GAAR Technology Program:

Information Management

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1 Document Background

1.1 Purpose of this document

The purpose of this document is to outline a business case for a proposed program of work that will form part of AusNet's Technology GAAR submission.

1.2 References

Document	Version	Author
AusNet Services FY19-FY23 Technology Plan	V1.0	AusNet Digital
2021 Gas Business Plan	V1.0	Joanne Soysa
GAAR Technology Strategy 2024-2028	V1.0	Ausnet Digital

1.3 Document History

Date	Version	Comment	Person
03/08/2021	V0.1	Document created	Shannon Shi
31/08/2021	V0.2	Sections and figures updated	Leo Saito
21/09/2021	V0.3	Reviewed	Mathew Abraham
22/09/2021	V0.4	Feedback actioned	Leo Saito
01/10/2021	V0.5	First Draft prepared for internal review	Mathew Abraham
01/04/2022	V0.6	Post review amendments	Mathew Abraham
01/06/2022	V0.7	Review for submission	Mathew Abraham

1.4 Approvals

Position
Technology Leadership Team

2 Executive summary

2.1 Program summary

The table below provides a summary of the program discussed in this brief. Additional information is provided following the table and throughout the brief.

Table 2-1 Summary table

<table>
<tr><td>Key objective(s) of the program</td><td colspan="6">The IM program will extend the information management (IM) platform, which will enable access to timely, accurate data across all core systems, assets, and processes. This program will enable more advanced data analytics and reporting to support better decision making across the Gas business.</td></tr>
<tr><td>Key benefits</td><td colspan="6">Applying analytics to the vast amounts of useful data that AusNet collects, offers an opportunity to:
Improve forecasting and customer usage/demand management to better meet changing customer needs and expectations
Enable efficient asset renewal and proactive network management to maintain network reliability and improve customer satisfaction
Monitor and maintain the network more effectively and prudently to proactively mitigate safety and operational risk
Support management of the asset investment portfolio through improved prediction of the timing and extent of problems with asset condition, such that assets can be repaired and replaced more cost-efficiently
Improve identification of leaks in the gas network to drive customer and operational benefits
Improve deployment planning for operational teams in managing the gas network
Flexible “as a service” platform, software and infrastructure provisioning will allow for simplified platform management and more efficient scaling in line with changing data growth requirements.
Simplify IM operations across the Gas business by enforcing a single data governance approach and eliminating non-standardised, manual data processes
Organising critical gas systems data and uplifting the foundations of its IM capability prepares AusNet to adapt to future industry trends and regulatory requirements.</td></tr>
<tr><td rowspan="2">Cost allocation</td><td colspan="2">Electricity Distribution</td><td>49%</td><td colspan="2">Electricity Transmission</td><td>30%</td></tr>
<tr><td colspan="2">Gas Distribution</td><td>21%</td><td colspan="2"></td><td></td></tr>
<tr><td rowspan="3">Program type</td><td colspan="5">Recurrent</td><td>☐</td></tr>
<tr><td colspan="5">Non-Recurrent</td><td>☒</td></tr>
<tr><td colspan="5">Client Devices</td><td>☐</td></tr>
<tr><td>Program timings</td><td colspan="2">Program duration:</td><td colspan="5">5 years</td></tr>
<tr><td>Expenditure forecast</td><td>($m)</td><td>FY24</td><td>FY25</td><td>FY26</td><td>FY27</td><td>FY28</td><td>Total</td></tr>
</table>

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	CAPEX	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	$13.16
	OPEX	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	$2.90
	Gas Distribution Cost	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	**$16.06**
	Total program cost	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	$39.71
Estimated life of system	The estimated life of the solutions deployed on-premises is 5 years with a refresh. Those solutions that are deployed as subscription services would be contracted for the term of the regulatory period. This program will cover the entire GAAR period from 2024-2028.						
Customer Engagement	This program was proposed (and approved) as part of AusNet's Electricity Distribution Price Reset (EDPR) and Transmission Revenue Review (TRR) submissions. This brief pertains to the Gas Access Arrangement (GAAR) allocation of these costs. We have undertaken significant stakeholder engagement. As part of the EDPR process, we held deep dive workshops with stakeholders on ICT. In that engagement, we described the importance and need for ICT expenditure to meet our customers' evolving needs and to support compliance with regulatory and legal obligations. We acknowledge the feedback received from both sessions and have taken it into consideration when proposing the most appropriate option for this business case. This brief has also taken into consideration: • The challenge we received from stakeholders as part of the GAAR engagement process to minimise discretionary IT spend where possible – a challenge consistent with the broader feedback we received on our capital investments. • Recent customer engagement studies conducted by AusNet, including the Energy Sentiments Survey (2021) and the AusNet Listening Report "Engaging Victorians on the Future of the Gas Networks" (2021).						

AusNet is continuing to work to improve outcomes for customers by using data to enhance decision making. This work is carried out in a context where there is pressure to bring enhancements to achieve two opposing goals, operating, and uplifting the network, and controlling expenditure and network charges for the customer. Many devices deployed across the network create valuable sources of data, which can be leveraged by the business to achieve these goals. This data can be analysed and mined for insights which allow AusNet to better monitor, manage, and control the network as well as optimise its operations.

A number of opportunities have been identified to improve insights into our Gas business with the speed, accuracy and responsiveness required to meet the evolving business and customer requirements for analytics. These include:

- Reducing manual processes for sourcing and analysing data
- Using standard patterns and methodologies to source data to avoid duplication

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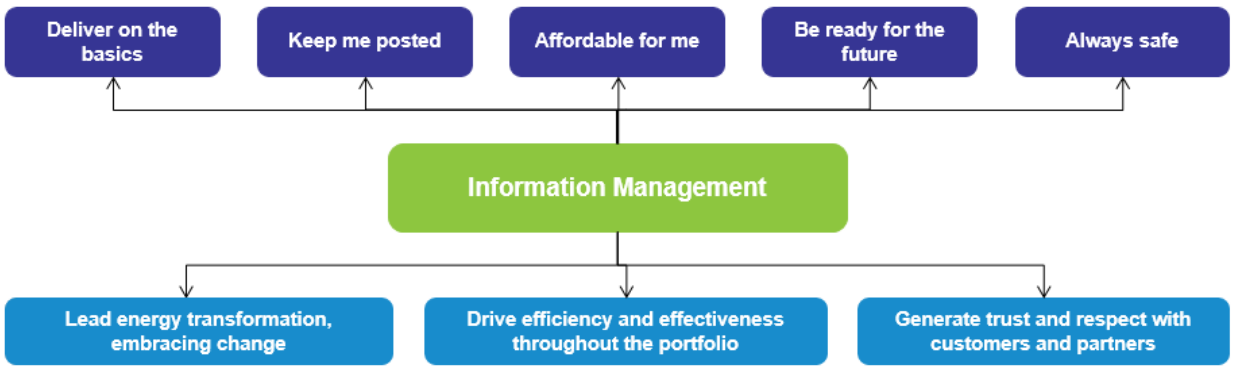
- Implementing quality governance and automating critical reporting to avoid manual effort to validate data
- Ensuring there is sufficient specialist experience and domain knowledge to acquire and analyse data
- Establishing a common, integrated representation of network, asset, and customer information, to improve AusNet's ability to proactively plan asset strategy and explore opportunities to improve customer service delivery.

