

R24_IES_S_IT_ITSSC_DATA AND ANALYTICS

PGM - IES V1.0 (IES)

❖ *For work being proposed for inclusion into the capital works program.*

Project name:	Data and Analytics Programme
Department:	Technology & Performance
Investment Type:	Non-Network
Investment Category:	Non-Network - Information Technology
Functional Area(s):	ITSSC
Project ZoNe location:	assetzone.tnad.tasnetworks.com.au/R24_distribution/ICTIT
Document Number:	R0002079090
Needs Item Reference:	R0002118608
Regulatory Investment Test Required?	No
Version Number:	1.0
Date:	15/12/2022

❖

Preferred Option:	Option 1				
Level 1 Estimate +/- 30 per cent (preferred option – base dollars):	[REDACTED]				
Expenditure profile	FY25	FY26	FY27	FY28	FY29
Capex	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Opex					

❖

Sign-offs (in support of the recommended option)			
Works Initiator:	[REDACTED]	Date	18/11/2021
Leader: (Endorsement)	[REDACTED]	Date	23/02/2022
Leader or General manager noting delegation levels. (Approval) ¹	[REDACTED]	Date	Click here and type the date.

¹ Approval based on delegation level.

❖ denotes mandatory field

1. RELATED DOCUMENTS

Description	URL
Needs Form	R24 NEE S IT ITSSC Data and Analytics Pgm - Needs Assessment
Estimate	R24 EST S IT ITSSC Data and Analytics Pgm - Project Cost Model - Option 1 - V3.xlsm R24 EST S IT ITSSC Data and Analytics Pgm - Project Cost Model - Option 2 - V3.xlsm
NPV	R24 NPV S IT ITSSC Data and Analytics Pgm - NPV - V4.xlsx
Asset Management Plan	IT Software Asset Management Plan
TasNetworks Towards 2030	
TasNetworks Digital Strategy	
Future Distribution System Vision	
TasNetworks Corporate Plan	
TasNetworks Business Plan	
TasNetworks Risk Management Framework	
National Electricity Rules (NER)	

2. OVERVIEW

2.1 APPROVAL GATE STATUS



Approval Gate	Approver Title	Approver Name	Date
Gate 1 – Needs	Leader, Information Technology		
Gate 2 – Option	This project seeks OPTIONS APPROVAL to proceed		

In line with the Gated Investment Framework this Project seeks Gate 2 Option approval to proceed to budget and financial approvals. This IES presents economic and risk assessments for each option considered, together with recommendation of a preferred option to address the business need.

2.2 BACKGROUND

According to Gartner Research, Ventana Research, Harvard Business Review and IDC, the following key trends will shape the data analytics approaches that organisations take over the next 5 years.

Data volumes will continue to grow – with data increasing in complexity as well as volume and being drawn from more diverse sources in a greater variety of formats

Democratisation of the analytics function - There are already growing calls within TasNetworks to make data readily available for business unit specialists to analyse. This reflects the democratisation trend, with business demanding a move to a self-service model where business specialists can perform their own data analytics rather than relying on a central reporting and analysis function.

Analytics automation - removing the mundane to make analysts more efficient and removing complexity to provide analytics capability to business SMEs rather than trained data specialists. This will partly involve the increased use of Artificial Intelligence and Machine Learning but it needs to be built on a sound foundation of accessible and well managed data.

Increasing integration complexity – including interlinked cloud environments and hybrid cloud/premise environments, with AI playing a growing role in integration technologies.

Machine-learning-enabled data quality – the use of machine learning or AI to manage the increasing challenge of maintaining data quality.

