Investment Evaluation Summary (IES)

Project Details:

Project Name:	*Outage Management System Upgrade*
Project Id:	IT.CST.27
Thread:	Information Technology
CAPEX / OPEX:	CAPEX
Scope Type:	C
Service Classification:	Standard Control
Work Category Code:	ITC
Work Category Description:	IT & Communications
Record Point ID:	R0000150785
Preferred Option Description:	The preferred option is to upgrade Outage Management System periodically but not exceeding 3 years.

	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27
Estimate ($)		■			■			■		
Total ($) 2017-2019	■									
Total ($) 2017-2027	■									

Governance:

	IES Section 1		IES Section 2	
Business Unit Review:	■	17/06/2015	■	17/06/2015
Thread Endorsed:	■	18/05/2015	■	18/05/2015
Project Approver:				

Document Details:

Version Number:	1.0

Section 1 (Gated Investment Step 1)

1.   Background

The outage management system is at the heart of operations to monitor and manage the electrical distribution network. At TasNetworks and previously Aurora Energy, ███████ has been used as the outage management system since 2006.

The outage management system is the primary system for recording customers who wish to report faults and issues with the electrical distribution network. The outage management system continues to manage outage events by analysing and grouping related customer calls to predict the true outage footprint based on configurable logic. It displays the outage locations on an interactive map, in order to assign, dispatch and route appropriate supply restoration crews to the correct location to restore power as safely and efficiently as possible.

Regular vendor updates are required to ensure that TasNetworks maintains a healthy environment with a supported release.

1.1   Investment Need

Regular investment is required to ensure that TasNetworks has a supported release of its outage management system so business processes are able to be conducted as compliantly, efficiently and effectively as possible.

Having a supported release will ensure:

- The software remains fully supported by the vendor.

- TasNetworks gets access to road map improvements that come part of the base product and may value add to TasNetworks efficiency and effectiveness.

- The code should lead to:

    o Overall better product performance.

    o Increased security.

    o Increased opportunities to interface with other products that support the business.

1.2   Customer Needs or Impact

Indirectly, the users of the Tasmanian distribution network, i.e. our customers, will be impacted by how compliantly, efficiently and effective our market systems operate.

1.3   Regulatory Considerations

N/A

2.   Project Objectives

The objective of this initiative is to ensure that TasNetworks has appropriately supported outage management system.

3.   Strategic Alignment

3.1   Business Objectives

The following table highlights how the initiative will assist in achieving TasNetworks corporate vision.

Strategic Goal	How this initiative will address the strategic goals
"we understand our customers by making them central to all we do"	• Without a reliable mechanism to monitor outages and the impact of outages, ██████████████████████████ • Without a reliable mechanism to calculate the impact of outages, TasNetworks will not be able to ████████████████████████████████
"we enable our people to deliver value"	• Without a reliable mechanism to monitor outages and the impact of outages, TasNetworks will not be able to ██████████████████████████
"we care for our assets, delivering safe and reliable network services while transforming our business"	• Without a reliable mechanism to monitor outages and the impact of outages, TasNetworks will not be able to ██████████████████

3.2   Business Initiative Alignment

By allowing timely and accurate reporting of outages this initiative is expected to further 'TasNetworks Strategy on a Page' aims of:

- Customer net promoter score.
- Voice of the customer program.

4.   Current Risk Evaluation

This chapter details the risk of 'Do Nothing'.

The TasNetworks Risk Framework details the level of risk the business finds acceptable in each category (Safety, Environment, Financial, Regulatory, Legal and Compliance, Customers, Assets, Reputation and People).

This initiative addresses customer risks, of which TasNetworks has ██████████

The outage management system is a business critical application that needs to be maintained in order to reduce risk of failure. ██████████████████████ ████████████████

4.1   Risk Matrix

TasNetworks business risks are analysed utilising the corporate risk matrix, as outlined in TasNetworks Risk Management Framework.

Relevant strategic business risk factors that apply are follows:

Risk #	Risk Category	Risk	Impact	Likelihood	Consequence	Risk Rating
IT-044	Customer	█████	Ability to affect timely restoration of outages severely compromised resulting in lengthy, untrackable impacts on customers.	Possible	Major	High

Section 1 Approvals (Gated Investment Step 1)

Business Unit Review:	████	**Date**	17/06/2015	
IT Project Initiator:	█████	**Date**	18/05/2015	
IT Thread Approved:	█████	**Date**	18/05/2015	
Manager (Network projects) or Group/Business Manager (Non-network projects):		**Date**		
[Send this signed and endorsed Summary to the Capital Works Program Coordinator.]				

Actions			
CWP Project Manager commenced initiation:		Assigned CW Project Manager:	
PI notified project initiation commenced:		Actioned by:	

Section 2 (Gated Investment Step 2)

5.   Preferred option

The preferred option is to upgrade the outage management system periodically but not exceeding 3 years.