This program of work will allow the Gas business to leverage the enterprise-wide IM platform, which was commissioned in 2019, through a cloud-based solution. The key benefits arising from this program include:

- Increased efficiency and fact-based decision making through integrated reporting, analytics, and self-service capabilities, allowing the business to augment and manage the gas network more effectively, limiting outages for customers
- Reduced operations cost with improved planning, monitoring and control, as well as increased availability of information, resulting in more effective network management and ultimately reducing network charges for customers
- Single source of truth, to provide an enterprise view of consistent trusted information across systems, allowing the business to rapidly respond to incidents on the network, improving the overall safety and reliability of the AusNet distribution network for customers
- Improved overall efficiency for information management by rationalising tools and technology, allowing the business to be more responsive to changes in customers' demands, expectations, and usage requirements.

This will begin to alleviate and remedy many of the current limitations on information management in the gas business at AusNet. The process of developing and executing the new IM platform will take many years and continue well into the forecast regulatory period FY2024-2028. The associated costs and specific initiatives within this program account for this and have been defined accordingly.

Figure 2-1 Summary of customer and business drivers of this program



Alignment with AER ICT expenditure assessment framework

In accordance with the framework outlined in the AER's Consultation paper – ICT Expenditure Assessment of May 2019, we have categorised this program as 63% non-recurrent expenditure, on the basis that it relates to the refresh of existing applications along with new investment in AusNet's information management infrastructure.

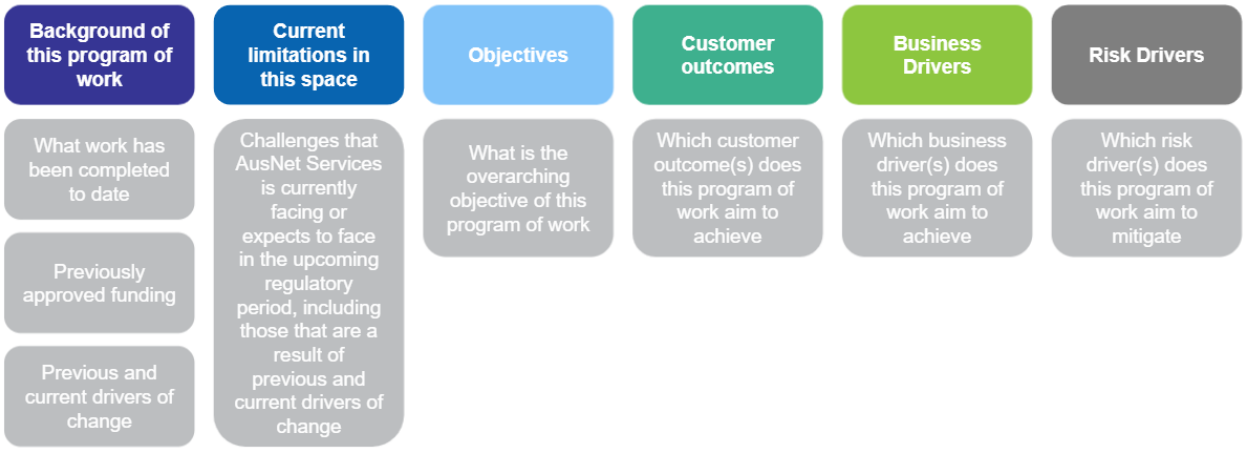
We have also undertaken NPV analysis in support of the project, as well as developed a detailed business case in support of the chosen option.

3 Context

AusNet continues to evaluate both existing capabilities and where prudent, find new ways to deploy technologies to address these challenges and harness new opportunities to reduce its costs and ensure the reliability and continuity of supply.

This program of work will bring together many disparate sources of data to a unified platform and perform advanced data analytics in order to generate insights which can be used to run the network more effectively in an increasingly complex environment. This more advanced information management platform will underpin a more proficient, resilient, and reliable supply for customers and more effective use of capital to maintain and manage the network.

Figure 3-1 Key areas of the context to be discussed



3.1 Background

AusNet faces increasing challenges as the importance of data to support business operations, strategic planning, and increased proactive decision-making. Insights and analysis of data is required to support investment decisions to better allocate capital and avoid the growth in costs, while not compromising on the quality of service we provide to our customers, or the safety of our network operations. Greater insights into the operation of our network will also allow us to work more effectively with our partners (e.g., field crews) and help ensure that the way we operate is more customer-centric, therefore uplifting customer outcomes.

In order to achieve these outcomes data must be consistently stored and readily accessible, allowing insights to be available to the business, and enhancing the ability to better monitor and manage the network to ensure the reliability and consistency of supply for customers. This is known as ‘information management (IM)’ and is essentially the collection, management, storage, and analysis of information from one or many disparate sources and the distribution of that information to one or more audiences, in a simplified, standardised format.

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At an enterprise level, information management at AusNet typically supports the business in meeting critical customer expectations by providing the underlying information and often the associated analytics required to perform the following critical activities, as well as to optimise them to operate at their peak efficiency:

Focus area	Impact of IM
Asset and maintenance management	The costs of remote-monitoring sensors and associated analytical systems continues to drop and there are opportunities for the business to use the data they provide to manage assets in increasingly productive ways. Advanced data analytics, using performance data and predictive models, helps AusNet to: • Prevent asset failures • Concentrate management efforts on critical assets • Make better decisions in asset planning and investments • Embed the valuable knowledge of specialists within the business Analytics and associated reports allow the business to gain greater visibility and control over operational risks and asset-management practices and to use these insights to improve network performance, improve customer outcomes and more effectively manage operations and maintenance expenditure.
Regulatory compliance for managing data and reporting on supply, customers, cost, safety, etc.	AusNet's operations, performance and the associated data underpinning regulatory compliance analytics and reporting is becoming more and more complex. It also means that regulatory reporting becomes an increasingly labour-intensive process, particularly given the current error-prone, manual reporting process. There is a vast array of different classifications of data, such as customer data, asset data, usage data, outage data, security information, financial data, and metrics, etc. Each are managed by different teams and disparate systems and vary widely in terms of size, shape, and frequency of change. With every new compliance requirement, the business needs to perform new analytics and reporting on specific subsets of data. The more effectively data is rationalised, to a standardised and readily accessible form, with self-service tools and analytics in place to proactively meet key regulatory compliance and reporting needs, the more accurately the business will be able to meet its reporting requirements. Information management and the associated analytics, improve both the accuracy of these reports and the effort required for their production.
Predictive analysis and reporting solutions for all relevant business units i.e., field workers, finance, network planning, maintenance planning, operation teams, scheduling for field crews	AusNet is gathering more data from across the business and must continue improving its ability to analyse this data, many examples of this are outlined above and, in the points below. This analysis in turn drives a deeper understanding of the business. As outlined above, these analytics drive improved accuracy in predicting equipment incidents, producing results that allow us to increase customer satisfaction, while more effectively managing operations and minimising expenditure growth. These tools can also be applied more widely across the business. Analytics can support: • Better scheduling and optimise the works being done by field workers in line with routes and maintenance requirements • Network augmentation by improving understanding of potential improvements • IM systems can provide structure for disparate support operations data, and analytics can compile and compare this information more

Focus area	Impact of IM
	easily, using predictive analytics to optimise business operations and performance across the company • Resource scheduling and executing workloads (both back office, field staff and contractors) by ensuring that service-level agreements (SLAs) and business deadlines are met. • Financial data and decision making by integrating internal financial information and operational data with external information to address critical business questions with ease, speed, and accuracy. Financial information is critical to shaping the direction of the business moving forward and ensuring prudent and efficient operations. Each critical area above is not only supported by information management and the associated analytics, but also has a suite of reporting which the business depends upon to interpret the outputs of these analytics, to monitor and manage the respective areas of the business.
Customer analytics and billing	Data analytics allows AusNet to understand customers and their gas use better. This allows the business to tailor services to meet customers' evolving needs and expectations. This data and associated analytics also allow AusNet to provide more accurate information to customers about planned outages, new connections, and repair work by field crews driving improved overall customer service and outcomes (outcomes that we know from our customer engagement that our customers want).