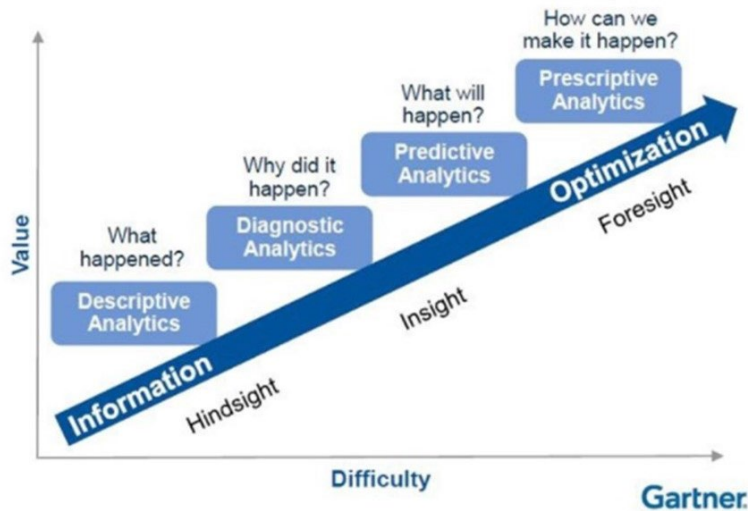
Analytics governance – the need for formal governance around the use of data and tools for analytics purposes and the incorporation of this into broader data and analytics governance initiatives.

Increasingly sophisticated analytics techniques – such as semantic approaches for natural language technology projects

Consumer Data Protection and Privacy - concerns and scrutiny will continue to grow, with increasing protective legislation

Gartner describe an ascendancy model for levels of maturity in Data Analytics as shown in the following graphic.

Gartner Analytic Ascendancy Model



TasNetworks is currently at a fairly early stage of maturity in this regard with reasonable if patchy capability in descriptive analytics and some forays into diagnostics. However, various business drivers will require a higher level of maturity and the business is already calling for more access to data and better tools.

For example TasNetworks is undertaking an Asset Management Improvement Program (AMIP) as part of the TasNetworks Strategic Asset Management Plan (SAMP) to drive network asset management maturity across the business aligned with ISO 55000 standards.

AMIP aims to improve data-driven decision making for asset management that considers risk and delivers value to TasNetworks and the Tasmanian Community.

This program will result in the capture of significant additional data. That data will need to be stored managed, cleansed, analysed and reported.

Similarly significant additional volumes of energy consumption and power quality data will result from 5 Minute Settlement changes.

These are current examples of increasing volumes and varieties of data becoming available to TasNetworks with the need to manage and analyse them. Other examples are given below, but these are indicative of a broader trend.

As the demand for greater business insight grows and better tools become available TasNetworks needs to be positioned to realise the potential benefits. This will require investment in technology and business process to support the business initiatives.

2.3 PROBLEM DEFINITION

In order to derive significant benefits from increased utilisation of data analytics TasNetworks will need to prepare for the increasing volume and diversity of data as well as changing tools and technology.

A range of business driven initiatives are already underway, or are planned, that will gather and analyse large data volumes to derive greater insights into the state and operation of our network, the behaviour of our customers, the operation of the market, and so on.

Data analysts operating in the business have expressed frustration at constraints on technology capability and tools to support them. Information Technology needs to ensure they are properly supported and have access to resources that will enable them to effectively deliver for the business.

Some examples of identified initiatives are listed below, but many others will arise during the reset period.

5 Minute Settlement - Energy Consumption and Power Quality Data

The 5 minute settlement rule change means that TasNetworks will start to receive a 6 fold increase in energy consumption data, which will generate very large volumes of data over time.

TasNetworks is also planning to obtain 5 minute Power Quality Data from MDPs. This will enable a range of diagnostic roles, including connection verification, broken neutral detection, voltage compliance and transformer balancing. It will also significantly increase data volumes to be managed and analysed.

Additional investment will be required, include considerations for:

- Additional storage, computation resources and license limits for key analytics systems
- Uplift of integration services to support increased volume and frequency of data.

Network Asset Management

A significant increase in the volume of data will result from AMIP. Consequently, IT will need to store, manage and deliver this with contemporary, near real time tools.

Additional investment will be required, include considerations for:

- Integration of additional data sets into existing systems and interfaces
- Additional storage, computation resources and license limits for key analytics systems
- Uplift of integration services to support increased volume and frequency of data
- New transformations of asset data to support industry standard data models (e.g. CIM)
- Enhanced self service capability.