This option has been selected because it has best alignment with the investment need whilst:

- Minimising the cost.

- Minimising the negative business impacts and maximising the positive business impacts.

- Maximising the strategic alignment.

- Maximising the IT strategic alignment[1].

- Minimising the project complexity.

- Minimising the risk to the organisation.

5.1   Scope

It is anticipated that in 2018 TasNetworks will need to update its outage management system software to the most recent supported version.

For 2018, this means that TasNetworks' current outage management system at that time will be upgraded to the latest supported version in a 'Like for Like' upgrade (this may mean a few intermediate upgrades are skipped). ▇▇▇▇▇▇ will upgrade the COTS software, associated configuration and existing customisations. Workflows and functions will remain the same as the solution currently deployed unless the behaviour has changed in the new packaged software version.

High level implementation activities

The items considered to be in scope are:

- Installation and test of latest outage management system software.   There will be a large emphasis on regression testing as the product is heavily customised and

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[1] This is a test against criteria including:
- Solutions will leverage the expertise and conformity of vendor products designed for NEM market interfaces.
- Solutions are designed for TasNetworks work practices and work processes to be as efficient and effective as possible without compromise.
- Solutions are maintainable and supported.
- Solutions are 'fit for purpose'.
- Alignment with current IT infrastructure.
- Alignment with other IT roadmap initiatives.

configured to suit TasNetworks business processes. Any future releases will need to ensure that required customisations and configurations are not lost/broken.

- Evaluation of changed features in the outage management system.

- Review of 'As Is' business process in-context of upgrade and re-engineering of the 'To Be' process if necessary especially to minimise customisation.

- Installation of the latest software into the production environment.

- Potential training in use of the latest software version and new processes where relevant, including creation/update of all documentation (administrative or end user).

5.2   Expected outcomes and benefits

The outcomes and benefits are considered from a TasNetworks' perspective and from an external stakeholder perspective, in this case the customer and retailer.

Outcomes and benefits have also been segregated into tangible (i.e. measureable) and intangible (not measureable). Tangible benefits will be used as part of the NPV calculations in chapter 6.

TasNetworks' perspective	**Tangible benefits**	
	Benefit	**Benefit**
	With the implementation of this initiative, it has been assumed that efficiencies introduced and manual workarounds prevented by each release, have the potential to provid ███████ of benefit	████

Intangible benefits

TasNetworks will have access to a supported and current outage management tool.

This will have many intangible benefits including:

- TasNetworks gets access to road map improvements that come part of the base product and may value add to TasNetworks efficiency and effectiveness.

- The latest code should lead to:

  o Overall better product performance.

  o Increased security.

  o Increased opportunities to interface with other products that support the business.

- More frequent updates could bring new features to the business on a faster schedule, which might improve our ability to effect timely restoration of outages.

- It will minimise the likelihood of high level of scrutiny during market audits as a result of market non-compliance.

	- The ability to deliver accurate data in a timely manner.
	
	- Increase employee confidence in market systems, leading to a reduction in stress, frustration, overtime, retention issues of employees.
	
	- Decrease the likelihood of human error.
	
	- Employees will feel more valued.
	
	- Inefficiencies would be reduced.
	
	- Reduced reliance of working outside of systems and processes
	
	- Reduces the reliance on existing trained resources who understand defects and workarounds.
	
	- Adds value to our assets by enabling reliable services.
	
	- As part of this initiative it is also the intention to target the following issues identified from the TasNetworks application health check conducted in early 2015:
	
	   o [BHA66] – There is an opportunity to make the outage management system more robust during storms in how jobs are managed and linked together to be closed off.
	
	   o [BHA67] – There are some issues in the outage management system which results in slightly incorrect data.

Customer's perspective	Outages will continue to be restored in a timely manner. This will help TasNetworks' ability to maintain valuable relationships with retailers and customers where TasNetworks can be trusted to deliver.

5.3   Regulatory Test

N/A

6.   Options Analysis

Three options have been considered as described in the following chapter:

- Option 0 - Do Nothing.

- Option 1 - upgrade the outage management system periodically but not exceeding 3 years (preferred option).

- Option 2 – replace the outage management system every year / every new version.

Each option is commented with regard to the following criteria:

- Solution effectiveness. Solution effectiveness is tested against the 'Investment Need' (detailed in chapter titled 'Investment Need'). In simple terms, does the option achieve the project objectives?

- Cost.

- Business impact – the selected option will consider the level of change to TasNetworks environment (including during project implementation and post implementation).

- Business Strategic alignment – does the option fulfil the business objectives and current business initiatives (detailed in chapter titled 'Strategic Alignment').

- IT strategic alignment.

- Project complexity – solutions will not be un-necessarily complex. Complexity introduces risk through combination of resource requirements, increased change etc.