3.2 Current limitations

At an enterprise level the current information management landscape at AusNet provides analytics and reporting to support and underpin primary business functions however this is not utilised by the Gas business. Our current manual practices of extracting data from a variety of systems and attempting to analyse it, hinders the business from maximising its operating efficiency and ability to respond to changes in customers' demands, expectations, and usage requirements. Furthermore, the growing volume of data on the network expected to be captured by the solution proposed in the Gas Distribution Management brief and field mobility solutions in the Workforce Collaboration brief, will need to be underpinned by a robust information management solution, which current practices would need to expand to deliver.

The key limitations of current IM practices for Gas include:

Focus area	Limitation
Data Acquisition	• Critical network and business operations data is stored across multiple systems requiring a high level of manual work to extract and synthesise data for analysis.
Data Storage	• No clear view of what information is available, where it is stored, managed, and accessed, leading to loss of employee productivity and poor employee experience to perform critical data analysis.
Data Processing	• Limited automation (processes) for sourcing and cleansing data, and it is not integrated across systems and processes, limiting the ability to unlock value, and making complex analysis of multiple data sources challenging and time consuming. • Gas network data is represented at different levels of granularity across several systems and requires cumbersome data manipulation to prepare for analysis.

Focus area	Limitation
Data Consumption	• Insights and analytic outputs are limited to Excel and Word presentation, with no coherent solution or consistent approach, creating quality issues and limited ability to leverage past work. • There are fragmented skills, capabilities, and knowledge within the IM domain, which results in suboptimal reuse of information, driving inconsistency in modelling, and increasing the difficulty to drive insights for the business. • Existing tools and technology are not scalable. Current data management and processing technologies are rudimentary for the Gas business and will not be sufficient to support big data and predictive analytics on the scale required to be the utility of the future.
Data Quality	• Multiple disparate management reporting and decision support databases, storing variations of the truth. For the organisation to have confidence in information, the business must spend a significant amount of effort and time confirming the source of truth, before making decisions.

As outlined earlier, there are several programs of work which are currently underway at an enterprise level to establish an IM platform that can be leveraged by the Gas business to address the limitations described above.

3.3 Objective(s)

As outlined in Section 3.1, applying analytics to the vast amounts of useful data AusNet collects offers the business an opportunity to drive the following key benefits:

Opportunity	Customer and business outcomes
Maintain safety of the gas distribution network	Mitigate safety risk for customers and field workers operating on network assets such as pipes, pressure stations and valves, by proactively taking action to prevent incidents by analysing data about network asset conditions such as ruptures, corrosion, and leakages.
Uncover and understand customer usage outcomes	Identify and remedy shortfalls in gas services to maintain the reliability and security of supply to customers. Track operational performance and improvements based on customer satisfaction (CSAT) metrics.
Better forecast customer demand	Drive more targeted investment and upgrades of the network based on customer's needs, again maintaining the reliability and consistency of supply, whilst prudently upgrading the network in line with actual use requirements.
Manage constraints more effectively	Reduce customer down time by optimising planned outages through analytics. Minimising unplanned minutes off gas supply by tracking and analysing (USAIDI) and (USAIFI) metrics.
Monitor and maintain the network more effectively	Control expenditure and maintain prudent asset maintenance and renewal through network monitoring by concentrating management efforts on critical assets, avoid excess maintenance and premature asset replacements.
Improve compliance with regulatory requests	By simplifying, rationalising, and standardising both the underlying data and how it is consumed, the IM platform will have tools, analytics and in turn responsiveness to simplify the business' ability to meet key regulatory compliance and reporting needs.
Integrate customer, asset, and network information	Reduce risk of asset failure, leakages, outages, and inconsistent gas delivery, by leveraging connected datasets for a variety of strategic and operational use cases such as demand growth forecasting, pipeline flow

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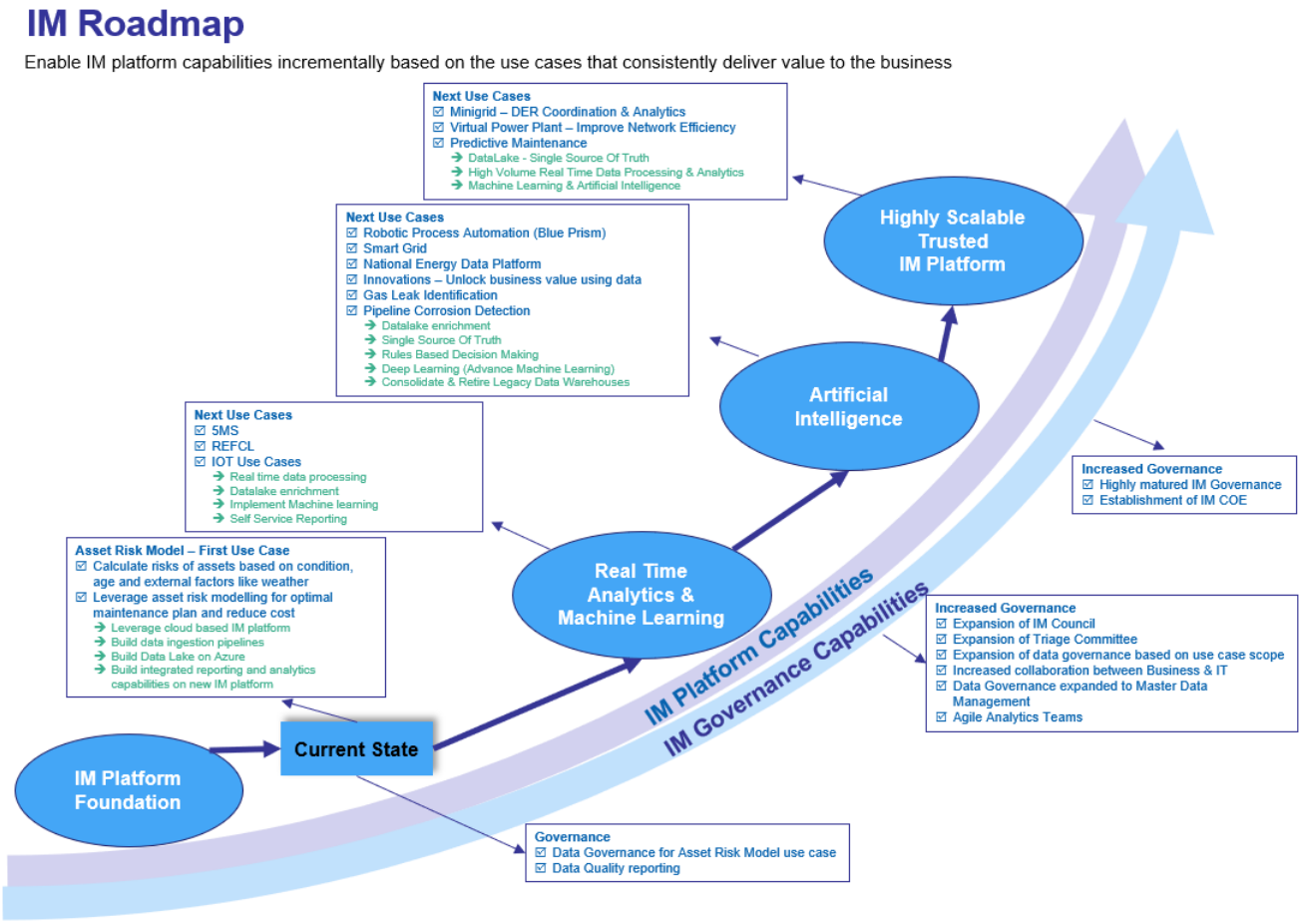
Opportunity	Customer and business outcomes
	studies, works management, asset management and asset investment planning.

