

Investment Evaluation Summary (IES)

Project Details:

Project Name:	<i>Meter Reading Handheld Device Renewal</i>									
Project Id:	IT.WSD.06									
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:	R0000131042									
Preferred Option Description:	The preferred option is to remain with the current hardware vendor and upgrade all handheld computer devices in the fleet at the end of their current useful life.									
	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:	■		■	
Thread Endorsed:	■	18/05/2015	■	18/05/2015
Project Approver:				

Document Details:

Version Number:	1.0
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Section 1 (Gated Investment Step 1)

1. Background

TasNetworks utilises a fleet of handheld [REDACTED] computer devices to capture meter reading data out in the field. There are [REDACTED] handheld devices state-wide, 4 multi-docking stations and 37 single-docking stations¹.

The vendor [REDACTED] and history has indicated that the handheld devices have a seven year life expectancy. As the device fleet was previously replaced in [REDACTED] they are due to be replaced in 2018/2019. At this point in time [REDACTED] handheld devices have already started to fail.

It has been assumed that that the penetration of smart meters throughout the network will not be of a high-enough volume to warrant making do with what is left of the current devices or implementing short term workarounds.

[REDACTED] handheld devices (and the supporting [REDACTED] application) will still be needed beyond 2018/2019 for several years.

This initiative is required to replace, test and deploy new handheld devices to our environment, as well as any supporting equipment (e.g. car kits, docking stations, holsters).

1.1 Investment Need

The vendor [REDACTED] has indicated that the [REDACTED] handheld devices have a seven year life expectancy. The devices were previously replaced in 2011/2012 and therefore due to be replaced in 2018/2019. At this point in time the meter reading handheld devices have already started to fail.

'Meter Readers' require functional and supported hardware to ensure they are able to support the 'meter to cash' process. This process directly contributes to the critical revenue-making activities of TasNetworks.

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 effectively our market systems operate.

1.3 Regulatory Considerations

Without a timely flow of meter data TasNetworks will fail its MDP SLA and compliance requirements.

¹ As of May 2015.

2. Project Objectives

The objective of this project is to provide 'Meter Readers' with a supported handheld meter reading device beyond 2018/19.

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"	<ul style="list-style-type: none">[REDACTED]
"we enable our people to deliver value"	<ul style="list-style-type: none">[REDACTED]
"we care for our assets, delivering safe and reliable network services while transforming our business"	<ul style="list-style-type: none">Not meeting market SLA timeframes for quantity and quality data delivery can initiate adverse compliance findings, fines, license suspension and high level AEMO discussion.

3.2 Business Initiative Alignment

In maintaining efficient and accurate billing this initiative supports the aims of lowest sustainable pricing.

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 & People, Financial, Customer, Regulatory Compliance, Network Performance, Reputation and Environment & Community).

This initiative addresses Reputation, Regulatory Compliance and Financial risks, of which TasNetworks has [REDACTED]

Handheld devices have a known [REDACTED]

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-047	Financial	[REDACTED]	Decrease in handheld fleet can result in inability to conduct effective reading operations resulting in revenue issues for the Retailer and TasNetworks.	Likely	Minor	Medium
IT-048	Regulatory Compliance	[REDACTED]	Decrease in handheld fleet can result in inability to conduct effective reading operations resulting in compliance issues for our accredited MDP role.	Likely	Major	High
IT-065	Reputation	[REDACTED]	Decrease in handheld fleet can result in inability to conduct effective reading operations resulting in an increase in customer & Retailer complaints.	Likely	Major	High

Section 1 Approvals (Gated Investment Step 1)

Business Unit Review:	██████████	Date	
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 remain with the current hardware vendor and upgrade all handheld computer devices in the fleet at the end of their current useful life.

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 alignment².
- Minimising the project complexity.
- Minimising the risk to the organisation.

5.1 Scope

The scope is the replacement of all current handheld computer devices in the fleet [REDACTED].