Finance, PSC, HCM, EHS, Customer, Market and miscellaneous business analytics

The focus for non-network analytics is to unlock the potential of the data and to uplift our environment to enable improved planning and forecasting capabilities, leveraging AI and machine learning technologies.

- Rationalisation of multiple legacy and tactical analytics environment into a single source of truth
- Uplift of enterprise data management maturity
- Financial planning and forecasting tools
- Expanded data scope for historical financial reporting
- HCM analytics uplift, data quality improvements, workforce analytics
- Supply Chain analytics enhancements to improve material management and forecasting
- Improved customer data management, internal lineage, security, auditing and data controls.
- Fully integrated EHS analytics solution, uplift data collection quality, unified reporting dashboards
- Establish business wide data quality measures and practices.

Other initiatives that will generate significant volumes of additional data and requirements for analytics include:

- Power quality data from new meters
- Lidar and other Aerial Survey data gathering.

Examples of IT investments required include:

- Technical data management standards
- Formalised testing and data certification processes
- Improved access controls to data and tools
- Improved data lineage and tracing, metadata management
- Reduce latency on cloud services (to support DLP for example)
- Additional integration of internal systems into cloud, including security and data replication
- Support for “Open Data” – published public or internal data interfaces/sources.

3. CUSTOMER NEEDS AND IMPACT

The customers for this initiative are internal business units who have been consulted on an ongoing basis regarding their need for reliable and meaningful analytics and reporting of increasingly complex and voluminous data.

This initiative aims to provide the following to TasNetworks’ internal customers:

- **Better control and management of data** – improved standards and tools to manage data quality and access will provide more reliable information for business decision making.
- **Enhanced analytics and reporting capability** – improved integration across multiple data sets will allow greater multi-disciplinary reporting/data mining.
- **Broader (controlled) access to relevant structured data** – including enhanced flexible self service capabilities (on demand and subscription based).
- **Greater data security** – with improved mechanisms to prevent data loss, leakage or corruption.
- **Increased business efficiency and effectiveness** – by better leveraging improved quality of corporate data, this initiative will make for better decision making and increased staff productivity and thus optimise business outcomes.

Indirectly, the users of the Tasmanian distribution network (our customers) will be impacted by improvements in business decision making and efficiency.

4. CORPORATE ALIGNMENT❖

4.1 BUSINESS PERFORMANCE OBJECTIVES

This project will help achieve the customer and business performance objectives in TasNetworks’ Corporate Plan, and as shown in Table 1.

Table 1 - Performance objectives relevant to this project.

Performance category	Performance measure	Investment impact on performance
Our business - Network service	Works program delivered	Informed decision making based on reliable data and meaningful reporting

Performance category	Performance measure	Investment impact on performance
		is integral to delivery of the works program.
Our customers	Customer net promoter score	Enhancing BI and reporting capabilities will further optimise our processes, thus driving the customer net promoter score.
Our people	Employee engagement	Increase staff capability to generate data insights and improve decision-making, thus increasing staff morale.
Our business - Sustained cost management	Efficient operating and capital expenditure.	Enhancing BI and reporting capabilities will improve business efficiency, thus supporting the aims of sustained cost reduction.

4.2 RISK OBJECTIVES

The corporate plan identifies a number of business risks outlined in the TasNetworks Risk Framework. The TasNetworks Risk Appetite Statement details the level of risk the business finds acceptable in each category (Safety, Environmental, Financial, Regulatory, Legal and Compliance, Customers, Assets, Reputation and People).

This initiative addresses Regulatory Compliance, Business Continuity and Customer risks, of which TasNetworks has [REDACTED] appetite. Unreliable and/or inaccessible data negatively impacts on decision making and therefore poses increased risk in these areas.

An assessment of the risks mitigated by the project is presented in Section 0 and further detail in Appendix B – Key Business Risk Comparison.

Table 2 - Business risks mitigated by this project

Risk ID	Risk Category	Risk Drivers	Impact
ITR-194	Business Continuity Management	Lack of data and/or inaccurate data or inadequate analysis capability may result in inappropriate business decisions.	Inappropriate business decisions could adversely impact on business continuity.
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
ITR-197	Sustainable and Predictable Pricing	Incorrect data or analysis may result in decisions that adversely affect pricing.	Calculations of transmission and distribution pricing are dependent on accurate data and reliable analysis of that data. Failures or inaccuracies in either could result in inappropriate or unpredictable pricing.