The IM platform will enable access to timely, accurate data across critical systems, assets, processes, and support more advanced and standardised analytics and reporting. Existing IM practices in the Gas business are highly manual, require specialised skills, are hampered by tooling and data quality, and have limited ability to scale. This is a primary driver for the new revised IM platform detailed in option 3.

The business has developed a roadmap for the enterprise-wide IM platform. The roadmap below details several critical use cases for the IM platform, which the platform can support.



Note: this is a possible IM roadmap which will be delivered based on business needs

As outlined throughout this program brief, the business has been rolling out the new enterprise-wide IM platform. This program will continue this work and extend the IM platform as detailed within this document.

Based on the current IM roadmap and inflight projects, the business has made the following progress at the time of writing:

Focus area	Outcome by June 2022
Integrating data	The foundations of IM have commenced integrating and building analytical capability, as well as relevant tools and associated reports for a number of data sets. Data integration to the new IM platform will have

Focus area	Outcome by June 2022
	commenced for electricity but will be an ongoing process with Gas data sources to be added in the upcoming period.
Governance	The business will start to formalise data governance and create a framework for ongoing accountability for data sets as they are added and integrated from their original source to the IM platform. This work will continue with each new data set which is added into the IM platform and will be ongoing through the upcoming period.
Dashboards	The inflight projects in IM through to FY21 will build dashboards which will allow the business to interrogate and monitor many critical assets in near real time. This capability and these dashboards will be expanded to more assets and areas of the business in the forecast period, as defined in this project brief.

3.4 Customer outcomes

Through customer research carried out by AusNet, the following key customer values and priorities were identified:

- Deliver on the basics – Ensure reliability of services
- Keep customers informed – Keep customers posted and improve customer service
- Provide affordable services – Lower costs for customers
- Adapt to the future – Sustainability and the future supply of gas
- Operate safely – Make networks safer, regarding health, safety, and positive environmental impacts

This research has been further validated through the Customer Sentiments Survey and GAAR customer workshops. Additional information on each of these customer outcomes is provided in the overarching GAAR Strategy Document 2024 – 2028.

All expenditure programs identified and proposed by AusNet will have regard to the customer outcomes and can be directly linked to at least one of these five outcomes.

This program will ""**deliver on the basics**", as analytics will help AusNet better understand customer demand, allowing the business to better manage and optimise the network to ensure customers always have certainty of supply in line with their demand. It also aligns with "**keep me posted**" as analytics capabilities underpinned by the information management platform and associated tools, systems and data sets will enable AusNet to understand which customers more readily are impacted by network events. This in turn will allow the business to improve its keeping customers informed of the impact of changes to the network and provide an ability to notify customers affected by outages.

This program of work is also relevant to "**adapt to the future**", as with more advanced data analytics and AI capabilities, such as machine learning and cognitive approaches, AusNet will derive deep insights on business-critical data. This in turn will underscore improvements in the delivery of gas services by better enabling the business to understand the effectiveness of the network, the impact of asset investment decisions, and the implications that these decisions have on customer outcomes.

Furthermore, this program is "**affordable for me**" because the optimised information management platform will underpin insights and analytics used to operate and configure the network more

effectively, as well as optimise maintenance and asset replacement. This will ultimately drive efficiencies, reducing network charges for customers.

Lastly, this program is "**always safe**" as the standardisation of storage of data on network assets and operations ensures that relevant information will be more freely available to network controllers and field workers, allowing more rapid response to network incidents or hazards, such as pipe leakage and corrosion. Increased awareness of the network assets would reduce overall safety of the AusNet's Distribution network for customers and workers during gas fitting, construction, and operation work.

3.5 Business drivers

In the face of significant industry disruption resulting in a period of substantial uncertainty and increasing complexity across the industry, AusNet has selected key business drivers which set the direction for the business.

These business drivers are:

- Maintain current service performance
- Lead energy transformation, embracing change
- Drive effectiveness throughout the portfolio
- Generate trust and respect with customers and partners

To drive effectiveness throughout the portfolio, remaining top quartile in operating effectiveness in the industry and ensuring that prudent and sustainable network investment is always undertaken will be key considerations. AusNet's commitment to delivering valued services to customers will also contribute to generating trust with customers, as well as the maintenance of network safety in accordance with the Gas Safety Case. This will also help drive maintenance of current service performance.

All expenditure programs identified and proposed by AusNet will have regard to the business drivers and can be directly linked to at least one of these initiatives.

We consider that this program of work will be most relevant to "drive effectiveness throughout the portfolio", as it includes initiatives that bring disaggregated sources of customer data into an enterprise-wide integrated system. This allows AusNet to use information and data more efficiently from across the network, business, and external sources to drive effectiveness from its operations.

4 Options

4.1 Overview

This section provides an overview of a select number of options which may alleviate the current limitations set out in section 3.2. Each option represents a combination of initiatives within the overall program of work.

Table 4-1 Brief overview of the options

Brief overview of each of the options	
Option 1	Maintain current manual information management practices to extract, consolidate and analyse data, which results in sustaining: • A complex technology landscape, siloed data and information, inefficiencies and increasing running costs for information management in the gas business • Inability to obtain business efficiency and transformation benefits from the latest technology innovation.
Option 2	Extend strategic information management platform by ingesting data from all core Gas systems. Enable data and reporting capabilities to capitalise on diverse datasets captured from across the business, while reducing non-standardised manual work to acquire, process, analyse, and report data. Note that data governance, including data quality maintenance remains manual. This option also simplifies existing IM technology and tools landscape by streamlining it with the Electricity business. This involves: • Ingestion of data from key systems used by the Gas business, into the IM platform • Enablement of regulatory and compliance reporting, service performance reporting, and self-service reporting capabilities • Enablement of advanced data analytics capabilities in the IM platform • Additional manual effort to remedy data quality at the source systems
Option 3 (Recommended)	Extend strategic information management platform by ingesting data from all core Gas systems. This option extends IM platform capabilities in option 2, with centralised data governance tools and AI capabilities. This expanded capability will reduce manual work required to govern data, as well as capitalise on predictive analysis and recommendations from the diverse gas-related datasets available in the IM platform. This involves: • Ingestion of data from key systems used by the Gas business, into the IM platform • Enablement of regulatory and compliance reporting, service performance reporting, and self-service reporting capabilities • Enablement of advanced data analytics capabilities in the IM platform • Dedicated data quality and data governance toolset • AI/ML/data science capabilities to provide automated insights and decision making

4.2 Option #1 Maintain current practices

This option involves continuing AusNet current information management practices. This means only investing in specific functions where necessary to meet regulatory requirements. This will continue the existing limitations detailed in section 3.2, namely:

- Lack of data management, impacting business responsiveness, where data is sourced from systems, spreadsheets and documents with no standard patterns or methodologies and is duplicated with no single source of truth.
- Effort to deliver insights and analysis is increasingly costly and time consuming, as data is not integrated across systems and processes, limiting the ability to unlock value, with no clear view of where information is stored, managed, and accessed, leading to loss of employee productivity and poor employee experience. This will lead to the business managing multiple tools and technologies resulting in increased complexity and cost.
- Inability to monitor network data, misaligned customer and asset data, and asset data being manually collated from multiple systems into a single system.
- Fragmented skills, capabilities, and knowledge within the IM domain, which will continue to result in suboptimal reuse of information, driving inconsistency in modelling. For example, there is no standardised reporting between gas and electricity using the same tools.

The IM platform currently does not ingest any Gas business specific data. Foundational analytics, integrated data sources, accurate reporting, forecasting expense and trends at a granular level, usage monitoring, integrated long term demand forecasting, and regulatory reporting of assets and outages are difficult or not possible with current manual information management capabilities.