High level implementation activities

The high level activities required include:

- Review current 'As Is' processes in light of new upgrade and re-engineer 'To Be' processes if necessary.
- Replacement of all current handheld computer devices in the fleet, including testing of new device, interfaces, processes etc.
- Replacement/upgrading of supporting equipment (Car kits, docks, holsters), including individual testing of each replaced device.

² 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.

- Potential training in use of the latest software version and new 'To Be' processes if necessary, including creation/update of all documentation (administrative or end user).

The following items are considered out of scope:

- Upgrading of the [REDACTED] server software (included in BMS).

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.

<p>TasNetworks' perspective</p>	<p>Tangible benefits</p> <p>The benefits quantified below have been assessed as most likely to result given the assumptions made regarding the expected future state.</p> <table border="1" data-bbox="411 931 1350 1131"> <thead> <tr> <th data-bbox="411 931 986 981">Benefit</th> <th data-bbox="986 931 1350 981">Benefit</th> </tr> </thead> <tbody> <tr> <td data-bbox="411 981 986 1131"> With the implementation of this initiative, extra resources would not be required to account for loss of efficiency if the 'Do Nothing' option is selected ('Do Nothing' risks IT-065 mitigated). </td> <td data-bbox="986 981 1350 1131"> [REDACTED] </td> </tr> </tbody> </table> <p>Intangible benefits</p> <p>TasNetworks will have access to a supported and current tool for field staff. This will have many intangible benefits including:</p> <ul style="list-style-type: none"> • 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. • Enables our people to deliver value. 	Benefit	Benefit	With the implementation of this initiative, extra resources would not be required to account for loss of efficiency if the 'Do Nothing' option is selected ('Do Nothing' risks IT-065 mitigated).	[REDACTED]
Benefit	Benefit				
With the implementation of this initiative, extra resources would not be required to account for loss of efficiency if the 'Do Nothing' option is selected ('Do Nothing' risks IT-065 mitigated).	[REDACTED]				

	<ul style="list-style-type: none"> • Makes our customers central to all we do. • Adds value to our assets by enabling reliable services. • With the implementation of this initiative, the potential for revenue loss as a result of decreased hand held fleet will be minimised.
Customer's perspective	<p>Meter readings can continue as efficiently as possible without impacting the customer.</p> <p>This will help TasNetworks' ability to maintain valuable relationships with retailers and customers where TasNetworks can be trusted to deliver.</p>

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 - remain with the current hardware vendor and upgrade all handheld computer devices in the fleet (preferred option).
- Option 2 – replace the meter reading complete system with alternate vendor product and rebuild interfaces and processes.

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		
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!	Should a critical number of handhelds completely fail and cannot be fixed in the short or long term, manual workaround will be required. These will be manually intensive.
Business impact	N/A	Should a critical number of handhelds completely fail and cannot be fixed in the short or long term, manual workarounds will be required. These will be manually intensive. Reading rounds will need to be done on paper and data entry staff will be required to type readings into back-end systems. Readers will not be as efficient such that extra staff will be required. Paper collection would be without any automatic error checking that field computers perform, causing higher volume of errors and rework.
Business strategic alignment		<p>The business objective <i>‘we understand our customers by making them central to all we do’</i> will not be fulfilled due to potential revenue loss and unpredictable pricing.</p> <p>The business objective, <i>‘enable our people to deliver value’</i> will not be fulfilled due to potential negative business impacts.</p> <p>The business objectives, <i>‘we care for our assets, delivering safe and reliable network services while transforming our business’</i> will not</p>

		be fulfilled due to issues with compliancy, and risk.
IT strategic alignment	N/A	N/A
Project complexity	N/A	N/A
Risk profile		See chapter titled 'Current Risk Evaluation'.
Ability to achieve compliance		Delays to upgrade may result in non-compliance. Vendor products for the utility market are constantly evolving to satisfy NEM regulations. Should a critical number of handhelds completely fail and cannot be fixed in the short or long term, manual workarounds will be required making it harder to achieve compliance. Paper collection and data entry will make it difficult to achieve SLA's that dictate reads to be validated and delivered to Retailers before 8am on day two of a read being collected.
Time – ability to implement within a timeframe	N/A	N/A

Option 1 – remain with the current hardware vendor and upgrade all handheld computer devices in the fleet.