Risk ID	Risk Category	Risk Drivers	Impact
ITR-196	Customer Focus	Incorrect data or analysis may result in decisions that adversely affect customers.	Potentially negative financial or other impact on our Customer and our Reputation.
ITR-200	Emerging Complexity of the NEM	The emerging complexity of the NEM means more data needs to be captured and more complex analysis needs to be performed to inform appropriate business decisions.	Lack of proper analysis and reporting on available data or misleading analysis resulting from incorrect data could cause inappropriate business decisions to be made resulting in non-conformance with NEM regulations.

4.3 STRATEGIC OBJECTIVES

The following table summarises strategic objectives that will be addressed by this project.

Table 3 - Strategic objectives relevant to this project

Strategic Document	Strategic Objective	How the proposed investment will address the strategic goal
TasNetworks Business Plan	Our Business – “Harnessing the power of data to improve our network asset management”	This initiative will improve the management of data to enhance its security, reliability and availability. Better, more readily available data will support network asset management
TasNetworks Business Plan	Our Business – “Deliver our Works Programs”	Timely availability of Quality data is critical to the delivery of the works programs. This initiative will support and improve the quality, reliability and availability of key data.
TasNetworks Business Plan	Our Customers – “We engage with our customers, and continue to develop customer-centric approaches”	Improve data analytics will allow TasNetworks to better understand customer needs and continue to improve our approaches to customer engagement. As a result, this initiative will enable us to add more value to the services we provide.
TasNetworks Business Plan	Our Owners – “Driving an efficient business that ensures our business remains sustainable”	Availability of quality data and an ability analyse operational performance is a key factor in driving an efficient business. Consequently this initiative will support that strategic goal.

Strategic Document	Strategic Objective	How the proposed investment will address the strategic goal
Digital Technology Strategy	"Treat Data as an Asset" "Accelerates and increases the impact of digital" "Prioritises Digital investments to maximise our returns" "Ensures cyber security is covered across all avenues"	Data is a valuable asset and needs to be managed accordingly. This initiative will implement a range of standards, procedures and tools to better manage the data that TasNetworks depends on.

5. PROJECT OBJECTIVES❖

The objectives of this initiative are to prepare for the increased demand for data analysis capability that TasNetworks will have in coming years. There is an increasing need for sophisticated data analytics to provide insights from the exponential growth of data becoming available.

Specific objectives that will position TasNetworks to take advantage of the benefits that data analysis can offer include:

- The capability to properly manage the data being delivered in increasing volumes from a growing number of sources. Ensuring quality, reliability and security of the data in line with its criticality as a valuable asset.
- Providing additional or improved data analytics tools. The specific tools that will be appropriate in 3 to 8 year's time are currently unknown, but there will be growth in the use of Artificial Intelligence and Machine Learning in the tools.
- Ability to combine and integrate data from disparate sources. This may be achieved directly by the analytics tools or separate integrations may need to be built to support the tools.
- Democratisation of data analytics, moving to a managed self-service model where business specialists can perform their own data analytics rather than relying on a central reporting and analysis function. Ideally this would be on a unified data delivery and analytic platform to avoid dealing with multiple different tools and manually consolidating results.
- Providing analytics automation, removing the routine manual activities to make analysts more efficient and removing complexity to provide analytics capability to business SMEs rather than trained data specialists.
- Cater for exponential growth of data volumes and complexity by ensuring the systems are appropriately sized and licensed.

6. OPTIONS ANALYSIS❖

6.1 OPTIONS CONSIDERED AND ECONOMIC ANALYSIS

Table 4 lists the options considered, the outcome of the economic analysis for each option, and the option being proposed for endorsement in this Investment Evaluation Summary. Details of the NPV analysis are included in Appendix A1.

