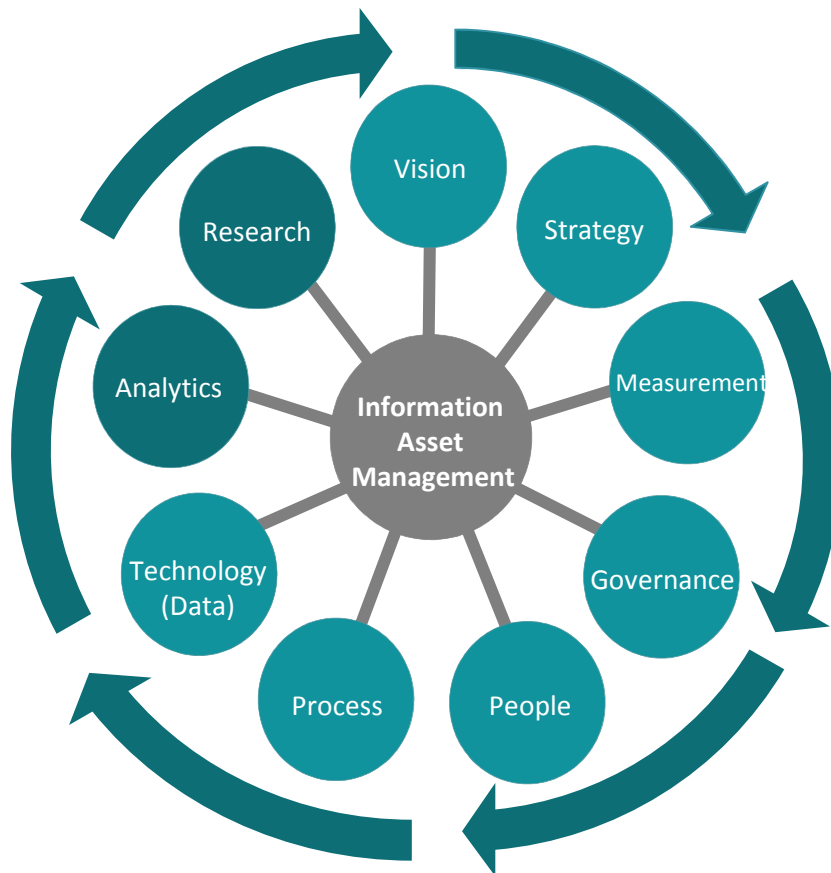
EIM Maturity Assessment Workshop



EIM Maturity Assessment Workshop

Using Gartner's framework

EIM Maturity Assessment Dimension



EIM Maturity Assessment Scoring



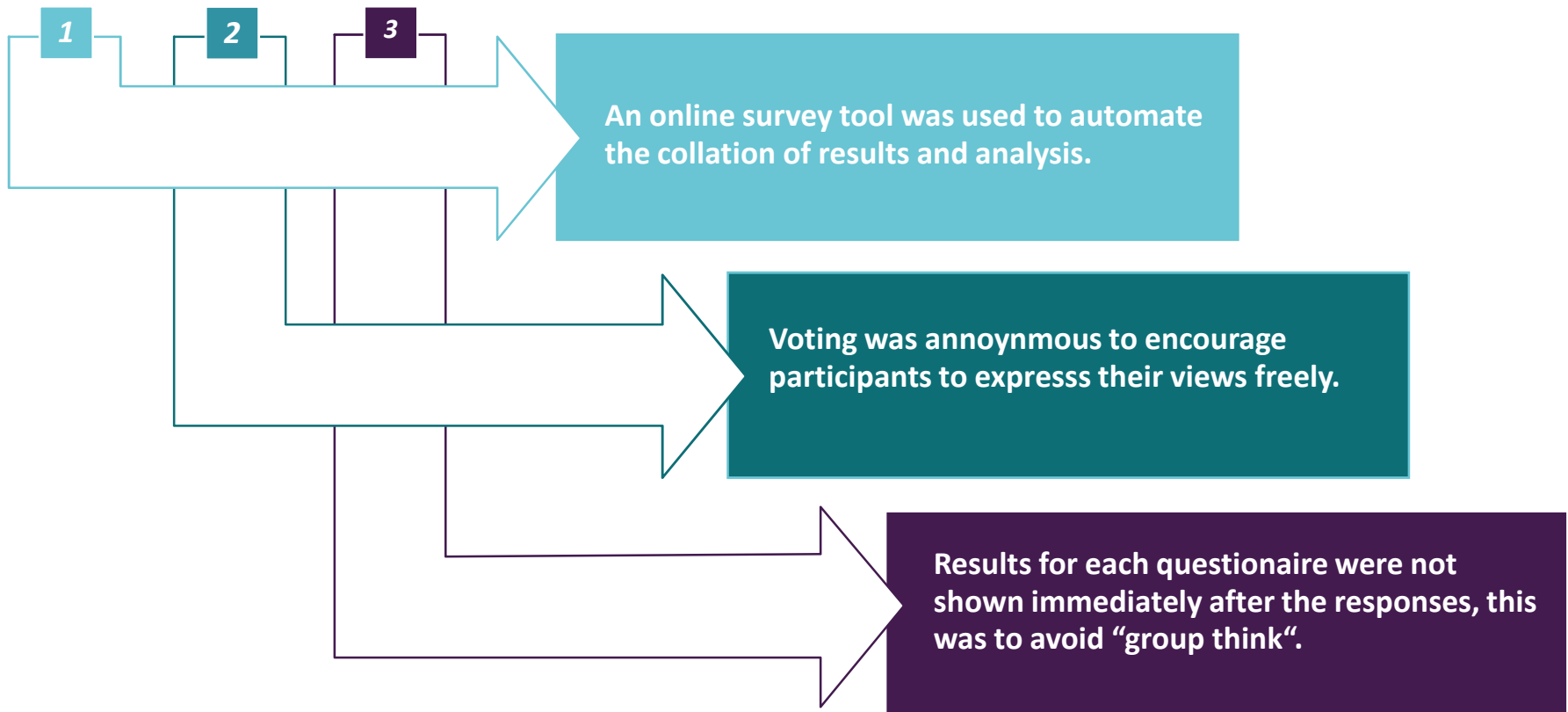
Gartner's 2017 Strategic Roadmap for Enterprise Information Management