- Risk profile – solutions will be risk adverse.

- Ability to achieve compliance – solutions will be fully compliant with all regulatory requirements and applicable industry standards.

- Time – ability to implement within deadline. Solutions will be implemented within a suitable timeframe to ensure compliance (where relevant), minimise disruption to the business and reduce the likelihood of project requirements becoming dated.

6.1   Option Summary

Option 0 – Do Nothing

The option of 'Do Nothing' assesses the scenario where this initiative is not approved.

The 'Do Nothing' option will eventually require something to be done. If system versions are not maintained, TasNetworks systems would become non-compliant, out of date and lose support leading to increased cost and regulatory risks. TasNetworks will need manual workarounds for various processes. These workarounds will have a cost and will have a negative business impact.

Criteria	Advantages	Disadvantages
Solution effectiveness	N/A	N/A
Cost	No initial CAPEX cost to consider. However, as described under disadvantages there will be a cost!	TasNetworks will lose support. The outage management system may partially or fully fail requiring manual workarounds or replacement with alternate product.
Business impact		TasNetworks may need manual workarounds.
Business strategic alignment		The business objective *'we understand our customers by making them central to all we do'* will not be fulfilled due to potential revenue loss and unpredictable pricing as a result of unexpected application replacement or manual workarounds. Outage

		management will not be easily identified and reconciled leading to wide spread customer dissatisfaction. Charter payments and other incentive scheme payments will dramatically increase.
		The business objective, *'enable our people to deliver value'* will not be fulfilled due to potential negative business impacts or applications failing.
		The business objectives, *'we care for our assets, delivering safe and reliable network services while transforming our business'* will not be fulfilled due to issues with compliancy, and risk.
IT strategic alignment	N/A	N/A
Project complexity	N/A	N/A
Risk to the business		See chapter titled 'Current Risk Evaluation'
Ability to achieve compliance		TasNetworks systems would become non-compliant.
Time – ability to implement within a deadline	N/A	N/A

Option 1 – upgrade the outage management system periodically but not exceeding three years.

As this is the preferred option, the scope has already been covered in detail in the chapter titled 'Preferred Option'.

Criteria	Advantages	Disadvantages
Solution effectiveness	Software will remain supported.	
Cost	This option has a lower up front cost compared with option 2 as it enables the business to 'skip' intermediary updates and thus implement fewer update projects.	Compared with option 2, there is a possibility of an increased cost of break-fix support to the business.

Business impact	With regard to scheduled implementation, because there are fewer upgrades, the business will be impacted less compared with option 2.	The business will not get access to new application features when they are made available and could possibly be missing opportunities for taking advantage of new features that could improve the business efficiency and effectiveness. Compared with option 2, there is a possibility IT staff are required to spend a greater proportion of their time resolving issues leading to an increase in unscheduled support.
Business strategic alignment	It will fulfil the business objectives of *'we understand our customers by making them central to all we do'*, *'we care for our assets, delivering safe and reliable network services while transforming our business'* detailed in the chapter titled 'Business Objectives'. It will align with the business initiatives detailed in the chapter titled 'Business Initiative Alignment'.	
IT strategic alignment	This option will align with the IT strategy, specifically the outage management system: • Is designed to suit TasNetworks work practices and work processes so as to be as efficient and effective as possible without compromise. • Will be maintainable and supported. • Will align with current	There is an increased risk of failure or security incidents. Bugs and security gaps will not be fixed in a timely manner which means that the application is not as secure by design which may result in the outage management system not being fit for purpose.

	IT infrastructure. • Will align with other IT road map initiatives.	
Project complexity	Because this option only requires upgrades at the end of supported life, then it assessed as having lower complexity compared with option 2.	
Risk to the business		There is an increased risk of failure or security incident. Bugs and security gaps will not be fixed in a timely manner which means that the outage management system is not as secure by design.
Ability to achieve compliance	The outage management system has been selected because of its conformance with regulatory and industry standards. An upgrade will not be delayed if it is going to affect compliance.	
Time – ability to implement within a deadline	Because this option only requires upgrades at the end of supported life, there will be fewer scheduled upgrades so it will have less impact with regard to implementation.	There is an increased risk of failure or security incident leading to unscheduled changes that need to be addressed at short notice.

Option 2 – Upgrade the outage management system every year / every new version.

This option involves upgrading the outage management system to each major and required minor version soon after release.