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	Meter reading handhelds will be replaced at the end of life expectancy.	
Cost	This option is the most cost effective compared with option 2.	
Business impact	With regard to implementation, this option has the least impact to the	

	<p>business compared with option 2.</p> <p>TasNetworks knows the product and will be able to quickly adapt to any new changes introduced with the upgrade.</p>	
Business strategic alignment	<p>It will fulfil the business objectives of <i>'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'</i> detailed in the chapter titled 'Business Objectives'.</p> <p>It will align with the business initiatives detailed in the chapter titled 'Business Initiative Alignment'.</p>	
IT strategic alignment	<p>It will be designed to suit TasNetworks work practices and work processes so as to be as efficient and effective as possible without compromise.</p> <p>It will be maintainable and supported.</p> <p>It will be 'fit for purpose'.</p> <p>It will align with current IT infrastructure.</p> <p>It will align with other IT road map initiatives.</p>	
Project Complexity	<p>As the hardware will be a new supported version from the vendor, it will be a very low level of change as their track record is that functionality is carried across to new hardware.</p> <p>This option has less complexity compared with Option 2.</p> <p>Complexity will be magnified by the number of interfaces that need to be re-worked/added. As this is an upgrade of an existing product, this is expected to be minimized.</p>	
Risk Profile	<p>This option has a minimal additional</p>	

	risk profile compared with Option 2.	
Ability to achieve compliance	By selecting a solution that leverages the expertise and conformity of vendor products designed for NEM market interfaces, will help ensure compliance with regulatory and industry standards.	
Time – ability to implement within a timeframe	This option has a shorter implementation timeframe compared with Option 2.	

Option 2 – replace meter reading complete system with alternate vendor product and rebuild interfaces and processes.

The implementation activities will be far more expansive than that of option 1.

Key differences in high level activities include:

- Elicitation of the full set of meter reading system requirements sufficient for a RFI/RFQ.
- Solution evaluation and then selection will be resource and time consuming.
- Implementing a new product may require infrastructure changes.
- Installation, configuration, customisation will have to be done from scratch (in comparison an upgrade should require minimal configuration and customisation changes).
- Interfaces may have to be designed and built from scratch.
- The testing effort will have to be a full end to end test, instead of limited regression testing.

Criteria	Advantages	Disadvantages
Solution effectiveness	Meter reading handhelds will be replaced at the end of life expectancy.	
Cost		Due to the more expansive scope, it is a higher cost option compared with option 1. Interfaces to parent systems would need to be rebuilt. Modification to the parent system would likely be required to accommodate the new Reading system.
Business	It is possible that a new system may	Introducing a new replacement

impact	<p>have a positive impact, in that it enables opportunities for process improvement.</p> <p>However, noting that the penetration of smart meters will eventually negate the need for manual reads any efficiency gains would only be for a short period. Any efficiency gain would not be dramatic.</p>	<p>system is going to require adjustments and compromises to existing processes.</p> <p>It is highly likely that many processes would need to be redesigned and altered, e.g.:</p> <ul style="list-style-type: none"> • Skip codes and trouble codes that readers have memorised. • Police required & aggressive customer flag systems. • Safety & other message systems. • Scheduling & allocation to meter readers.
Business strategic alignment	<p>It will fulfil the business objectives of <i>'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'</i> detailed in the chapter titled 'Business Objectives'.</p> <p>It will align with the business initiatives detailed in the chapter titled 'Business Initiative Alignment'.</p>	
IT strategic alignment	<p>Solutions will be selected that leverage the expertise and conformity of vendor products designed for NEM market interfaces.</p> <p>Solutions will be selected that are maintainable and supported.</p> <p>It will align with other IT road map initiatives.</p>	<p>The reality is that no vendor solution will 100% meet the requirements and compromises might have to be made with regard works practices/processes introducing inefficiencies.</p> <p>On the extreme, the compromises might even mean the solution is not 'Fit For Purpose' when delivered.</p> <p>It may not align with current IT infrastructure.</p>
Project complexity		<p>The complexity of this solution will be higher due to the expansive scope, particularly when factoring in new or changed interfaces and modifications to parent system (Meter Reading System).</p>
Risk profile		<p>There is a higher chance that when the solution is implemented, it will not</p>

		meet TasNetworks expectations. Processes that used to work may no longer work because of new system constraints that were only identified post implementation.
Ability to achieve compliance	By selecting a solution that leverages the expertise and conformity of vendor products designed for NEM market interfaces will ensure compliance.	
Time – ability to implement within a timeframe		Because of the expansive scope of the requirements, this option has a longer implementation timeframe compared with Option 1.