<https://www.gartner.com/doc/3645361/-strategic-roadmap-enterprise-information>

EIM Maturity Assessment Workshop

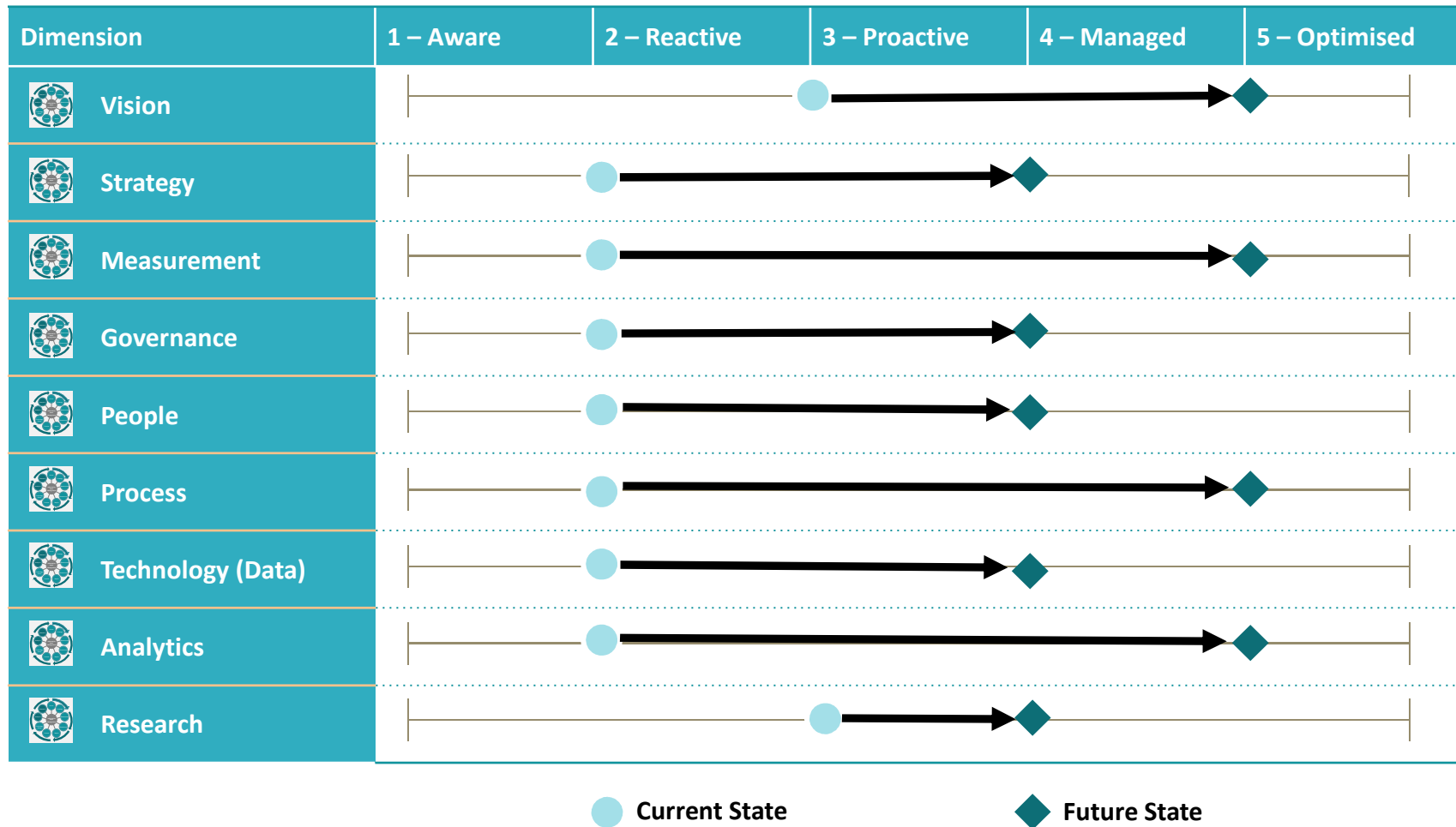
Surveying participants

Workshop details



EIM Maturity Assessment Workshop

Overview of Scores



EIM Maturity Assessment Workshop

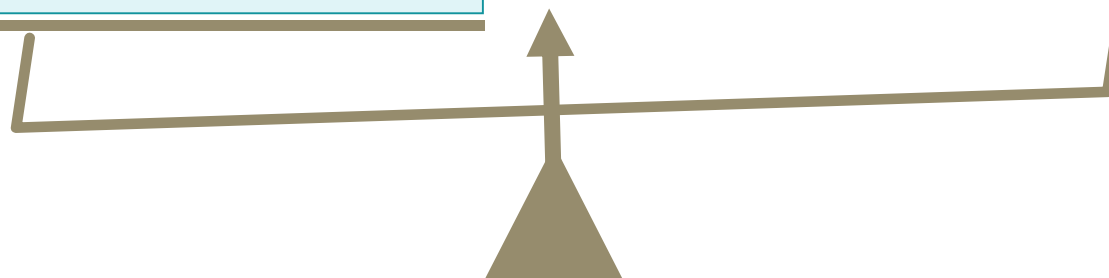
Overview of Participants Views

Current State - Barriers

- Too many legacy and disjoint systems.
- Lack of recognition of what is available.
- Data gaps prevent analysis.
- Lack of capabilities to measure service delivery through to policy.
- Lack of EIM leadership, coordination and culture.
- Information life cycle and flows not documented well.
- Lack of recognition of the priority need for specialist skills and roles.
- Shared services reduces choice and lengthens approvals to implement capabilities.

Future State – Objectives

- Transformation of DVA into a proactive, veteran-centric organisation.
- Better understanding our clients.
- Informed policy development.
- Business visibility of all functions, with standardised measures used and one source.
- Accurate performance data.
- Information as an asset.
- Staff and managers understand and utilise business information productively.
- Processes well established and circulated.
- EIM championed by executives.



EIM Deep Dive Interviews

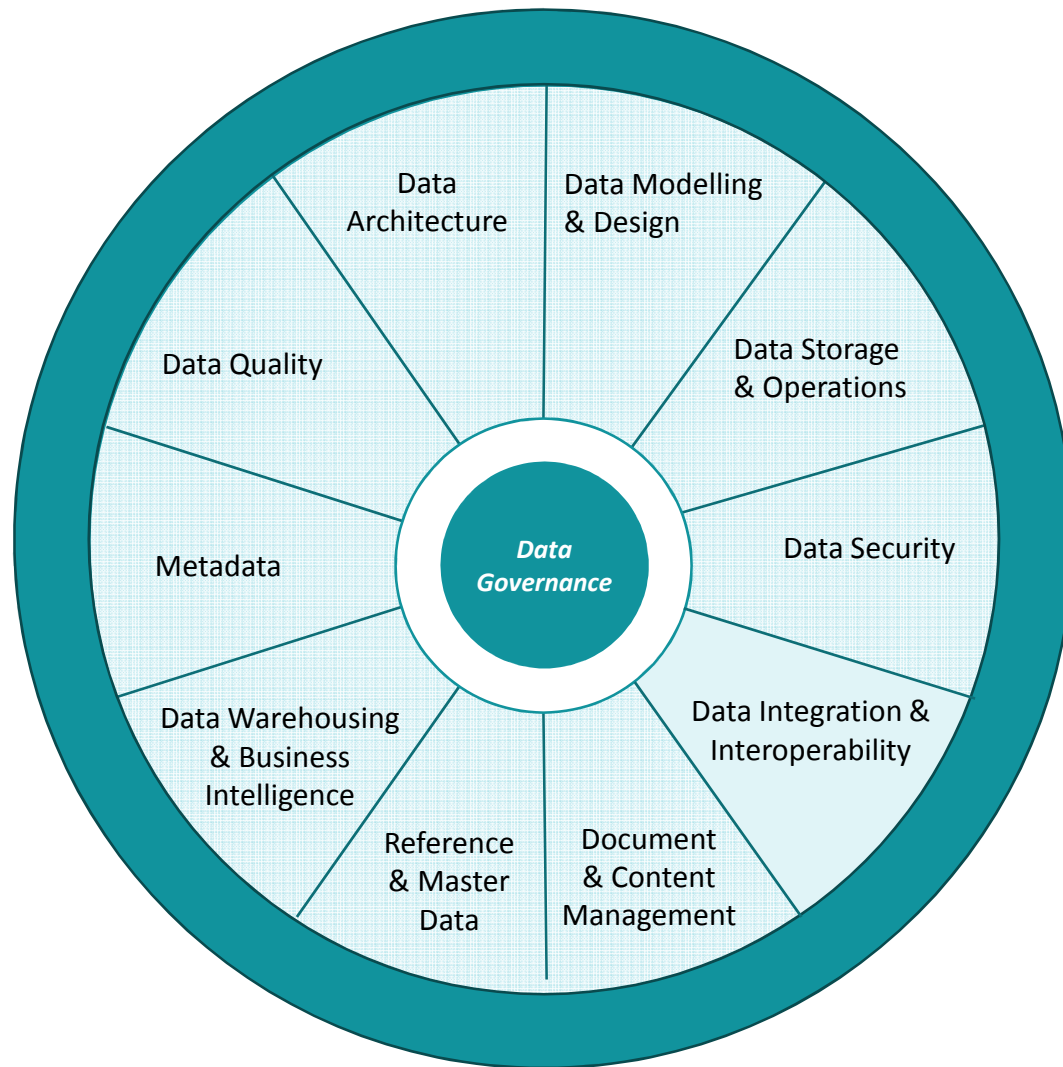
EIM Assessment Deep Dive Interviews

Participants

Section/Team	Branch
DMIS Development and Support Section (DMIS DDS)	H&C Policy Branch
Information Management Strategy Section (IMS)	Parliamentary Governance & Information Branch
Statistics and Data Integrity (S&DI)	H&C Policy Branch
Performance and Reporting Team (Income Support)	Business Improvement and Support Branch
DMIS Data Services team	CIO Branch (since transitioned to DHS)
Rehabilitation and Compensation, Analysis and Reporting Team	C&O Primary Claims & Reconsiderations Branch
VCR Data and Analytics Stream	VCR Implementation Branch
Reform, Assurance and Sector Engagement Section	H&C Provider Engagement Branch
Research Section	H&C Policy Branch
Enzyme Group	

EIM Assessment Deep Dive Interviews

Using Data Management Body of Knowledge (DMBOK) 2017



- Defines 11 Core Knowledge Areas: inputs, activities, participants, techniques, tools, metrics and deliverables.
- Calls out 3 hot topics
- ***“Who does what and how”***

Hot Topics

Data Ethics

Big Data and Data Science

Data Management Organisation
and Role Expectations

High Level Observations

EIM Assessment Deep Dive Interviews

High Level Observations - 1/3

Current State - Strengths

- DVA has an overarching Information Governance Framework and Information Asset Register, in line with NAA guidelines.
- DVA has mature data warehouse, reporting, analytics and advanced analytics capabilities. However, technologies have not kept up with industry trends.
- There are over 1,000 (internal) management information reports used by over 600 people. Some power users can create and share their own reports.
- 30+ statistical data reports produced. Many published externally on DVA's internet site.
- Advanced analytics (data science) capabilities noted with demographic forecasting and health cost modelling (reviewed by Australian Government Actuary).
- DVA has specialist business sections with Information Strategy Section, DMIS Development and Support Section, Statistics and Data Integrity Section. Work in partnership with DVA Technical Teams (now DHS).
- Dedicated Performance and Reporting teams embedded within lines of business.