Table 4 - Options considered

No.	Option summary	Direct 5yr cost (\$m)	10yr NPV (\$m)	Preferred option (yes/no)	Reason for selection/rejection
0	Do nothing – do not implement the recommended data management and analytics tools and standards	■	■	No	Does nothing to help manage the increasingly complex data landscape and risks inappropriate decision making.
1	This option includes implementing a range of data management and analytics tools and standards and spreading the investment across the 5 years of the reset period.	■	■	Yes	Provides a cost effecting approach to managing data quality, availability and security as well as appropriate analytics to support business decision making.
2	This option includes the same range of initiatives as option 1, but front loads the investment in the early years of the period.	■	■	No	Inappropriate choices may be made in early years that don't account for evolving requirements and technology, it may be difficult to resource the accelerated activity.

6.1.1 OPTION 0: DO NOTHING

This option represents the position of not implementing any improved data management standards, procedures and tools, improving data integration or data analytics tools.

Table 5: Option 0 – Scenario Assessment

Criteria	Advantages	Disadvantages
1. Solution effectiveness		If this initiative does not progress, TasNetworks' decision making capability and exposes the organisation to risks associated with increasing volume and complexity of data.
2. Cost	No initial CAPEX cost to consider.	Inappropriate decision making based on inaccurate or missing data or insufficient analytical capability could incur significant cost.
3. Business impact		Inappropriate decision making could have enormous business impact, for example setting tariffs – this requires considerable historical data, coupled with predictive analytics.
4. Business strategic alignment		Does not support the strategies identified in sections 4.1 and 4.3.
5. IT strategic alignment		
6. Project complexity	N/A	N/A
7. Risk profile		See Appendix B – Risk Comparison
8. Compliance	N/A	N/A
9. Time	N/A	N/A

6.1.2 OPTION 1: IMPLEMENT INITIATIVES OVER FULL RESET PERIOD

This preferred option involves making appropriate investments in a range of tools for data management and analytics as well as data governance structures and spreading the investment across the 5 year reset period. More detail can be found in section 6.7 - Preferred option.

Table 6: Option 1 – Scenario Assessment

Criteria	Advantages	Disadvantages
1. Solution effectiveness	This option addresses the investment needs outlined in section 2.2 - Problem Definition by addressing the existing gaps through the establishment of a single enterprise analytics platform.	
2. Cost	The capital cost associated with this option is offset by the benefits achieved through better decision making and the reduced risk of costly mistakes. By spreading the investment across the full 5 years, the capital impact in any one year is minimised.	There is a capital cost associated with this option.
3. Business impact	This option will have a significant positive impact on the business by making available the data and tools they need to properly inform their decision making.	Frontloading the model could give more time to achieve benefits. If the timing is not tailored to business need there is a risk of additional tactical solutions being adopted
4. Business strategic alignment	This option supports the fulfilment of the strategy and performance objectives detailed in sections 4.1 and 4.3.	
5. IT strategic alignment	This option aligns with the IT strategy by ensuring the solution: <ul style="list-style-type: none"> • Accelerates and increases the impact of digital • Treats Data as an Asset • Prioritises Digital investments to maximise our returns • Ensures cyber security is covered across all avenues. 	
6. Project complexity	This initiative would be implemented as a collection of projects, each with fairly low complexity.	
7. Risk profile	See Appendix B – Risk Comparison.	
8. Compliance	Components will be selected to conform with regulatory and industry standards.	
9. Time	This initiative is intended to provide a range of measures that will be implemented over the course of the 2024-29 period.	

6.1.3 OPTION 2: IMPLEMENT INITIATIVES WITH WEIGHTED INVESTMENT IN EARLY YEARS

This preferred option involves making the same investments as in option 1, but weighting the investment to achieve as much as possible in the first 2 years.

This would satisfy a perceived business need for fast action. However, this approach is not recommended, primarily because the business need and associated requirements will continue to develop over the 5 year period, as will the technology solutions. A heavy investment in the early years may not select and implement the best solution to meet the long term need and increases the likelihood that remediation will be required in later years.