As the industry continues to evolve, more and more data will be produced from across the network and broader business operations. The existing information management practices, limitations and shortcomings outlined above, will only grow and place increasing pressure on scarce resources.

This option is therefore not recommended for the following key reasons:

- Sustains existing inefficiencies in data management and governance, preventing the business from making better use of data to inform network, asset, and customer related decisions
- Does not minimise the manual work required by staff to extract, validate, and synthesise data from various systems in order to use information effectively to support decisions
- Does not leverage the investment in the enterprise-wide IM platform
- Limited common, repeatable, and scalable standards and practices, which consequently leads to inefficient resource allocation
- Does not support the business in its ability to correlate data, identify patterns and trends, and gain insights into the impact of decisions on the network, assets, customers, and expenditure.

Alignment to objectives

We do not consider that this option achieves any of the intended objectives of this program of work, as shown in **Table 4-2** below.

Table 4-2 Objectives analysis of option 1

Objective		Comments
Data Acquisition	✗	• Data will continue to be stored across many disparate and unlinked systems, with increasing dependence on manual intervention as the number and complexity of data sources grow.

		• To prepare critical analysis, the business will require extensive manual effort, manually validating and preparing data, so that it is in a usable state.
Data Storage	✗	The business will not have a centralised and standardised place to store and manage data, leading to loss of employee productivity and poor employee experience to perform critical data analysis.
Data Processing	✗	Limited standardised tools for sourcing and cleansing data, which will limit the ability of the business to unlock value from the data. This will also make complex analysis of multiple data sources challenging and time consuming.
Data Consumption	✗	• Ongoing discrete analysis, with limited advanced tools, typically focused in excel and word presentation. • No consistent approach to sourcing and analysing data, creating quality issues and limited ability to leverage past work. • Limited ability for existing practices, tools, and technology to scale for future industry demand and disruptions.
Data Quality	✗	• Many different versions of the same information create no single source of truth, this then requires significant manual effort to prepare and validate data. • Limited accountability and data ownership, making decision making more complex and time consuming.

Costs

This option requires significantly less expenditure than options 2 and 3, as it will only maintain current systems and practices, with no growth in capacity or capability. Given the current limitations outlined above and throughout this document, despite resulting in a cost reduction, the disruption to business and inability to fully leverage the benefits of inflight projects, mean that the cost saving will result in a drop in productivity and inability to meet customer expectations, which is not palatable.

Table 4-3 Costs of option 1

($m)	FY24	FY25	FY26	FY27	FY28	Total
Capex	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	$3.32
Opex	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	$1.57
Gas Distribution cost	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	**$4.90**
Total program cost	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	$13.96

Benefits

The key benefit of this option is the lower capex required. This can be achieved by controlling expenditure through limited extensions or upgrades of existing practices. Although this option would result in a lower cost of maintenance and less management activity, that is required to adopt the IM platform, the significant risks, and limitations it places on the business' ability to operate effectively and efficiently as outlined in section 3.2, outweigh any lower capex spend.

Risks

There are several risks associated with the implementation of this particular option, as highlighted in the table below. Based on the consequence and likelihood of each risk, we have rated each of the individual risks blue, green, yellow, orange, or red (order of severity). See Attachment 1 – Risk level matrix for additional information on this rating system.

Table 4-4 Risks of option 1

	Risks	Consequence	Likelihood	Risk rating
R1.1	Poor business and asset information and data quality / data integrity	Level 4. Limited ability to utilise existing data to inform decision making	Almost Certain	A
R1.2	Inadequate capacity to cater for growth of volume of data and user data volume	Level 3. Increased operating cost due to time spent on mapping and consolidating data manually	Almost Certain	B
R1.3	Lack of real-time spatial and connectivity information	Level 3. Limited visibility of field crews' location and estimated completion	Almost Certain	B
R1.4	Unable to meet higher complex regulatory requirements, due to difficulty and complex process to acquire relevant information	Level 3. This risk is likely to add additional time to develop regulatory reporting, but existing practices and experience will inhibit complete failure to meet any obligation	Likely	B
R1.5	Not meeting customers' evolving needs and preferences	Level 3: Increased operating costs due to time spent on responding to customer communications	Likely	B

We consider that overall, this option is high risk.

Customer related drivers of expenditure

As discussed, five key customer outcomes have been identified through discussions with customers. The table below highlights how this option will achieve these outcomes. Where we consider that a customer outcome is not directly achievable by the option or irrelevant, 'N/A' is applied.

Table 4--5 Customer related drivers of option 1

Customer outcome	How this option achieves this
Deliver on the basics	N/A - Although this will maintain current practices which deliver some IM capability to the business, by maintaining current practices as data volumes increase, this will ultimately lead to IM at AusNet being insufficiently responsive to business or regulatory needs.
Keep me posted	N/A - The Gas business currently doesn't proactively report planned outages to its customers. Maintaining current practices

	will retain this status quo of unnotified outages and limited transparency.
Affordable for me	N/A - Maintaining current practices will be more affordable in the short term than extending the IM platform but its shortcomings will compound the Gas business' dependence on manual process and internal resources. In the long run it does not result in a more affordable IM solution, which cannot create savings to be passed on to customers. It also limits the business' ability to unlock value from its data and maximise the utility and maintenance of assets.
Be ready for the future	N/A – Doesn't achieve desired outcomes.
Always safe	N/A – Doesn't achieve desired outcomes.

Business related drivers of expenditure

As discussed in Section 3.5, there are four business drivers that AusNet has identified and is focussing on over the next regulatory period. The table below highlights how this option will input into the initiatives where relevant. Where we consider that a business driver is not directly relevant to the option, 'N/A' is applied.

Table 4-6 Business related drivers of option 1

Business drivers	How this option achieves this
Maintain current service performance	N/A – No uplift from existing capabilities
Lead energy transformation, embracing change	N/A – No uplift from existing capabilities
Drive effectiveness throughout the portfolio	N/A – No uplift from existing capabilities
Generate trust and respect with customers and partners	N/A – No uplift from existing capabilities

4.3 Option #2 – Leverage, extend and build upon existing data store

This option proposes to extend the IM foundations by ingesting data from all core, Gas operational and supporting systems into the strategic IM platform. The platform will enable all AusNet users in the Gas business to leverage contemporary IM capabilities, patterns and practices for data captured across the network and underpin improved strategic and operational decision making. An example of a strategic problem, which the IM platform may be used to solve is for a network planner to prioritise asset investments and plan for maintenance schedules, while an operational problem may entail informing the control room to coordinate safer field operations.

The IM platform is explained in detail in section 3.3 and will allow the business to forecast customer usage and demand to better target asset investments where customers need it most, utilise historical network operations data to improve network operations, better understand the specific impacts of future regulatory changes and support ongoing compliance, and optimise proactive and tailored customer communications.

Foundational data capabilities that this option will enable for the Gas business include reporting (regulatory, service performance, self-service) and advanced data analytics. It will help to reduce manual work associated with extracting and consolidating data for reporting and analysis, resulting in

cost savings to customers. This option will also support the standardisation of IM tooling and practices across the Gas business.
Improved IM capabilities will provide greater visibility and control over critical aspects of the business that ultimately influence performance metrics such asunder outage, impacting customer satisfaction (CSAT) and unaccounted for gas (UAFG) which may accumulate unnecessary expenditure to distribution network charges that are passed on to the customer.

This option involves:

- **Data Acquisition:** Ingest data from key systems used by the Gas business, into the IM platform. These systems include the ERP system, procurement system, revenue management and network billing system, service order management system, risk management system, SCADA system, field to office systems, meter data collection systems, meter data management systems, geospatial systems, distribution management systems and outage management systems.
- **Reporting:** Enables regulatory and compliance reporting, service performance reporting, and self-service reporting capabilities. This will give users the ability to generate standard reports from the data and create unique customised reports
- **Advanced Analytics:** Enables advanced data analytics capabilities in the IM platform
- **Operational Uplift:** Additional manual effort required to ensure quality of data at the source systems in the absence of a centralised data quality and governance toolset.