Departmental Management Information System (DMIS)

The Departmental Management Information System (DMIS) is the department's **rich** and **authoritative** data repository, supporting reporting and analytics capability by providing access to **client-centric** and **integrated business views** of extensive DVA program and administrative data.

Users access the information through Business Intelligence tools that deliver standard reports, ad hoc data analyses and research capabilities.

The image displays a circular diagram titled 'Data Holdings' with segments for 'Client Data', 'Corporate', 'Health', and 'Treatment and Support'. To the right is a screenshot of a report interface with the text '600+ Internal Users' and '1000+ MI Reports' overlaid. Below the screenshot are several sample reports, including 'Client Service Calendar', 'Client Health Data Extract', and 'Client Group Email Report'.

30+ Statistical Publications



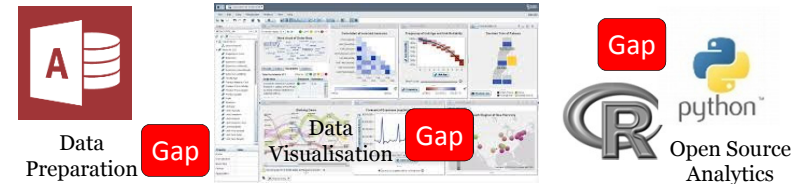
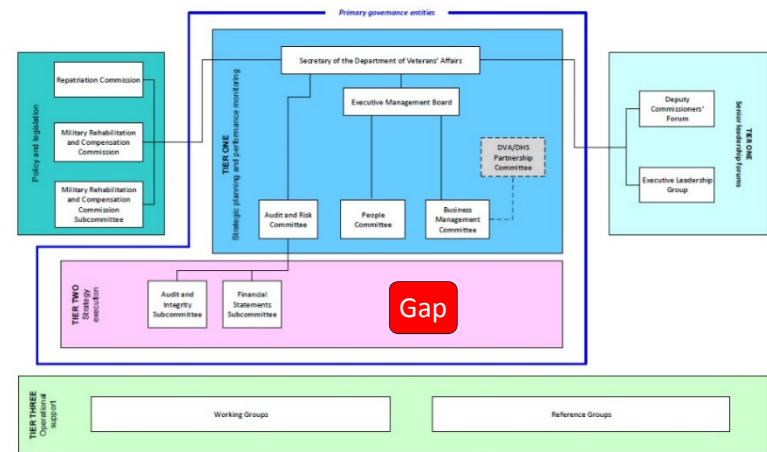
A screenshot of a statistical report showing a table with columns for 'Year', 'Age Group', 'Gender', and 'Value'. The table contains multiple rows of data, with some cells highlighted in red.

EIM Assessment Deep Dive Interviews

High Level Observations - 2/3

Gaps and Issues

- No strategic committee directly overseeing EIM.
- Coordinated program of work for EIM not visible.
- Many people use MS-Assess to prepare MI/analytical data. Teams hampered by limited access to data quality and data preparation tools.
- Data models not readily available or missing.
- No data visualisation tools for internal users or external presentation of statistics/analytic products.
- Not using wealth of open sources tools such as R and Python to augment and enhance analytics capabilities.
- Increasing demand for data/statistical services.
- Internal services to assist people understand and use data holdings has reduced in recent years. Self-service information on intranet is not maintained and some out of date.
- Current level of resources not sufficient to enable DVA and VCR teams with data requests, data preparation and data interpretation.

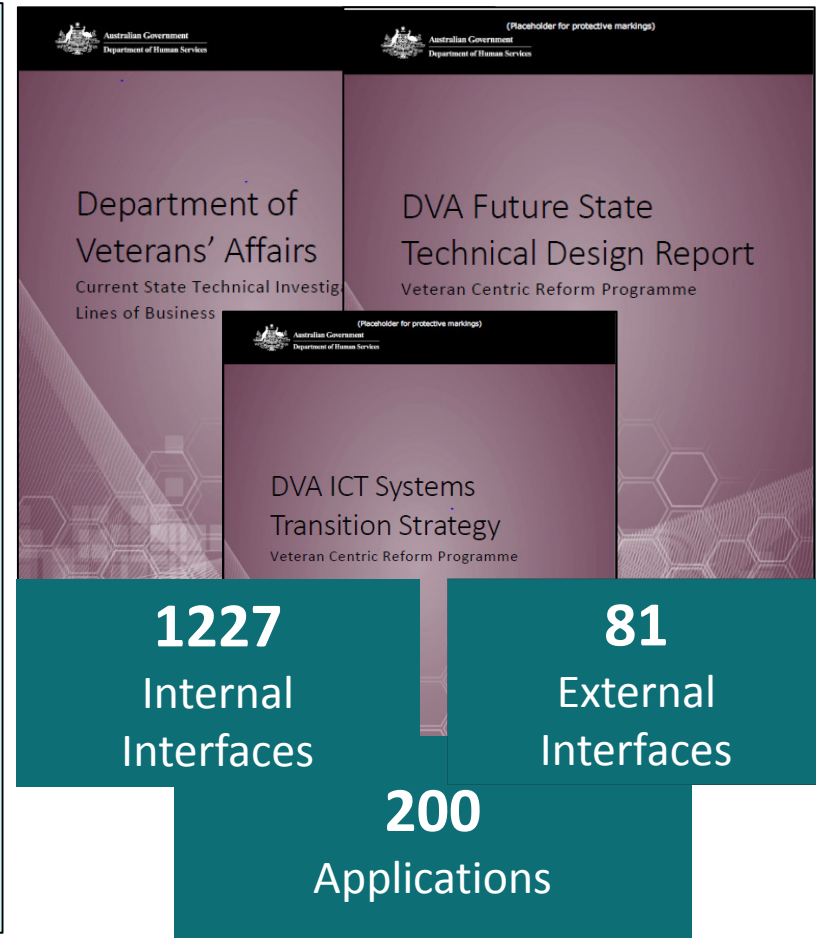


EIM Assessment Deep Dive Interviews

High Level Observations - 3/3

ICT Transition Strategy

- DVA has collated list of Information Assets and Business Information Systems as per NAA requirements.
- DHS-DVA documented a complex set of 200 systems, potentially in scope for transition from DVA to DHS.
- Many internal/external system interfaces add to the complexity of technical platforms and support.
- Large number of systems and interfaces increases risk of data fragmentation.
- Need to maintain DVA MI data in DMIS before, during, after transition of each system.