Table 7: Option 2 – Scenario Assessment

Criteria	Advantages	Disadvantages
1. Solution effectiveness	This option addresses the investment needs outlined in section 2.2 - Problem Definition by addressing the existing gaps through the establishment of a single enterprise reporting platform.	Inappropriate choices may be made in early years that don't account for evolving requirements and technology.
2. Cost	The capital cost associated with this option is offset by the benefits achieved through better decision making and the reduced risk of costly mistakes.	There is a capital cost associated with this option, weighted in the first 2 years, which may be more difficult to fund.
3. Business impact	This option will have a significant positive impact on the business by making available the data and tools they need to properly inform their decision making.	It could be difficult to resource program activities in the first 2 years.
4. Business strategic alignment	This option supports the fulfilment of the strategy and performance objectives detailed in sections 4.1 and 4.3.	
5. IT strategic alignment	This option aligns with the IT strategy by ensuring the solution: <ul style="list-style-type: none"> • Accelerates and increases the impact of digital • Treats Data as an Asset • Prioritises Digital investments to maximise our returns • Ensures cyber security is covered across all avenues. 	
6. Project complexity	This initiative would be implemented as a collection of projects, each with fairly low complexity.	
7. Risk profile	See Appendix B – Risk Comparison.	
8. Compliance	Components will be selected to conform with regulatory and industry standards.	
9. Time	This initiative is intended to provide a range of measures that will be implemented with a focus on 2024-5.	

6.1.4 SENSITIVITY ANALYSIS

N/A

6.2 OPTION EXPENDITURE PROFILES

The following tables show the expenditure profile for each investment option.

Option 0 – Do nothing					
Estimate (in nominal dollars) [REDACTED]					
Expenditure profile	FY25	FY26	FY27	FY28	FY29
Capex					
Opex	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Option 1 – Data management and analytics investment spread across reset period					
Estimate (in nominal dollars) [REDACTED]					
Expenditure profile	FY25	FY26	FY27	FY28	FY29
Capex	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Opex					

Option 2 – Implement initiatives with weighted investment in early years					
Estimate (in nominal dollars) [REDACTED]					
Expenditure profile	FY25	FY26	FY27	FY28	FY29
Capex	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Opex					

6.3 RISK MITIGATION

The matrix presented in Table 8 compares the options, showing how each assists TasNetworks in mitigating its key business risks (previously identified in section 4.3 “Risk objectives”).

Appendix B provides supporting details of the risk assessment outcomes presented in Table 8.

Table 8 - Risk matrix summary

Risk ID	Risk Category	Risk Drivers	Impact	Option 0 Gross risk	Option 1 Net risk	Option 2 Net risk
ITR-194	Business Continuity Managemnt.	Lack of data and/or inaccurate data or inadequate analysis capability may result in inappropriate business decisions.	Inappropriate business decisions could adversely impact on business continuity.	Medium	Low	Low

Risk ID	Risk Category	Risk Drivers	Impact	Option 0 Gross risk	Option 1 Net risk	Option 2 Net risk
ITR-196	Customer Focus	Incorrect data or analysis may result in decisions that adversely affect customers.	Potentially negative financial or other impact on our Customer and our Reputation.	Medium	Low	Low
ITR-197	Sustainable and Predictable Pricing	Incorrect data or analysis may result in decisions that adversely affect pricing.	Calculations of transmission and distribution pricing are dependent on accurate data and reliable analysis of that data. Failures or inaccuracies in either could result in inappropriate or unpredictable pricing.	Medium	Low	Low
ITR-200	Emerging Complexity of the NEM	The emerging complexity of the NEM means more data needs to be captured and more complex analysis needs to be performed to	Lack of proper analysis and reporting on available data or misleading analysis resulting from incorrect data could cause inappropriate business decisions to be made	Medium	Low	Low

Risk ID	Risk Category	Risk Drivers	Impact	Option 0 Gross risk	Option 1 Net risk	Option 2 Net risk
		inform appropriate business decisions.	resulting in non-conformance with NEM regulations.			