While this option is a step-change from the currently manual and error-prone IM practices in the Gas business, it does not solve all limitations and inefficiencies discussed in the limitations section (3.2).

This option is not recommended for the following key reasons:

- Significant manual processes are still needed to acquire additional data and ensure data quality at the source systems are remedied on an ongoing basis. This is particularly difficult without a dedicated data governance toolset given the Gas business' fragmented data and systems landscape
- Limited ability to inform strategic investments related to asset maintenance and investments
- Breaches the principle of prudence, as the lack of foundational data acquisition and data governance capabilities would require the Gas business to redirect resources to manual data processing instead of value-generating activities such as drawing insights to predict customer needs and prioritise asset investments.

Alignment to objectives

This option partially achieves the intended objectives of this program of work, as shown in **Table 4-2** below.

Table 4-7 Objectives analysis of option 2

Objective		Comments
Data Acquisition	✗	All gas system data will be ingested into the IM platform, but acquisition of additional data sources will require manual effort as this capability is not enabled.
Data Storage	✓	The gas business will have a centralised and standardised place to store and manage all gas related data leading to an uplift of employee productivity and better employee experience to perform critical data analysis.
Data Processing	✗	With no dedicated data quality and governance toolset, this initiative will not scale the ability to process core gas data, retaining inefficiencies and poor existing practices, namely:

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Objective		Comments
		• Limited standardised tools for sourcing and cleansing data, which will limit the ability of the business to unlock value from the data • This will also make complex analysis of multiple data sources time consuming and require significant upfront manual work.
Data Consumption	✔	The gas business will expand its ability to consume larger quantities of data from all core gas systems, which are ingested into the IM platform for analysis and reporting.
Data Quality	✘	• Requires significant manual effort to prepare and validate gas systems data • Limited accountability and data ownership, making decision making more complex and time consuming.

Costs

The cost of option 2 is $27.56m and includes implementing:

- Ingestion of data from key systems used by the Gas business, into the IM platform
- Enablement of regulatory and compliance reporting, service performance reporting, and self-service reporting capabilities
- Enablement of advanced data analytics capabilities in the IM platform
- Additional manual effort to ensure quality of data at the source systems

Table 4-8 Costs of option 2

($m)	FY24	FY25	FY26	FY27	FY28	Total
Capex	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	$16.91
Opex	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	$10.65
Gas Distribution cost	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	$27.56
Total program cost	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	$100.08

The platform involves a cloud-based solution, and we would expect the increased usage of this solution would result in an opex increase of approximately $120,000 per annum. Further, 2 FTE are required to manually correct data quality at source systems before data is ready to process and analyse in the IM platform, resulting in an opex increase of approximately $250,000 per annum from FY26.

Benefits

The efficiency and simplification on the new IM platform will free up more time for key resources to focus on the analysis and generation of insights versus the current pre-requisite process of manual data acquisition and data processing. The IM platform is a dynamic and cloud-based solution and will enable a number of capabilities and benefits:

- Centralised data stores, platform, software, and infrastructure as a service, which can be readily accessed, with elastic platform provisioning, which can scale in line with data growth requirements (as is prudent and efficient)

- Simplifying platform management such as back-up, storage capacity, processing, security, configuration, user access, availability
- Rapidly implement new dashboard, reports, and work areas, with the flexibility to set up analytics on a particular part of the network, use case or asset
- Organising critical gas systems data and uplifting the foundations of its IM capability helps prepare AusNet to adapt to future industry trends and regulatory requirements.

However, these benefits are limited to applying advanced data analytics and fails to reap the full benefits of an IM platform, which offers AI capabilities to automate the derivation of insights and pattern matching, which would need to be driven by specialised data analysts. The next option will explore these capabilities in more detail.

Risks

There are a number of risks associated with the implementation of this option, as highlighted in the table below. Based on the consequence and likelihood of each risk, we have rated each of the individual risks blue, green, yellow, orange, or red (order of severity). See Attachment 1 – Risk level matrix for additional information on this rating system.

Table 4-9 Risks of option 2

	Risks	Consequence	Likelihood	Risk rating
R2.1	Poor business and asset information and data quality / data integrity	Level 4. Limited ability to utilise existing data to inform decision making, this risk remains. Despite increased ability to capture growing volumes of data, this option does not solve the underlying quality issues outlined throughout the document	Possible	B
R2.2	Inadequate capacity to cater for growth of volume of data and user data volume	Level 3. Increased operating cost due to growing existing storage and processing capacity in line with data growth	Unlikely	D
R2.3	Lack of real-time spatial and connectivity information	Level 3. Limited visibility of field crews' location and estimated completion, as existing practices are ongoing, and the current limitations remain	Unlikely	D
R2.4	Unable to meet higher complex regulatory requirements, due to difficulty and complex process to acquire relevant information	Level 3. This risk is likely to add additional time to develop regulatory reporting, but existing practices and experience will inhibit complete failure to meet any obligation	Possible	C
R2.5	Not meeting customers' evolving needs and preferences	Level 3: Increased operating costs due to time spent on responding to customer communications	Likely	B

We consider that overall, this option is rated **medium risk**.

Customer related drivers of expenditure

As discussed, five key customer outcomes have been identified through discussions with customers. The table below highlights the how this option will achieve these outcomes. Where we consider that a customer outcome is not directly achievable by the option or irrelevant, 'N/A' is applied.

Table 4-10 Customer related drivers of option 2

Customer outcome	How this option achieves this
Deliver on the basics	This option will ensure that AusNet can manage and process asset, network, and customer data sources. These are required into the future to continue to provide more accurate insights to improve customer service delivery.
Keep me posted	By ensuring that AusNet can analyse data about day-to-day network operations, we will be able to better understand key maintenance and management processes i.e., leakage and their impact on customers. This in turn allows AusNet to notify affected customers sooner as well as provide more detailed information.
Affordable for me	Architecting a centralised enterprise information management platform will enable efficiencies through automating data management, processing, and analysis. Furthermore, reduction of duplicated data storage and more efficient data flow will reduce the cost of information management and analytics.
Adapt to the future	This option helps to ensure that we are well positioned to manage our gas data effectively and drive robust insights for future business and regulatory requirements.
Always safe	This option supports better customer outcomes by driving better insights on connected datasets integrating customer, network, and geospatial information.

Business related drivers of expenditure

As discussed in Section 3.5, there are four business drivers that AusNet has identified and is focussing on over the next regulatory period. The table below highlights how this option will input into the initiatives where relevant. Where we consider that a business driver is not directly relevant to the option, 'N/A' is applied.

Table 4--11 Business related drivers of option 2

Business drivers	How this option achieves this
Maintain current service performance	Refreshing or consolidating current applications and upgrading where prudent. Using advanced data analytics to help control expenditure and maintain prudent asset maintenance by concentrating management efforts on critical assets and avoiding excess maintenance.

Lead energy transformation, embracing change	This option will advance AusNet in embracing data driven decision making and advancements in cloud technology. This is a core competency of the Digital Utility.
Drive effectiveness throughout the portfolio	Cost reduction can be driven by proactively monitoring and operating network assets, ensuring upgrades are on a needs basis to increase capital productivity, saving on maintenance expenses Advanced data analytics tools will also support new opportunities to add automation to existing work practices increasing the efficiency of the workforce.
Generate trust and respect with customers and partners	Advanced data analytics will increase customer outcomes by providing an integrated and comprehensive view of asset management, network operations and customer data, allowing us to have insights into this data that are not currently available.