EIM Business Initiatives

Business Initiatives to enhance EIM capabilities

- Consolidated and organised around 5 EIM Dimensions
- VCR Data & Analytics team assignment of priority
- Preliminary ball park estimate of effort

EIM Dimensions
Governance (Vision, Strategy, Measurement)
People
Process
Analytics
Data

ID	Title	Description	Priority	Effort
A01	Enhance DMIS Analytics with Open Source Tools.	Add R & Python to enable data analysts and data scientists to leverage the wealth of open source tools and data analytics libraries.	4	1

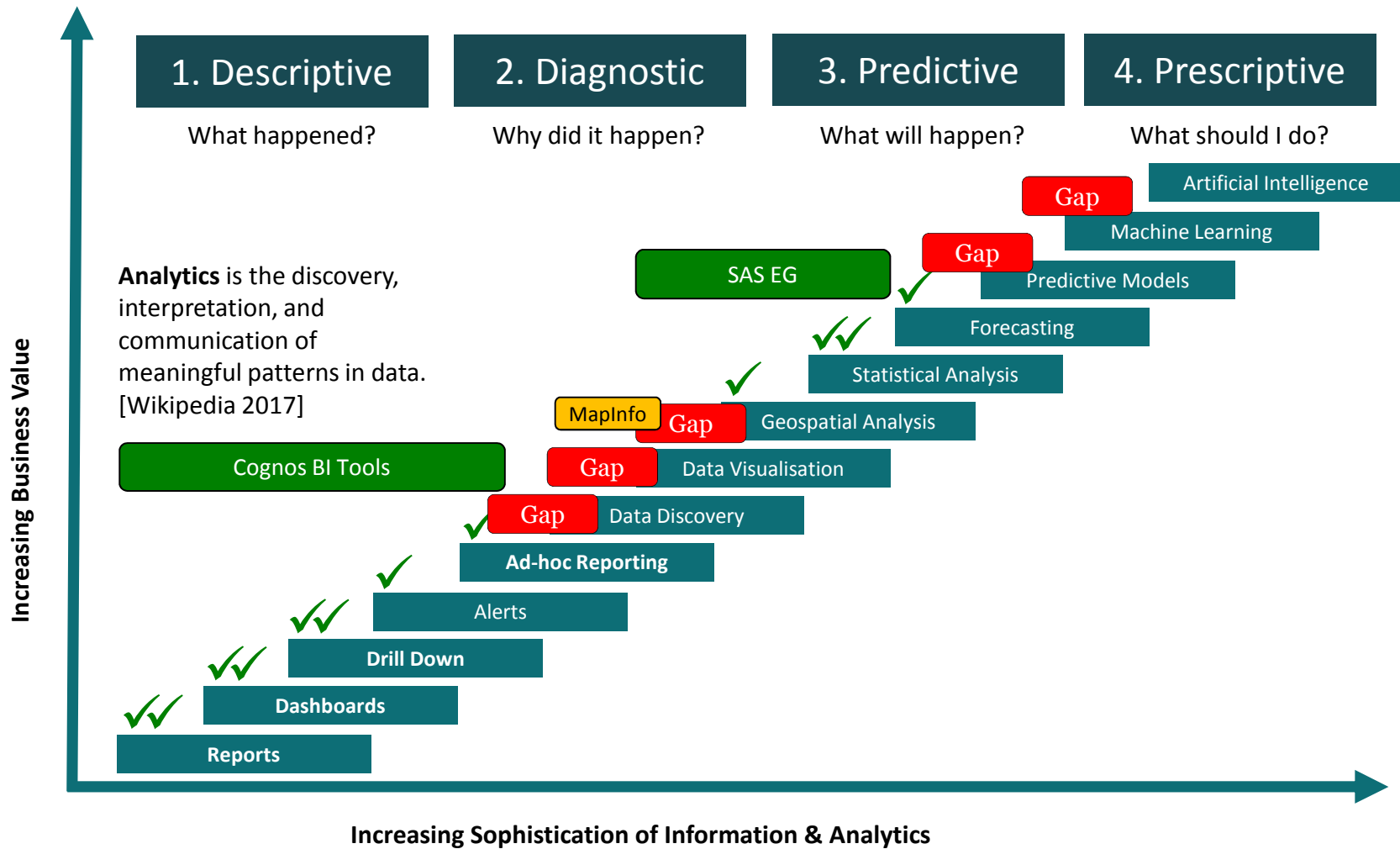
Priority
4 - Very High
3 - High
2 - Medium
1 - Low

Effort	Indicative
4 - Very High	> 6 Months
3 - High	3-6 Months
2 - Medium	1-2 Months
1 - Low	1-4 weeks

EIM Business Initiatives

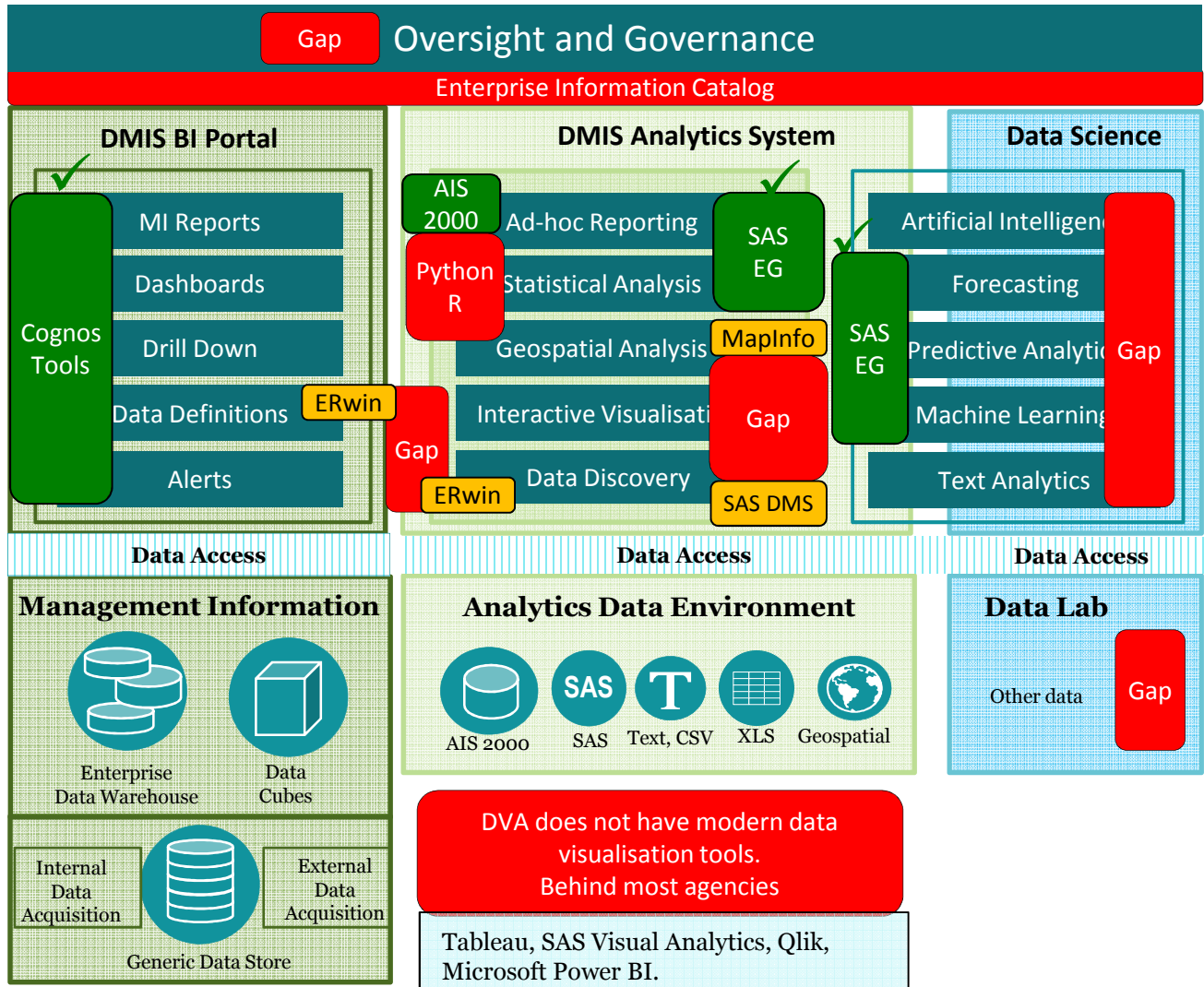
Analytics

Analytics - Gap Analysis



Analytics - Gap Analysis

- Strengths**
- DMIS BI Portal (Cognos).
 - DMIS Analytics (SAS).
 - 1,000 MI reports.
 - 30+ statistical publications.
- Gaps**
- Executive oversight and governance (workshop).
 - No enterprise information catalog & governance portal.
 - No data visualisation tools for internal users or presentation of statistics/analytic products.
 - Lack of modern tools for analytical data preparation.
 - No open source analytical tools such as Python or R.
 - No common place to access data models.
 - No agile environment for exploratory analytics/data science projects.



