



Jemena Gas Networks (NSW) Ltd

Investment Brief Enterprise Systems Lifecycle



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Glossary

| | |
|---------------------------|---|
| 2020-25 regulatory period | The period covering 1 July 2020 to 30 June 2025 |
| Current regulatory period | The period covering 1 July 2015 to 30 June 2020 |
| ERP | Enterprise resource planning |
| ICT | Information and Communications Technology |
| IS-U | SAP Module “Industry Specific – Utilities” |
| JGN | Jemena Gas Networks (NSW) Ltd |
| RYxx | Regulatory year covering the 12 months to 30 June of year 20xx. For example, RY20 covers 1 July 2019 to 30 June 2020. |

1. Enterprise Systems Lifecycle

| | |
|---------------------|---|
| Introduction | <p>Jemena provides a shared Enterprise Systems environment to enable Jemena Gas Networks (NSW) Ltd (JGN) to perform various Customer, Financial and Health & Safety functions.</p> |
| Objective | <p>The objective of this investment is to mitigate against the disruption of business service and associated impacts JGN's services and customers by updating billing exception and enquiry functions, and proactively managing lifecycle risks associated with Jemena's enterprise resource planning (ERP) and Industry Specific for Utilities (IS-U) information systems, with elements of these systems reaching an unacceptable level of support risk at various times during the 2020-2025 regulatory period.</p> <p>These projects are not linked to a potential migration of ERP or ISU functionality to a new S4 platform in the latter half of the coming regulatory period. They involve separate modules and within-system maintenance activities.</p> |
| Background | <p>The systems included in this investment brief are used to deliver core financial, metering and billing, human capital and asset management operations necessary for the efficient operation and planning of our network. The robustness and accuracy of information (and therefore JGN's ERP and IS-U systems) is crucial in allowing JGN to continue delivering safe and efficient distribution services to customers.</p> <p>The modules in the ERP and IS-U systems have a limited operational life and will eventually require upgrade or replacement to ensure they are maintained within support and continue to provide services as expected by our customers and to meet JGN's regulatory obligations.</p> <p>Jemena's shared IT applications are subject to regular assessment as to whether they remain fit for purpose as measured against a range of criteria including performance, security, cost effectiveness, serviceability, end-of-life timeframes and overall risk. Jemena also makes decisions to replace these assets by considering the optimum components and time for upgrade or replacement based on past experience and serviceability of the components and interdependent systems and processes. The guidelines to making a prudent assessment are described in the Technology Plan under the section on IT Asset Lifecycle Management.</p> |
| Customer Importance | <p>ERP and IS-U play a critical role in Jemena's ability to deliver safe, secure, reliable and affordable services to our customers. Throughout our engagement with them, customers outlined that they expect us to maintain our current services throughout the 2020-25 regulatory period.</p> <p>To enable us to maintain our current service levels, our systems which process financial, metering and billing, human capital and asset management operations must continue to be reliable, secure and meet other performance requirements of Jemena's asset management and network operations teams, our contractors and other external parties such as regulators and other stakeholders.</p> |
| Strategic Approach | <p>The strategic approach is to continue the rationalisation and consolidation of enterprise applications to the maximum extent possible and this remains true for both ERP and IS-U application instances. This strategy of consolidation is working to ensure efficient expenditure and reduce complexity of IT systems.</p> <p>Jemena intends to use the opportunities when life-cycling the systems and modules to simplify them wherever possible to prepare them for any potential transition to cloud based options in the future.</p> <p>This strategy of consolidation will continue to drive Jemena's life-cycle management approach for ERP and IS-U to achieve more than simply a reduction in cost and risk, but also to deliver enhanced future capabilities such as increased resilience, digital customer engagement, analytics and automation opportunities.</p> |

¹Options

To mitigate the risks associated with unsupported platforms and to ensure JGN can meet customer expectations - that JGN continues to provide safe, reliable and efficient services – JGN has assessed a series of options to determine the best way to deliver on its objective of managing lifecycle risks of platform and processing systems. These options include:

1. **Managed with risk**
2. **Maintain level of support**
3. **Rearchitecting and replacement**

Option 1: Manage with risk

Description

Systems would not be updated or refreshed. This will result in a significant risk to JGN’s ability to operate its network safely, reliably and efficiently. Whilst JGN could attempt to put in place manual mitigations such as:

- isolation of systems to contain unsupported products which might pose a cybersecurity challenge
- minimise use of the systems and switch to alternative options to reduce the need to engage vendor support
- develop additional custom functionality outside the application to achieve the required capability,

all require significant resources to achieve with little assurance that our efforts would be successful, whilst also introducing business and process inefficiencies.