4.4 Option #3 Extend strategic information management platform (RECOMMENDED)

This option involves extending the Information Management platform, which integrates data from across the business, from both internal and external sources. This central repository of information will underpin critical decision making across the business. This will provide users with data, which is standardised and cleansed. It will also give the data context, identifying its source, lineage, purpose and how it is currently used and by whom. It will have self-serve capabilities and provide data relevant to each user's role and function. This will give users the ability to generate standard reports from the data and create unique customised reports. The platform will provide the capability for all AusNets' users to use common analytic tools and the platform to enable improved data driven decision making.

The IM platform is explained in detail in section 3.3 and will allow the business to forecast customer usage and demand better to target asset investments where customers need it most, monitor and maintain the network with increased efficiency and effectiveness, meet regulatory compliance and regulator requests with increased ease, and optimise proactive and timely customer communications.

This option involves:

- **Data Acquisition:** Ingest data from key systems used by the Gas business, into the IM platform. These systems include the ERP system, customer information system, procurement system, revenue management and network billing system, service order management system, risk management system, SCADA system, field to office systems, meter data collection systems, meter data management systems, geospatial systems, and outage management systems
- **Foundation Uplifts:** Enables data acquisition capabilities and data governance toolsets
- **Reporting:** Enables regulatory and compliance reporting, service performance reporting, and self-service reporting capabilities
- **Advanced Analytics:** Enables advanced data analytics capabilities in the IM platform
- **Artificial Intelligence:** Enables AI capabilities to automatically draw insights and recommendations from big data.

Like option 2, this option enables foundational data capabilities in the Gas business, including data acquisition, governance, and reporting (regulatory, service performance, self-service), as well as advanced data analytics. However, benefits from this option exceed option 2, as data governance and

data quality assurance are handled by the IM platform. This frees up resources, which were previously required and enables quicker turnaround from data acquisition to insight and decision making.

Artificial Intelligence capabilities can be leveraged to support important use-cases such as Asset Risk Modelling, Gas Leak Identification and Predictive Maintenance, using techniques like Machine Learning and Neural Networks. This builds on existing work conducted by the Electricity business which can be extended to Gas. These techniques will build on the strong foundation of good-quality data established by the activities described above.

This option is scalable given the platform-based service that can be expanded as necessary across AusNet's Gas business. This ensures that AusNet can respond to data access requirements from upcoming regulatory changes, such as the ACCC's Consumer Data Right[1], and can scale up its systems where necessary in response to future growth in data volumes.

Alignment to objectives

This option meets all critical objectives set out for this program of work as shown in **Table 4-12** below.

Table 4-12 Objectives analysis of option 3

Objective		Comments
Data Acquisition	✓	All gas system data will be ingested into the IM platform, but acquisition of additional data sources will require manual effort as this capability is not enabled.
Data Storage	✓	The gas business will have a centralised and standardised place to store and manage all gas related data leading to an uplift of employee productivity and better employee experience to perform critical data analysis.
Data Processing	✓	This option provides a dedicated data quality and governance toolset, streamlining IM operations across the Gas and Electricity businesses by enforcing a single data governance approach and eliminating non-standardised, manual data processes.
Data Consumption	✓	The gas business will expand its ability to consume larger quantities of data from all core gas systems, which are ingested into the IM platform for analysis and reporting.
Data Quality	✓	Gas systems data is cleansed and pre-processed automatically, ready for users of the IM platform to conduct analysis and reporting.

Costs

The cost of option 3 is $16.06m and includes implementing:

- Ingestion of data from key systems used by the Gas business, into the IM platform
- Enablement of regulatory and compliance reporting, service performance reporting, and self-service reporting capabilities
- Enablement of advanced data analytics capabilities in the IM platform
- Dedicated data quality and data governance toolsets
- AI capabilities to provide automated recommendations.

[1] ACCC Consumer Data Right https://www.cdr.gov.au/rollout

Table 4-13 Costs of option 3

($m)	FY24	FY25	FY26	FY27	FY28	Total
Capex	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	$13.16
Opex	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	$2.90
Gas distribution cost	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	**$16.06**
Total program cost	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	[C-I-C]	$39.71

The platform involves a cloud-based solution. During the regulatory period, we would expect the increased usage of this solution would result in an average step-change opex increase of approximately $280,000 from FY24 onwards.

Benefits

The efficiency and simplification on the new IM platform will free up more time for key resources to focus on the analysis and generation of insights versus the current pre-requisite process of manual data acquisition, data cleansing and data processing. The adoption of the IM platform and its associated capabilities as part of this option will achieve the following benefits:

- Centralised data stores, platform, software, infrastructure as a service, which can be freely accessed, with elastic platform provisioning, which can freely scale in line with data growth requirements (as is prudent and efficient)
- Simplifying platform management such as back-up, storage capacity, processing, security, configuration, user access, availability
- Rapidly implement new dashboard, reports, and work areas, with the flexibility to set up analytics on a particular part of the network, use case or asset
- Leverage advanced data analytics to identify patterns, trends and insights at the depth and scale that cannot be achieved manually
- Organising critical gas systems data and uplifting the foundations of its IM capability prepares AusNet to adapt to future industry trends and regulatory requirements
- Simplify IM operations across the business by enforcing a single data governance approach and eliminating non-standardised, manual data processes
- Automating data-driven insights and recommended future actions at scale, across strategic and operational decisions related to the gas network
- Defining AI models using techniques such as Machine Learning and Neural Networks which use the strong data foundation to provide automation to improve management of assets and operational processes. This will include:
    - Better prediction of the timing and extent of problems with asset condition, such that assets can be repaired and replaced more cost-efficiently, and better management of the asset investment portfolio.
    - Improved identification of leaks in the gas network, driving operational benefits.
    - Improved deployment planning for operational teams in managing the gas network

This option enables AusNet to reap the full benefits of the IM platform's data capabilities, to pass on the resultant savings from efficiency gains, and improved customer service delivery to customers.

Risks

There are risks associated with this option, as highlighted in the table below. Based on the consequence and likelihood of each risk, we have rated each of the individual risks blue, green, yellow, orange, or red (order of severity). See Attachment 1 – Risk level matrix for additional information on this rating system.

Table 4--14 Risks of option 3

	Risks	Consequence	Likelihood	Risk rating
R3.1	Poor business and asset information and data quality / data integrity	Level 4. Limited ability to utilise existing data to inform decision making, this risk remains. Despite increased ability to capture growing volumes of data, this option does not solve the underlying quality issues outlined throughout the document	Unlikely	C
R3.2	Inadequate capacity to cater for growth of volume of data and user data volume	Level 3. Increased operating cost due to growing existing storage and processing capacity in line with data growth	Unlikely	D
R3.3	Lack of real-time spatial and connectivity information	Level 3. Limited visibility of field crews' location and estimated completion, as existing practices are ongoing, and the current limitations remain	Unlikely	D
R3.4	Unable to meet higher complex regulatory requirements, due to difficulty and complex process to acquire relevant information	Level 3. This risk is likely to add additional time to develop regulatory reporting, but existing practices and experience will inhibit complete failure to meet any obligation	Unlikely	D
R3.5	Not meet customers' evolving need and preferences	Level 3: Increased operating costs due to time spent on responding to customer communications	Unlikely	D

We consider that overall, this option is **low risk**.

Customer related drivers of expenditure

As discussed in Section 3.4, five key customer outcomes have been identified through discussions with customers. The table below highlights the how this option will achieve these outcomes. Where we consider that a customer outcome is not directly achievable by the option or irrelevant, 'N/A' is applied.