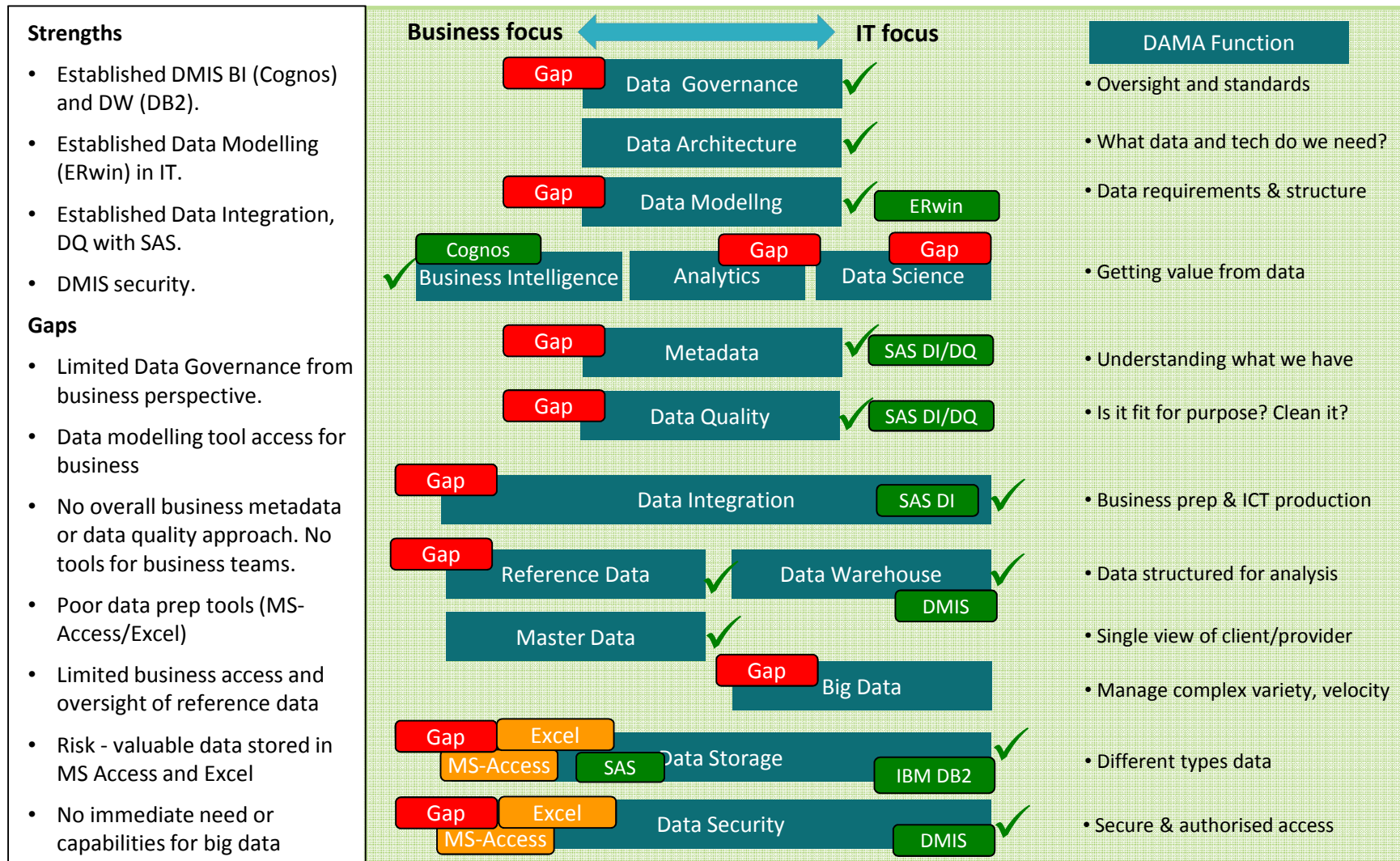
Analytics - Business Initiatives

ID	Title	Description	Priority	Effort
A01	Enhance DMIS Analytics with Open Source Tools.	Add R & Python to enable data analysts and data scientists to leverage the wealth of open source tools and data analytics libraries.	4	1
A02	Introduce Data Science Lab Platforms	A flexible environment (possibly cloud) with suite of tools for data scientists to run data science projects.	4	2
A03	Introduce Data Visualisation Capabilities for Internal Users	Enable data analysts to quickly explore data with interactive tools and create ad-hoc reports.	4	2
A04	Introduce Data Visualisation Capabilities for External Publications	Replace DVA's external statistical publications in static Excel files with interactive maps and data visualisations.	4	4
A05	Enhance Geospatial Capabilities	Replace current address geocoding and mapping tools with contemporary ArcGIS tools in step with partner agencies.	4	2
A06	Retain and Upgrade DMIS Business Intelligence (Cognos)	Retain existing BI platform. Proceed with existing plans to upgrade to current version.	2	2
A07	Retain and Upgrade DMIS Analytics Capability (SAS)	Retain existing SAS EG tools in DMIS analytics environment. Proceed with existing plans to upgrade to current versions.	2	2

EIM Business Initiatives

Data

Data – Gap Analysis



Strengths

- Established DMIS BI (Cognos) and DW (DB2).
- Established Data Modelling (ERwin) in IT.
- Established Data Integration, DQ with SAS.
- DMIS security.

Gaps

- Limited Data Governance from business perspective.
- Data modelling tool access for business
- No overall business metadata or data quality approach. No tools for business teams.
- Poor data prep tools (MS-Access/Excel)
- Limited business access and oversight of reference data
- Risk - valuable data stored in MS Access and Excel
- No immediate need or capabilities for big data

DAMA Function

- Oversight and standards
- What data and tech do we need?
- Data requirements & structure
- Getting value from data
- Understanding what we have
- Is it fit for purpose? Clean it?
- Business prep & ICT production
- Data structured for analysis
- Single view of client/provider
- Manage complex variety, velocity
- Different types data
- Secure & authorised access

Data - Business Initiatives

ID	Title	Description	Priority	Effort
D01	Regain ERwin Data Modelling Capability in Business	BI Report Creators and Data Analysts need data model tools to review designs and understand the structure of data holdings for data preparation and analysis tasks.	4	1
D02	Regain and extend Data Quality Tools	Data Analyst need access to DVA's SAS Data Quality tools to better assess, account for and report on data quality issues.	3	1
D03	Enhance Self-service Data Preparation Tools	Data Analysts need better tools to automate and improve consistency of data preparation and data request services.	3	1
D04	Introduce Data Governance & Data Discovery Platform	Enterprise wide capability to automatically catalogue and classify information assets, publish on intranet and enhance governance practices.	3	4
D05	Retain and Upgrade DMIS Data Warehouse (DB2)	Retain existing EDW platform. Proceed with existing plans to upgrade to the latest version.	2	2
D06	Investigate Use Cases for Big Data Technologies	DVA does not appear to have any immediate requirements for big data technologies. DVA should consider use cases emerging in other government agencies.	2	2
D07	Collate Reference Data Standards	Reference data is critical for accurate statistics and reporting. Make available and provide access to give staff confidence in data analysis and data science projects.	2	2
D08	Provision Data Triage Facility	Provide secure data storage area for authorised data analyst to "land and look" at a data for early diagnosis and assessment before data is brought into DMIS or data science projects.	2	2
D09	Acquire DHS SAP CRM data for DMIS	As business applications are transitioned to DHS, DVA will require a feed of the MI Data to marry together with existing data in DMIS to show before/after changes.	2	4