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		
Cost			
Business impact			
Business strategic alignment			
IT strategic alignment	N/A		
Project complexity	N/A		
Risk profile			
Ability to achieve compliance			
Time – ability to implement within a deadline	N/A		

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 previous cost of replacing the current fleet of [REDACTED] handheld devices was [REDACTED] in 2011/2012.

The vendor, [REDACTED] has provided an initial estimation of [REDACTED] for us to undertake this task in 2015.

This is not inclusive of the internal project costs (Project management, testing, training and rollout) which are estimated to be approximately [REDACTED]

Option	Total Costs (\$)
0 – Do Nothing	No Capital Expenditure
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

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 (\$)		[REDACTED]							[REDACTED]	
Total (\$) 2017-2019	[REDACTED]									
Total (\$) 2017-2027	[REDACTED]									

6.5 Summary of Risk

The preferred option addresses Regulatory Compliance, Reputation and Financial risks, as analysed utilising the corporate risk matrix, as outlined in TasNetworks Risk Management Framework.

Risk Category	Risk	Impact	Mitigation	Risk Rating
Financial	[REDACTED]	Decrease in handheld fleet can result in inability to conduct effective reading operations resulting in revenue issues for the Retailer and TasNetworks.	Maintaining the fleet preserves an integral component of "Meter to Cash" process.	Low
Regulatory	[REDACTED]	Decrease in	Maintaining the	Low

Compliance	[REDACTED]	handheld fleet can result in inability to conduct effective reading operations resulting in compliance issues for our accredited MDP role.	fleet preserves an integral component of MDP accredited processes.	
Reputation	[REDACTED]	Decrease in handheld fleet can result in inability to conduct effective reading operations resulting in an increase in customer & Retailer complaints.	Maintaining the fleet preserves an integral component of the customer billing process.	Low

6.6 Economic analysis

Option No.	Option description	NPV	Reason got selection/rejection
0	Do nothing	\$0	Risks too great
1	Replace MVRS handheld devices	\$1,767,636	Greatest benefit for lowest cost
2	Replace handhelds with new vendor	\$701,151	Higher cost for same benefit as Option 1

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

The following are inclusive of project and financial assumptions.

Assumption ID	Assumption Description
ITA-082	<p>When meter reading devices approach the end of their useful life, it is assumed that on average, one device will become inoperative per month. This has impacts upon</p> <ul style="list-style-type: none"> - Reading rounds being lost. - Rounds having to be re-read (FTE Impact). - Risk of losing our accreditation. - The retailer's ability to meet their NECF requirements.
ITA-090	<p>There are [REDACTED] state-wide, [REDACTED] and [REDACTED].</p>
ITA-091	<p>There are approximately 200-250 readings per reading round. If this was to be recorded on paper and manually entered into the MDMS, it is assumed that this would require an extra [REDACTED] [REDACTED]. This is because as well as readings there are:</p> <ul style="list-style-type: none"> - Trouble Messages. - Skip Codes. - Readers Instructions. - Forced Notes.
ITA-092	<p>It is assumed with the decline in functional meter reading handheld devices stated in assumption ITA-082, one reading round will need to be captured on paper daily, increasing by one annually. This will result in an extra two meter readers [REDACTED] [REDACTED].</p>
ITA-093	<p>Replacing the handheld devices with a new vendor's product will have no impact on the current operational expenditure incurred for the hardware.</p>

Section 2 Approvals (Gated Investment Step 2)

Business Unit Review:	██████████	Date	
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:			