Criteria	Advantages	Disadvantages
Solution effectiveness	Software will remain supported.	
Cost	Compared with option 1, there will be reduced break fix	This option has a greater up front cost compared with

	support.	option 2.
Business impact	The business will get access to new application features when they are made available that could improve the business efficiency and effectiveness.	With regard to implementation there will be more scheduled upgrades and therefore overall more impost on IT and the business to deploy and test.
Business strategic alignment	It will fulfil the business objectives of *'we understand our customers by making them central to all we do'*, *'we care for our assets, delivering safe and reliable network services while transforming our business'* detailed in the chapter titled 'Business Objectives'. It will align with the business initiatives detailed in the chapter titled 'Business Initiative Alignment'.	
IT strategic alignment	This option will align with the IT strategy, specifically applications: • Are designed to suit TasNetworks work practices and work processes so as to be as efficient and effective as possible without compromise. • Will be maintainable and supported. • Will be fit for purpose. • Will align with current IT infrastructure. • Will align with other IT road map initiatives.	

Project complexity		This option is assessed as having higher complexity compared with option 1 because of the increase in the number of upgrade events.
Risk to the business	This option adds less risk compared with option 1.	
Ability to achieve compliance	TasNetworks applications and infrastructure have been selected because of their conformance with regulatory and industry standards.	
Time – ability to implement within a deadline	Compared with option 1, there is less of a chance of unscheduled changes that need to be scheduled at short notice.	Because of the increase in the number of scheduled upgrade events, there will be more timeline squeeze.

6.2   Summary of Drivers

The following table compares the options presented with regard to the criteria assessed in the previous chapter.

Criteria	Option 0	Option 1	Option 2
Solution effectiveness	N/A	Green	Green
Cost	Amber	Green	Amber
Business impacts	Amber	Amber	Amber
Business strategic alignment	Amber	Green	Green
IT strategic alignment	N/A	Amber	Green
Project complexity	N/A	Green	Amber
Risk profile	Red	Amber	Green
Ability to achieve compliance	Red	Green	Green
Time – ability to implement within a deadline	N/A	Green	Amber

Key			
Solution effectiveness	Addresses most requirements	Addresses some requirements	Addresses few requirements
Cost	Low	Medium	High
Business Impact	Low	Medium	High
Business strategic alignment	Good alignment	Partial alignment	Poor alignment
IT strategic alignment	Good alignment	Partial alignment	Poor alignment
Project complexity	Low	Medium	High
Risk profile	Low	Medium	High
Ability to achieve compliance	Easy	Moderate	Hard
Time - ability to implement within a deadline	Easy	Moderate	Hard

6.3 Summary of Costs

The following costs are the estimated capital expenditure for each of the options for the Distribution Determination 2017-2019 period.

Option	Total Costs ($)
0 – Do Nothing	No Capital Expenditure
███████	███████████████████
███████	███████████████████

6.4 Preferred Option Cost Breakdown

	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27
Estimate ($)		███			███			███		
Total ($) 2017-2019	███									
Total ($) 2017-2027	███									

6.5 Summary of Risk

The preferred option addresses customer risks, as analysed utilising the corporate risk matrix, as outlined in TasNetworks Risk Management Framework.

Risk Category	Risk	Impact	Mitigation	Risk Rating
Customer	████████████	Ability to affect timely restoration of outages severely compromised resulting in lengthy, untraceable impacts on customers.	Initiative will maintain effective outage management solution	Medium

6.6   Economic analysis

The NPV Calculations below are not inclusive of the potential benefits of each of the options. Although they have the potential to provide many operational efficiencies, the benefits were difficult to quantify with any large degree of certainty, hence the reason they were omitted from the calculations.

Option No.	Option description	NPV	Reason got selection/rejection
0	Do Nothing	$0	No benefits
1	Upgrade every three years	-$2,598,923	Greatest benefits
2	Upgrade annually	-$4,500,659	Greater cost for marginal benefit

6.6.1   Quantitative Risk Analysis

N/A

6.6.2   Benchmarking

N/A

6.6.3   Expert findings

N/A

6.6.4   Assumptions

ITA-114	The cost of the alternative option for IT.CST.27, which is to upgrade the outage management system annually, i ▮▮▮▮▮ per upgrade.
ITA-115	More frequent updates to the outage management system could bring new features to the business on a faster schedule, which might improve our ability to affect timely restoration of outages. However this benefit is not quantifiable.
ITA-116	Upgrading the outage management system application will improve the product health and reduce the risk of unsupportable incidents, however these are largely intangible benefits. It has been assumed that efficiencies introduced and manual workarounds prevented by each release, have the potential to provide ▮▮▮▮▮▮▮▮▮ of benefit.

Section 2 Approvals (Gated Investment Step 2)

Business Unit Review:	████████	Date	17/06/2015
IT Project Initiator:	████████	Date	18/05/2015
IT Thread Approved:	████████	Date	18/05/2015
Manager (Network projects) or Group/Business Manager (Non-network projects):		Date	
[Send this signed and endorsed Summary to the Capital Works Program Coordinator.]			

Project Initiator:		Date:	
Project Manager:		Date:	

Actions			
Submitted for CIRT review:		Actioned by:	
CIRT outcome:			