EIM Business Initiatives

People

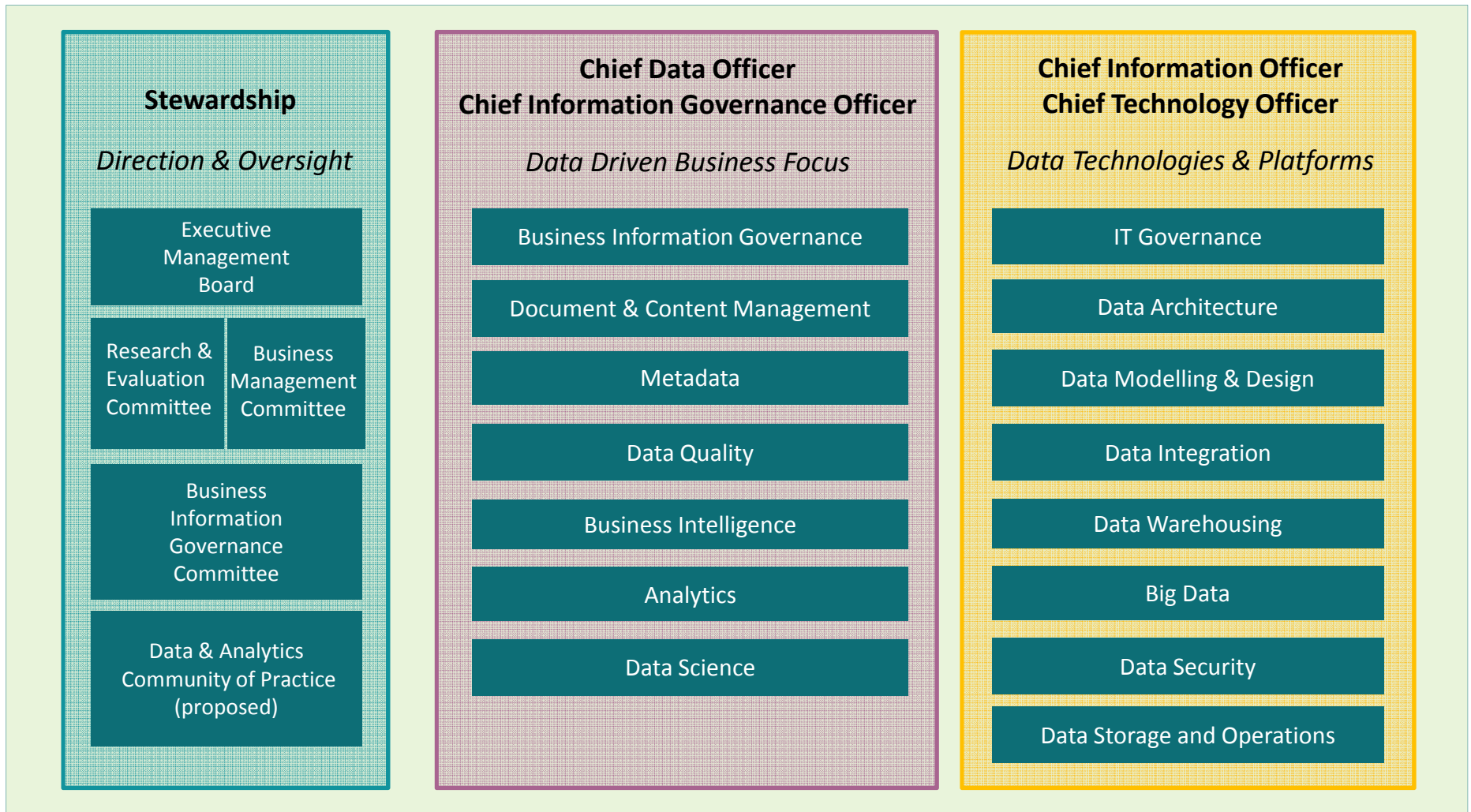
People - Gap Analysis

Strengths		#	Function	IMS	DMIS DSS	S&DI	Perf Rprt Health	Perf Rprt R&C	Opt Intell	DIMS IT DS	Other		
<ul style="list-style-type: none"> Information Governance led by Information Management Strategy Section. BI led by the DMIS Development and Support Section. Analytics is led by the Statistics and Data Integrity Section. DMIS Data Services team lead ICT technical functions. Many business teams doing BI, DQ and Analytics. <p>Gaps</p> <ul style="list-style-type: none"> Data Governance Metadata (enterprise) Data Quality (enterprise) Data Science Big Data Executive Leadership role and Coordinated functions Approx 9 vacant positions 		1	Data (& Info) Governance	3	1	1				1			
		2	Data Architecture		1						3		
		3	Data Modelling and Design		2	1					3		
		4	Data Storage and Operations								1	3	
		5	Data Security		2						1	3	
		6	Data Integration and Interoperability		1	2	1	1	1		3		
		7	Document and Content Management	2									3
		8	Reference and Master Data		1	2					3		
		9	Data Warehouse		2	1					3		
		10	Business Intelligence		3	2	2	2	2	2	2		
		11	Metadata	1	2	1					1		
		12	Data Quality		1	2	1	1	1	1	2		
		13	Big Data										
		14	Analytics		2	3	1	1	2	1			
		15	Data Science			2							
			Staff current(total)	1 (2)	9 (14)	10 (13)	2 (?)	3 (?)	6 (?)	6			

Level of Responsibility 3 Departmental 2 Joint 1 Local

People – Gap Analysis

DAMA Functions - “who does what”



People - Business Initiatives

ID	Title	Description	Priority	Effort
P01	Establish Data Governance Team	Data Governance team to oversee and improve processes to better acquire, manage and use information assets and capabilities.	4	2
P02	Create Data and Analytics on-boarding pack	Prepare briefing pack to on-board staff/consultants to quickly understand what data holdings and analytics capabilities are available and their obligations in using these.	2	1
P03	Establish Communities of Practice	Provide briefings and opportunities for staff to share experiences and learn from colleague. Formalise training and mentoring with data analytics staff in lines of business.	3	2
P04	Enhance Data and Analytics Skills Certification Program	Reinvigorate DMIS certification program and include broader set of tools and users for BI, data analytics and data science activities. Provide mix of internal and external training options	3	3
P05	Consolidate data and analytics expertise with CDO	Establish CDO role to lead holistic, business focused capabilities for EIM program.	4	3

EIM Business Initiatives

Process

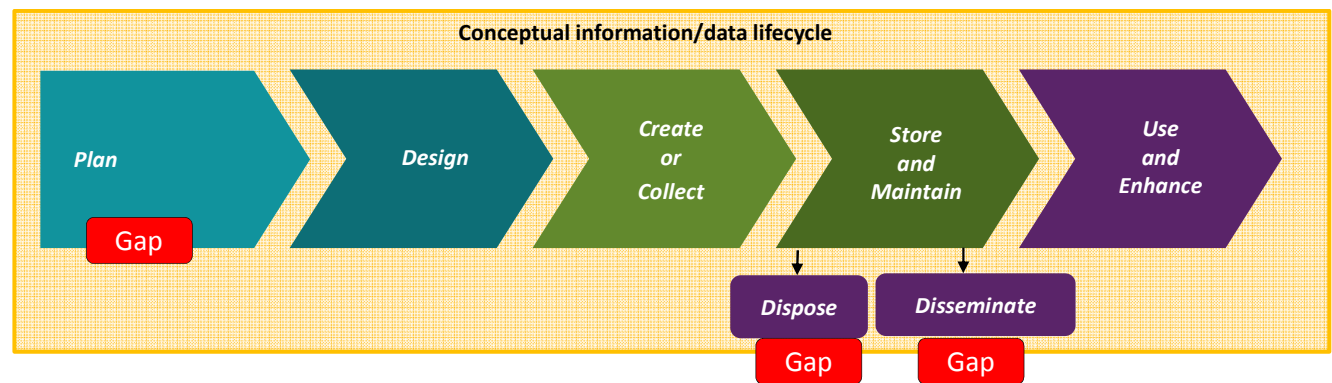
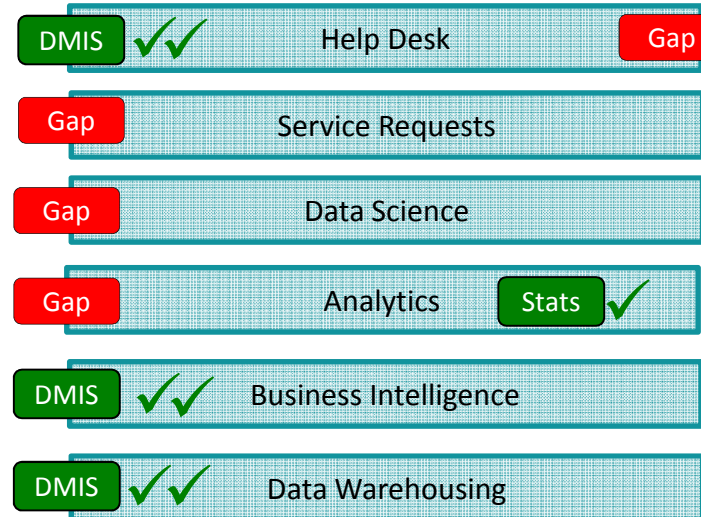
Process - Gap Analysis

Strengths

- Formal DMIS Methodology available on intranet. Covers Data Warehousing and BI.
- Some statistical products have processes well documented – e.g. health cost modelling.
- DMIS Helpdesk guides staff with access and use of DMIS data and BI tools.

Gaps

- Helpdesk does not cover full range of analytics, statistics or data science projects.
- Different processes for managing services requests.
- Increasing data science projects not supported with a methodology or guidelines.
- Many key processes rely on experienced individual – raising single person risks
- Data planning not consistent.
- Guidelines for disposal and dissemination of data not consistent.