Costs

This option does not align with Jemena’s Information Technology Plan under the section on IT Asset Lifecycle Management nor is it consistent with industry based best practice. In particular, when support for security patches is removed it does not comply with the recommendation under the ASD’s Essential 8 mitigations states that: *“Applications that are no longer supported by vendors with patches or updates for security vulnerabilities are updated or replaced with vendor-supported versions”*.

As a result, no costings have been developed for additional operational support resulting from the manage with risk approach.

Risks

This approach presents too high a risk to the business, would compromise JGN’s ability to continue to deliver distribution services and comply with regulatory requirements. It would require significant new business resources and is outside the strategic investment plans as outlined in the IT Technology Plan.

Benefits

There are no additional benefits associated with this option.

NPV Analysis

Not applicable.

Summary

Option 1 aims to maintain the existing systems at low cost, but it comes with unacceptable business risk.

¹ The assessment of SAP maintenance is outside of the scope of this investment brief, however, it is included in the *IT SAP business case*. The assessment of SAP maintenance in the *IT SAP business case* relates to all SAP maintenance activities.

Option 2: Maintain level of support

Description

This approach involves following the established technology upgrade path of each system and module set out below to the most recent supported versions to avoid operating them outside vendor support windows. JGN intends to use the opportunities when life-cycling the systems and modules to simplify them wherever possible to prepare them for the potential transition to Cloud based options in the future. However, JGN expects to use the same software as is currently in place and maintaining a broadly similar IT architecture which leverages our inherent expertise and capabilities with existing systems through to the end of the 2020-25 regulatory period.

Direct Unescalated Costs (mid-year \$2018)

| \$2018 | RY21 | RY22 | RY23 | RY24 | RY25 |
|---|----------------|----------------|----------------|----------------|----------------|
| Billing Exception & Enquiry Optimisation | | 236,808 | 236,808 | | |
| Budgeting & Planning Migration (to Analytic Cloud) | | | 90,770 | | |
| Environment, Health & Safety Module Lifecycle Upgrade | 181,541 | | | | |
| ERP Desktop Client Upgrades Lifecycle | 34,383 | 34,383 | 34,383 | 34,383 | 34,383 |
| SuccessFactors Lifecycle Integration Testing | 34,383 | 51,574 | 34,383 | 34,383 | 34,383 |
| Treasury System Lifecycle Integration Testing | 34,383 | 34,383 | 34,383 | 34,383 | 34,383 |
| Total Recurrent | 284,689 | 357,147 | 430,726 | 103,148 | 103,148 |

The cost of these projects of \$1.28m has been calculated using JGN’s standardised IT Project Estimation Tool as described in the Technology Plan under the section on Forecasting Method.

The scope and the basis of the cost estimates for each project are:

1. Billing Exception & Enquiry Optimisation (ITGG04) - Update the Customer Billing Exception & Enquiry system for residential and high-rise sites, to improve data validation checking and processing to reduce implausible bills, estimated readings and exception handling. The cost estimate is based on experience where JGN has had to maintain and test the billing modules. JGN assesses that this is a small project that will take up to 9 months to implement over 2 regulatory years and is of significant complexity.
2. Budgeting & Planning Migration (to Analytic Cloud) (ITSD15) - Migrate Jemena’s current budgeting and planning mechanism across to a new platform aligned with Jemena’s core financial platform. The existing system is restricted and inefficient and lacks an in-depth analytic capability resulting in restriction in fine-tuning our budgeting and planning capability. The cost estimate is based on the expected low complexity involved in adopting the new cloud-based solution and tying it in to the financial systems. Jemena also does not expect a need to materially customise this solution. Based on this, Jemena assesses that this is a small level project that will take less than 6 months to implement and is of medium complexity.