6.4 QUANTITATIVE RISK ANALYSIS

N/A

6.5 BENCHMARKING

N/A

6.6 EXPERT FINDINGS

N/A

6.7 PREFERRED OPTION

The preferred option involves making appropriate investments in a range of tools for data management and analytics as well as data governance structures. Specific components of the initiative will include:

- Establishing a **data management framework** and associated tools, including formalising or extending the following elements:
 - Data governance and lifecycle management
 - Quality management principles, processes and tools
 - Data operations processes and tools
 - Data architecture and models
 - Transformation / mapping to industry standard data models
 - Technical data management standards
 - Data lineage and tracing, metadata management
 - Security, privacy and access management rules and tools
 - Support for “Open Data”, published public or internal data interfaces/sources.
- Implementing / upgrading **data quality management tools** to ensure that data is “fit for purpose” and trusted by users in the context of existing business operations and analytics. Data Quality tools including workflow, roles, collaboration and processes (such as those for monitoring, reporting and remediating data quality issues). Increasingly they are incorporating AI and natural language processing to streamline the quality assessment/profiling stage and recommend remediation.
- Implementing / upgrading **data integration tools**. Satisfying the challenge of combining data from disparate sources and in a variety of formats. These tools will increasingly incorporate AI to identify linkages/matches across diverse data sets.
- Providing **additional or improved data analytics tools**. The specific tools that will be appropriate in 3 to 8 years’ time are currently unknown, but there will be growth in the use of Artificial Intelligence and Machine Learning in the tools. For example AI systems can

analyse images of equipment (e.g. from aerial photography) to identify faulty or damaged components.

- Upgrading **data storage and computation capabilities** to accommodate an exponential growth in data volumes.
- **Democratisation of data analytics**, properly supporting a managed self-service model where business specialists can perform their own data analytics rather than relying on a central reporting and analysis function.
- Establishing a **unified data delivery and analytic platform** to avoid dealing with multiple different tools and manually consolidating results. This will also allow for proper control of access to data and sharing of analytical insights.
- Establishing an **Analytics governance framework** – part of the broader data governance framework, but concentrating on analytics activities to promote collaboration and ensure affective use of available technologies.

A structured approach to Data Management and Analytics as indicted above is the best way to ensure the most effective use of the data assets and insights that will be of increasing value to TasNetworks from 2024 onwards.

Some of these initiatives cannot be specified in detail at present since the data analytics field is changing rapidly and so are the available data sources.

This approach strongly supports a range of strategic objectives as outlined in section 4.3 above.

It also provides mitigation for a number of corporate risks as identified in section 6.3 and Appendix B – Key Business Risk Comparison. This is principally on the basis that analytics supports good business decision making which in turn avoids risk. Conversely, if our data is not properly managed it becomes (more) unreliable and will lead to bad decision making.

7. INVESTMENT TIMING❖

This initiative is intended to provide a range of measures that will be implemented over the course of the 2024-29 period.

The investment in option 1 is spread fairly evenly across the 5 year period with a small additional cost in year 1. The investment in option 2 is weighted in the first 3 years but requires a similar investment in years 4 and 5 as option 1.

8. EXPECTED OUTCOMES AND BENEFITS

The key outcomes of the proposed initiatives will be:

- A well-structured and effective data management environment that:
 - Understands the data available to TasNetworks, including its value, meaning, structure and interrelationships
 - Provides the governance, procedures and tools to properly manage it
 - Ensures appropriate measures are in place to provide access while protecting security and privacy
 - Provides processes and tools to manage and improve the quality of the data.
- A suite of powerful analytics tools to meet business needs
 - Appropriate access for analysts embedded in business units

- Enhanced self service capability for end users potentially incorporating AI and natural language processing
- Rationalisation of multiple legacy and tactical analytics environment into a single source of truth.
- Robust integration services to support increased volume / frequency of data from diverse sources and in multiple formats
 - Integration of additional data sets into existing systems and interfaces.
- Appropriate infrastructure, including:
 - Storage of large volumes of on-site data
 - Fast data throughput for cloud access
 - Computing power to support the analytics activities.

The benefits to TasNetworks from the above outcomes will be better informed and more reliable business decision making. This is based on better understanding of what has happened in the past and why, together with new insights into what is likely to happen and how TasNetworks can steer desired outcomes.