Process - Business Initiatives

ID	Title	Description	Priority	Effort
R01	Introduce Help Desk & WIT Solution	Common front-door for requests and back office tool with work item tracking for VCR and existing DVA data and analytics teams.	3	2
R02	Revamp Intranet to present Data and Analytics Portal	Make information about DVA's information assets, tools and practices more visible and easier to use.	2	1
R03	Consolidate and Streamline Data Requests	Requests for data have increased 3 fold in 4 years for the S&DI Section and DMIS also experiencing increases. Consolidate processes and automate steps when data preparation tools are available to team members.	3	1
R04	Management Reporting on Data Assets and Usage	Automate collation of data around information assets (data, reports, statistical publications, analytic models) and their usage. Present as online BI reports to show total assets under management and data driven usage patterns.	1	1
R05	Document Processes for Analytics and Data Science Projects	Create short 2 page summary of how analytics and data science projects will be planned and undertaken. Ensure best practices are created and shared. Data Management Plan to be required.	1	1

EIM Business Initiatives

Governance

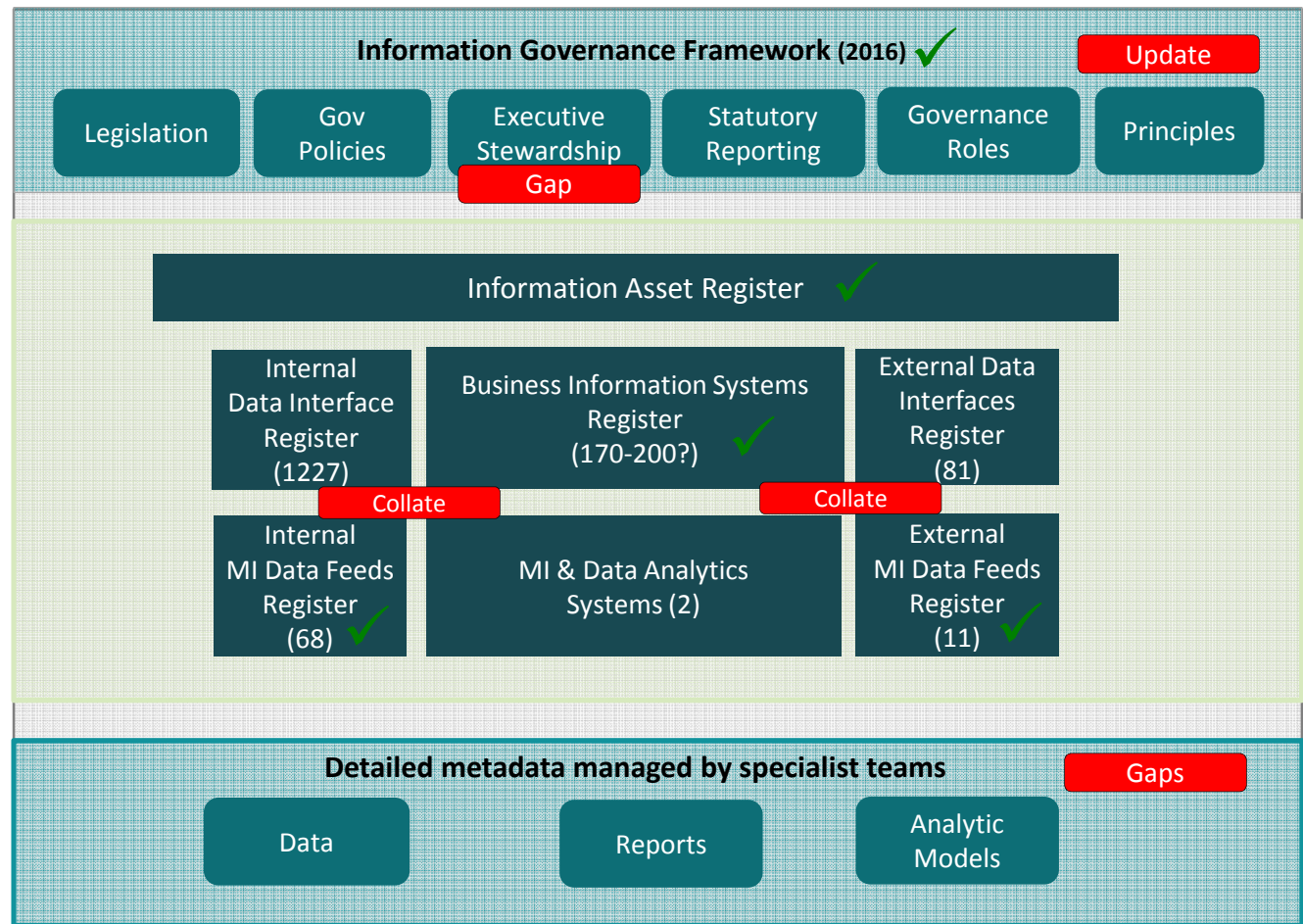
Governance - Gap Analysis

Strengths

- Information Governance Framework.
- Information Assets Register
- Information Systems list as part of DHS-DVA VCR business case.

Gaps

- Information Committee disbanded in Aug 2017. No Exec Committee with Business EIM stewardship.
- Information Governance Framework to be updated to reflect 2017 and VCR
- Consolidation of DVA and DHS spreadsheets listing assets.
- Business oversight of strategic changes to information assets.
- Detailed metadata, models, catalog of data holdings, reports are patchy. No single source.



Governance – Gap Analysis

An area of concern from EIM workshop participants

Main Objective?

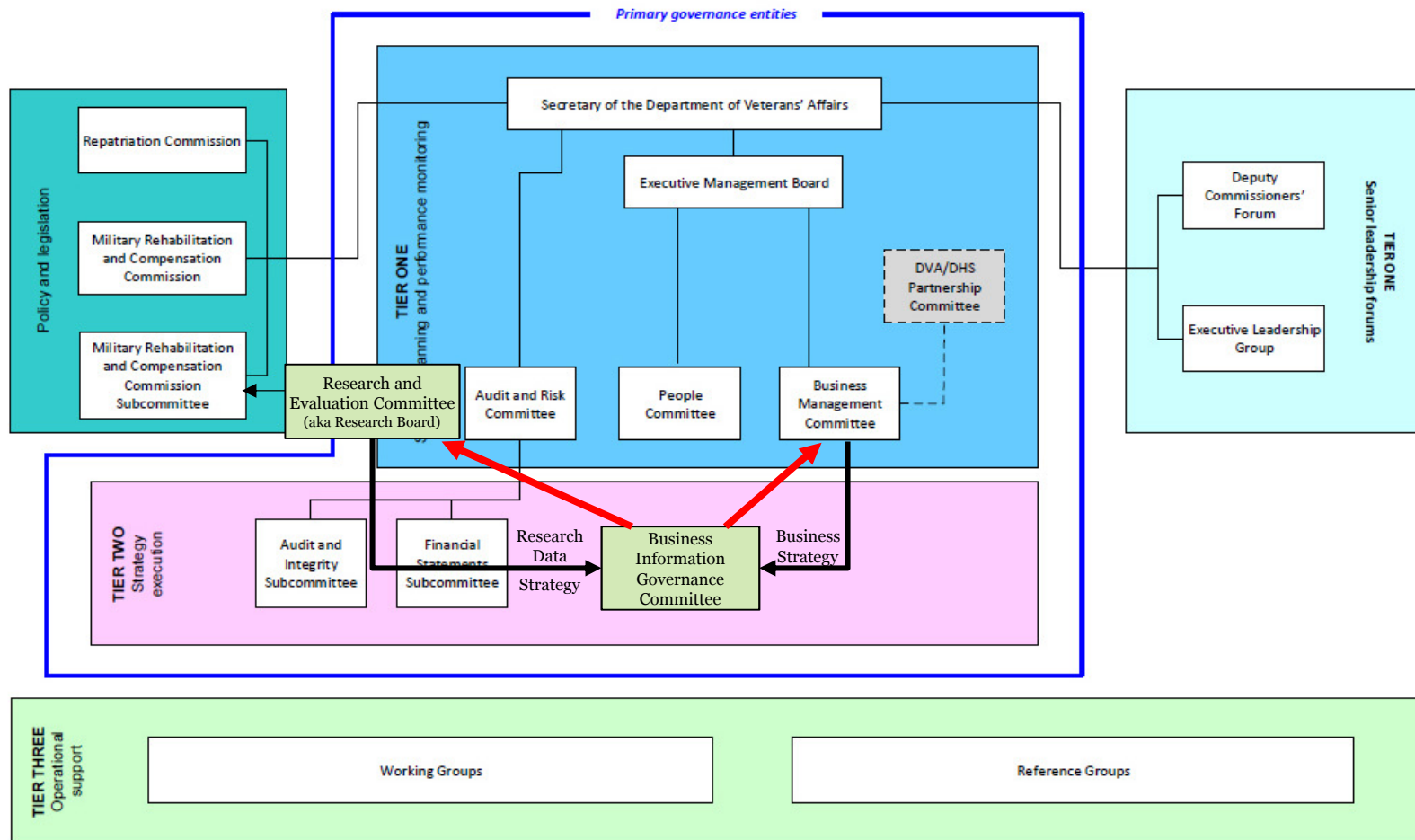
- Governance is operating at an enterprise level.
- Governing data as an asset, so it is shared and fit for purpose, across agencies for greater value.
- Management of information by qualified stewards.
- Clear policy and standards for information governance are developed, well known and distributed.
- Consistent approach to EIM governance.
- Strategic oversight including assurance and compliance.