3. Environment, Health & Safety Module Lifecycle Upgrade (ITSD47) – This is lifecycle maintenance to the module that enables reporting and management of hazards, incidents, near misses and catering for health & safety, environment audits & inspections. This module is required to ensure Operational Health & Safety and regulatory compliance and maintaining it on a supported version is good practice. The cost estimate is based on experience of the complexity and effort involved in deploying and maintaining new versions of this module in the past. Based on this, Jemena assesses that this is a small to medium level project that will take less than 6 months to implement and is of medium complexity.
4. ERP Desktop Client Upgrades Lifecycle (ITSD49) – The life-cycle upgrade of SAP desktop client application to access SAP ERP / ISU (Industry Solutions for Utilities). This project covers interoperability of desktop Operating System, associated applications and security patches. It is a regular process that covers the rollout of new client software to all of JGN's laptops and desktops and is required regardless of which version of SAP is being used or whether it is on-premise or in the Cloud. The key risk associated with not upgrading is the inability to potentially access the SAP core and/or various SAP functions, as a result Jemena may no longer be able to operate various core business functions within the ERP and IS-U. The cost estimate is based on experience performing this rollout which is often done in conjunction with other activities for timing reasons. Based on this, Jemena assesses that this is a very-small level project that will take less than 3 months to implement and is of low complexity which occurs annually.
5. SuccessFactors Lifecycle Integration Testing (ITSD65) - Regular cloud to on-premise integration maintenance and testing of SuccessFactors (a Human Resource Information & Management System) and on-premise ERP HR & Payroll modules. Regular updates are made to the Cloud environment by the vendor and Jemena needs to test that interfaces are still working as expected and remediate them or by installing an updated adaptor from the vendor where required. It should be noted that the SuccessFactors Cloud system is a separate environment to the ERP and this integration testing would be required regardless of the core HR and Payroll modules that were being employed. The cost estimates are based on experience in recently deploying and maintaining this system. Based on this, Jemena assesses that this is a very-small level project that will take less than 3 months to implement and is of low complexity which occurs twice in RY22 and annually in every other year.
6. Treasury System Lifecycle Integration Testing (ITSD66) - Regular Cloud to on-premise integration maintenance and testing of Treasury Management System and ERP, noting that the treasury system is not a product from SAP and this integration is unrelated to which financial modules are being employed. The cost estimates are based on experience in deploying and maintaining this system. Based on this, Jemena assesses that this is a very-small level project that will take less than 3 months to implement and is of low complexity which occurs annually.

Risks

There are no material risks for this option.

Conforming capital expenditure

Rule 79 (1)(a) of the National Gas Rules states:

The capital expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.

Undertaking these projects, the proposed capital expenditure is consistent with the NGR Rule 79 as it is:

- Prudent - The expenditure is necessary to maintain the safety of the services and maintain the integrity of services to customers and personnel and is of a nature that a prudent service

provider would incur. It is the best practice approach to maintaining the ability to continue providing financial, management and regulatory reports.

- Efficient - The option selected is the most cost-effective long-term option that meets the necessary operational requirements in order to meet the compliance with legislative, regulatory obligations and Australian Standards.
- Consistent with accepted and good industry practice. In addition, it is consistent with Jemena's Risk Management Manual and AS2885.

The project is also consistent with rule 79(2)(c), because it is necessary to:

- Maintain and improve the safety of services (79(2)(c)(i)) – Lifecycle upgrades are required to enable the continued reporting and management of hazards, incidents (including property damage, personal injury), near misses and other, related health & safety matters.
- Maintain the integrity of service (79(2)(c)(ii)) – As set out in the project scopes above. For example, if the Customer Billing Exception & Enquiry system is not upgraded it is likely that JGN will not be able to maintain current service levels to customers by minimising implausible bills and estimated readings by the end of the 2020-25 regulatory period.
- Comply with a regulatory obligation (79(2)(c)(iii)) - Systems covered by this investment brief are required to comply with regulatory obligations including:
 - a) Environment audits & inspections
 - b) Workplace health & safety regulations
 - c) Financial obligations (such as tax, GST).