9. ASSUMPTIONS ❖

ID	Assumption Description	Impact if incorrect
ITA-155	The need for data analytics and the data to support it continue to grow as at present and as predicted by Industry Analysts.	If there was a serious reduction in expected growth some of the proposed initiatives could be scaled back.
ITA-158	Without warehousing data, source systems will need to store and allow direct access to more data causing performance impacts	Option 0 costs may not be accurate.
ITA-159	Without data warehousing and analytics capabilities, Managers, Engineers will lose time extracting and compiling data	Option 0 costs may not be accurate.
ITA-160	Without maintenance warehousing may fail and cause us to be late compiling RIN data resulting in fines	Option 0 costs may not be accurate.

10. REGULATORY INVESTMENT TEST

N/A

11. RECOMMENDATION ❖

It is recommended that the preferred option (option 1) is approved and progressed as it best satisfies the customer and business needs.

APPENDIX A – ECONOMIC ANALYSIS

The assumptions used in the economic analysis are as follows:

- NPV analysis is carried out for a 10 year period from the start of the initiative.
- Weighted Average cost of Capital (WACC) of 2.79 per cent is used.

The results of the Economic Analysis are provided below:

<u>ANALYSIS OF OPTIONS</u>		Option 0	Option 1	Option 2
		Status Quo - Do Nothing	Spread program of work over 5 years	Front load more work in early years
CASHFLOW	flow			
Capital Expenditure	Cash outflow			
Operational Expenditure	Cash outflow			
Operational Cost savings	Cash Inflow			
Total Expenditure	Cash outflow			
Revenue	Cash Inflow			
Net Cashflow	Net cash			
CASHFLOW NPV				
PLUS NON CASH				
Non Cash Benefits	Non cash in			
Non Cash Costs	Non cash out			
Net Value	Net Value			
COST BENEFIT NPV				
RANKING		3	1	2

APPENDIX B – KEY BUSINESS RISK COMPARISON

The project options each have a different impact on key business risks. The table below provides a qualitative summary of the impacts of each option on key business risks, with consideration for the risk approach and risk management process outlined in TasNetworks' Risk Management Framework.

Risk ID	Risk Category	Risk	Option 0 – Do Nothing (untreated risk)			Option 1 - Implement initiatives across full 5 years					Option 2 - Implement initiatives with weighting in first 2 years			
			L kelihood	Consequence	Risk	Mitigation	Likelihood	Consequence	Risk	How does this option mitigate current situation risk?	L kelihood	Consequence	Risk	How does this option mitigate current situation risk?
ITR-194	Business Continuity Management	Lack of data and/or inaccurate data or inadequate analysis capability may result in inappropriate business decisions which impact business continuity.	Possible	Moderate	Medium	Unmitigated	Unlikely	Minor	Low	This option will support informed decision making, based on mature data management and analytics.	Unlikely	Minor	Low	This option will support informed decision making, based on mature data management and analytics.
ITR-196	Customer Focus	Incorrect data or analysis may result in decisions that adversely affect customers.	Possible	Moderate	Medium	Unmitigated	Unlikely	Minor	Low	This option will support informed decision making, based on mature data management and analytics.	Unlikely	Minor	Low	This option will support informed decision making, based on mature data management and analytics.
ITR-197	Sustainable and Predictable Pricing	Incorrect data or analysis may result in decisions that cause inappropriate or unpredictable pricing.	Possible	Moderate	Medium	Unmitigated	Unlikely	Minor	Low	This option will support informed decision making, based on mature data management and analytics.	Unlikely	Minor	Low	This option will support informed decision making, based on mature data management and analytics.
ITR-200	Emerging Complexity of the NEM	The emerging complexity of the NEM means more data needs to be captured and more complex analysis needs to be performed to avoid inappropriate business decisions being made resulting in non-conformance with NEM regulations.	Possible	Moderate	Medium	Unmitigated	Rare	Moderate	Low	This option will support informed decision making, based on mature data management and analytics.	Rare	Moderate	Low	This option will support informed decision making, based on mature data management and analytics.