Table 4--15 Customer related drivers of option 3

Customer outcome	How this option achieves this
Deliver on the basics	This option will ensure that AusNet can manage and process a more extensive range of data critical to gas processes. These are required into the future to continue to provide crucial and more accurate data to improve customer service delivery.
Keep me posted	By ensuring that AusNet can handle the data about day-to-day network operations, we will be able to better understand the running of the gas network and/or maintenance processes and any relevant impacts on customers. This in turn allows AusNet to notify affected customers sooner as well as provide more detailed information.
Affordable for me	Architecting a centralised enterprise information management platform will enable efficiencies through automating data management, processing, and analysis. Furthermore, reduction of duplicated data storage and more efficient data flow will reduce costs of information management and analytics.
Adapt to the future	This option helps to ensure that we are well positioned to manage our gas data effectively and drive robust insights for future business and regulatory requirements.
Always safe	This option supports better customer outcomes by driving better insights on connected datasets integrating customer, network, and geospatial information. Furthermore, artificial intelligence capabilities may help to prioritise at-risk network assets for repair or maintenance, ensuring field workers and customers are not exposed to safety risks.

This option has **high alignment** to the customer drivers.

Business related drivers of expenditure

As discussed in Section 3.5, there are four business drivers that AusNet has identified and is focussing on over the next regulatory period. The table below highlights how this option will input into the initiatives where relevant. Where we consider that a business driver is not directly relevant to the option, 'N/A' is applied.

Table 4-16 Business related drivers of option 3

Business drivers	How this option achieves this
Maintain current service performance	• Refreshing or consolidating data sources and upgrading where prudent. Using advanced data analytics and artificial intelligence to control expenditure and maintain prudent asset maintenance by concentrating management efforts on critical assets and avoiding excess maintenance.
Lead energy transformation, embracing change	• This option will advance AusNet in embracing data driven decision making and advancements in cloud technology. This is a core competency of the Digital Utility.

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Drive effectiveness throughout the portfolio	• Cost reduction can be driven by proactively monitoring and operating network assets, ensuring upgrades are on a risk determined needs basis to increase capital productivity, saving on maintenance expenses • Advanced data analytics tools will also support new opportunities to add automation to existing work practices increasing the efficiency of the workforce.
Generate trust and respect with customers and partners	• Advanced data analytics will increase reliability by preventing outages through more accurate estimates of when to replace failing equipment. • Artificial intelligence can assist in identifying and prioritising network asset repair and replacement programs, ensuring consistent and reliable service delivery of gas to all customers.

This option has **high alignment** to the business drivers.

5 Assessment and recommended option

5.1 Assessment of the options

To identify a recommended option for this program of work, we have selected a number of criteria to assess each of the options. We consider that these criteria represent a comprehensive view of each option, in achieving AusNet's' business and customer objectives as well as requirements of the AER in ensuring that any expenditure is both prudent and efficient.

The table below summarises our assessment of each of the options against the criteria.

Table 5-1 Summary table of the assessment of the options

	Option 1	Option 2	Option 3
Alignment to objectives	Does not achieve objectives	Partially achieves objectives	Aligned with program objectives
Costs	$4.9M	$27.57M	$16.06M
Benefits	Does not support business requirements	The solution is architecturally designed to enable business benefits	The solution is architecturally designed to enable business benefits
Overall risk rating	High	Medium	Low
Alignment to customer related drivers of expenditure	No alignment	High alignment	High alignment
Alignment to business related drivers of expenditure	Low alignment	Medium alignment	High alignment

Based on this assessment, Option 3 is the recommended option. This is because:

- Option 1 creates a risk to business operations, as it will struggle to maintain the required levels of service and responsiveness through an inability to analyse data and obtain the insights required to make more informed decisions
- Option 2 does not represent prudent investment to achieve the outcomes sought, as it only partially achieves the program objectives and requires significant manual effort to prepare and process data acquired from all gas systems, to reap the benefits of the IM platform's capabilities
- Option 3 delivers the business' requirement for more advanced data analytics and information management now and into the future, enabling the business to be responsive to change and optimise the network and operations in line with customer expectations, as set out in sections 3.3 – 3.5.

Furthermore, this option is the lowest risk of the three options, aligns to all five of the customer drivers and all four of the business drivers.

NPV analysis

AusNet has undertaken NPV analysis for each program option to examine the cost effectiveness and value of each option for its non-recurrent programs of work.

As this program includes 63% non-recurrent expenditure, **Error! Reference source not found.**, below shows the NPV analysis for this program, further demonstrating the cost effectiveness of Option 3, the recommended option.

Table 5--2 NPV analysis ($FY21m)

	Costs (NPV)	Benefit (NPV)	Net benefit (NPV)
Option 1	$ 2.70	$ 0.00	-$2.70
Option 2	$ 15.17	$10.24	-$4.93
Option 3	$ 8.96	$12.99	$4.03

We have identified benefits in three categories for this program:

- Asset planning benefits associated with reducing risk of increasing future asset maintenance and replacement costs by detecting and predicting asset failure
- Operational benefits associated with reducing time spent on information management operations and data governance, as well as reducing the risk of poor data quality producing misleading insights that may inform ineffective operational decisions
- Reporting benefits associated with reducing time spent on regular and ad-hoc reporting.

We consider that as Option 1 continues business-as-usual work, there should be no additional quantifiable benefits captured by our NPV model. We consider that Option 2 will result in total annualised benefits of $2.3 million and Option 3; $3.5 million across FY24-28.

Asset planning benefits are associated with minimising the possibility of incurring a future cost in the network, due to asset damage or failures, or better informing asset strategy. For example, cathodic protection unit data can be ingested into the IM platform and analysed to determine the risk of corrosion damage, and the need to mitigate increased asset maintenance or replacement costs. Insights into gas distribution mains leakages can be generated to inform more targeted asset investments, reducing future cost of asset maintenance and replacement. Artificial intelligence capabilities can better detect gas leakages and pipe corrosion based on patterns in the asset condition and pipeline pressure, such that assets can be proactively repaired and replaced, optimising overall asset maintenance cost.

Operational benefits are associated with the increased productivity savings gained through the IM platform and its associated cloud services automating the majority of the data acquisition and processing of data for analysis, reporting and modelling. It is also expected that a centralised data governance tool will help to reduce the time to locate and gain access to a spectrum of gas data on the IM platform. The automated cleansing and removal of dirty data, enabled by the data governance tool, will reduce the risk of reporting misleading insights, and consequently improve operational effectiveness. We also consider that there are additional employee productivity savings related to broader information management and employees' increased ability to find and manage gas data.

Reporting benefits are associated with a reduction in manual effort required to source, cleanse, and wrangle data to generate both ad-hoc reports and regular reports for internal stakeholders or as part of the regulatory reporting process.

Based on our NPV analysis, Option 3 has a positive NPV and therefore is our recommended option.

5.2 Recommended option

Based on our analysis, Option 3 is the recommended option for this program of work. This option extends the strategic information management platform for all core gas system data, which ensures connected data-sets residing in a single platform will derive insights and better reporting to meet business, customer, and regulatory requirements.

6 Attachment 1 – Risk level matrix

The figure below shows the risk level matrix to which we have assessed each of risks within the options. Risks of highest concern are rated red, whereas those of lowest concern are rated blue.

Figure 6-1

Likelihood	Consequence 1	2	3	4	5
Almost Certain	C	C	B	A	A
Likely	D	C	B	B	A
Possible	E	D	C	B	A
Unlikely	E	D	D	C	B
Rare	E	E	D	C	C

Consequence Rating	
5	Catastrophic
4	Major
3	Moderate
2	Minor
1	Insignificant

Overall Risk Rating	
A	Extreme
B	High
C	Medium
D	Low
E	Very Low