Benefits

There are no direct, quantifiable benefits for this option. This will enable Jemena to maintain the systems to an acceptable level lessening exposure to an increased risk profile. Option 2 will enable JGN to maintain the continued reporting and management safety related matters, and other reporting services, without the need for significant resources associated with likely manual work arounds and the need to introduce business and process inefficiencies.

NPV Analysis

The Net Present Cost of this option is \$-1.11m

See attachment “NPV for Enterprise Systems Lifecycle Investment Brief” – NPV Calc|Option 2.

Summary

Option 2 is expected to:

- Reduce implementation risk given the upgrade to existing systems does not involve the installation of new technologies across all of the projects and require minimal business process change.
- Ensure Jemena's shared systems remain current, reliable, secure and fit for purpose.
- Represent the most cost effective and risk mitigating option.

Option 3 Rearchitect and Replace

Description

A market review would be conducted prior to the current systems being end-of-life to identify alternate technology solutions to replace existing ERP and IS-U systems, potentially resulting in the use of different applications. Additional risk needs to be managed around data conversion, process & change management, integration and testing. A competitive tender process would also need to occur to secure a fit for purpose application suite.

Costs

Given the expected investment to completely replace the full ERP suite would be orders of magnitude higher than option 2, this approach has not been fully costed.

| | <p>Conforming capital expenditure As per option 2.</p> <p>Risks A full rearchitected and replacement of the environment is highly risky and may result in cost overruns.</p> <p>Benefits JGN estimates that the benefits of this option are comparable to option 2.</p> <p>NPV Analysis N/A.</p> <p>Summary Option 3 aims to maintain the existing capability but at substantial cost and risk.</p> | | | | | | | | | | | | | | | | |
|--------------------------------------|--|-------------------|----------------------|-------------------|----------------------|----------|-----|-------------|-----|----------|----------|-----|-----|----------|----------------------|---------|-----|
| Options Summary | <p>The table below summarises the quantitative and qualitative differences between the analysed options.</p> <table border="1"> <thead> <tr> <th></th> <th>NPV \$2018</th> <th>Qualitative Risks</th> <th>Qualitative Benefits</th> </tr> </thead> <tbody> <tr> <td>Option 1</td> <td>\$0</td> <td>Medium/High</td> <td>Low</td> </tr> <tr> <td>Option 2</td> <td>\$-1.11m</td> <td>Low</td> <td>Low</td> </tr> <tr> <td>Option 3</td> <td>Expected over \$-50m</td> <td>Extreme</td> <td>Low</td> </tr> </tbody> </table> <p>JGN selects its appropriate preferred option by considering the direct differences between the options as expressed in the NPV analysis and indirect or qualitative differences in risks and benefits.</p> | | NPV \$2018 | Qualitative Risks | Qualitative Benefits | Option 1 | \$0 | Medium/High | Low | Option 2 | \$-1.11m | Low | Low | Option 3 | Expected over \$-50m | Extreme | Low |
| | NPV \$2018 | Qualitative Risks | Qualitative Benefits | | | | | | | | | | | | | | |
| Option 1 | \$0 | Medium/High | Low | | | | | | | | | | | | | | |
| Option 2 | \$-1.11m | Low | Low | | | | | | | | | | | | | | |
| Option 3 | Expected over \$-50m | Extreme | Low | | | | | | | | | | | | | | |
| What We Are Recommending | <p>Option 2 is the preferred option. This option is expected to maintain the systems in secure, reliable and supportable operations throughout the regulatory period.</p> | | | | | | | | | | | | | | | | |
| Relationship to ICT Capital Forecast | <p>The preferred option for this business case is contained in the ICT investment plan as recurrent projects with IDs ITGG04, ITSD15, ITSD47, ITSD49, ITSD65 & ITSD66.</p> | | | | | | | | | | | | | | | | |