Main Barriers?

- Too many silos. Multiple data holdings outside the data warehouse environment.
- A lack of leadership, coordination and culture.
- A base level starting point.
- Governance at too low a level demonstrates that standards are often ignored.
- The necessary structure, including a CDO and data branch are essential and needed for DVA to evolve.
- Reticence to push boundaries.

Governance – Gap Analysis

Information Governance Committee – in line with NAA



Governance – Gap Analysis

Possible Data Governance Operating Model



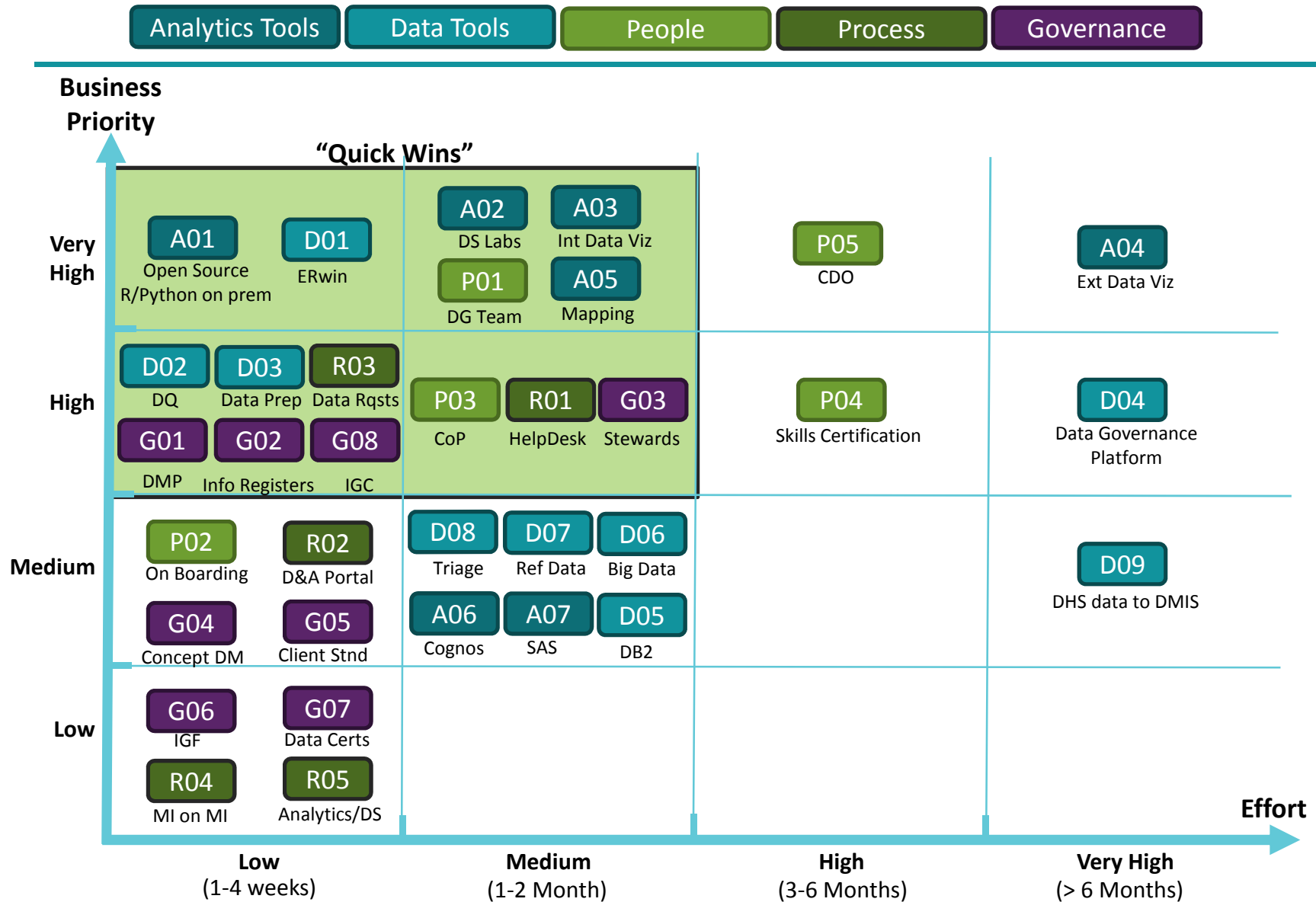
Governance - Business Initiatives

ID	Title	Description	Priority	Effort
G01	Formalise Data Management Plan	Create 2-page data management plan based on US-NSF and apply to all projects in planning their data needs, use, approval and dissemination of data and results.	3	1
G02	Rescue Strategic Information Registers	Continue work of IM Strategy Section to collate and publish reconciled list of strategic information asset registers: Information Assets, Business Information systems and DHS-DVA VCR's list of systems.	3	1
G03	Formalise Data Stewardship Policies and Practices	Align IM and DMIS practices and formalise data stewardship down to data subjects area in support of AS' data sponsor responsibilities.	3	2
G04	Create DVA Conceptual Data Model	High level "top 10" business data entities (Client, Service Provide, Claim etc), their relationship and critical business rules. Birds-eye view of DVA's data holdings.	2	1
G05	Create Enterprise Client Data Standard	Define the master data definition for Client in context of DVA's business and account for variation in business context (eg VEA, MRCA, SRCA)	2	1
G06	Update DVA Information Management Governance Framework	IGF 2016 needs to be updated for 2017 to account for any variations in WoAG IM policies/practices and cover VCR initiatives.	1	1
G07	Create Certification Scheme for DMIS data	Create data certification (Gold, Silver, Bronze) checklist for DMIS data holdings based on the Open Data Certification Model and make available to guide users.	1	1
G08	Establish Business Information Governance Committee	Reshape Data Strategy Steering Committee into Information Governance Committee, in line with NAA requirements.	3	1

EIM Business Initiatives

Prioritisation

Business Initiatives - Prioritisation and Effort Estimates



Appendix

Appendix A

EIM Assessment Workshop Participants

Workshop Invitees			Attended	Completed Survey	
Name	Organisational Unit	Location	Workshop	Fri 6 Oct 17	Mon 9 Oct 17
	ICT Data Services Unit, ICT Business Applications	Canberra	Yes	Yes	
	Information Management Strategy Section	Canberra	Yes	Yes	
	VCR - Data & Analytics Project	Canberra	Yes	Yes	
	Performance Reporting & Finance Unit	Sydney	Yes	Yes	
	ICT Improving Processing Sys Section	Melbourne	Yes	Yes	
	DMIS Development and Support Section	Canberra	Yes	Yes	
	Statistics and Data Integrity Section	Canberra	Yes	Yes	
	VCR - Data & Analytics Project	Canberra	Yes	Yes	
	Operational Intelligence	Canberra	Yes	Yes	
	Primary Claims & Operations Section	Melbourne	Yes	Yes	
	Reform, Assurance & Sector Engagement Section	Sydney	Yes	Yes	
	ICT Enabled Projectsm Section	Canberra	Yes		
	DMIS Development and Support Section	Canberra	Yes		Yes
	VCR Student Pasyment and Income Support Project	Canberra	No		Yes
	DMIS Development and Support Section	Melbourne	No		Yes
	DMIS Development and Support Section	Melbourne	No		Yes
	Statistics and Data Integrity Section	Canberra	Sent Proxy		
	Performance Reporting & Finance Unit	Brisbane	No		
	ICT Planning and Business Engagement Section	Canberra	No		
	Performance Reporting & Finance Unit	Sydney	Sent Proxy		
	H&CS Provider Engagemen & Assurance Branch	Canberra	Sent Proxy		
	ICT Solutions Branch	Canberra	No		
	ICT Business Applications	Canberra	Sent Proxy		