

# IS Infrastructure Redesign and Refresh

## Outline Business Case

| General Information     |  |
|-------------------------|--|
| Date:                   | 26/02/2016   |
| Programme Alignment     | Information Technology                             |
| Portfolio Alignment     | Internal   |
| Current Project Phase   | <b>Plan</b>  |
| Project Classification: | Movie  |
| Project Executive:      | Ben Day  |
| Senior User:            | Matt Purnell                                       |
| Author/Project Manager: | Matt Purnell                                       |
| AC/ILOS Split/Renewals: | AC 100%  |
| Document Version:       | Version 0.3 20160302                               |
| ECM Doc Set Number      | 4181953  |
| NPV and Payback Period  | NPV \$652,922 with a payback period within 2 Years |

| Funding Overview   |   |  |  |
|--|---|--|--|
| Funding Requested in this Submission   | <b>FY15/16</b><br>Project: \$354,942 (Capex)<br>Project: Contingency: \$35,494 (10%) (Capex)<br>Project: \$6,890 (Opex)<br><b>Total: FY15/16 \$397,326</b>                              | Expected FY16/17 Allocation  | <b>FY16/17</b><br>Project: \$16,240 (Opex)<br>Contingency: \$0<br><b>Total: \$16,240</b>           |
| Estimated Total Project Cost   | <b>FY15/16</b><br>Project: \$354,942 (Capex)<br>Contingency \$35,494 (Capex)<br>Project: \$6,890 (Opex)<br><b>FY16/17</b><br>Project: \$16,240 (Opex)<br><b>Both FY Total \$413,566</b> | Total Spend to Date  | \$0 up to end Feb 2016 – Internal Hours only allocated to this project up to Outline Business Case |
| Current FY Planned Budget  | \$0<br>No Allocated funding to date - DFA Request   | Total Internal Hours to Date   | 120  |
| Current FY Planned Internal Hours  | At Project Mandate – forecasted at 245  | Current FY Approved to Date  | 245  |
| Current FY Internal Hours  | At Outline Business Case - forecasted at 310  | Expected FY16/17 Internal Hours  | 0 – Project End expected 30/05/2016  |
| <ul style="list-style-type: none"> <li>Submission requests to move from Plan phase to Implementation Phase of the Project Delivery Lifecycle.</li> <li>Draw down planned to approved funding of \$413,566 until the end of the project (FY15/16 of \$397,326 and FY16/17 \$16,240). For reference a Memo requesting the FY16/17 will be presented to the Internal Portfolio Overview Group in June 2016 requesting the FY16/17 budget allocation.</li> <li>A contingency based on 10% of CAPEX has been added to the total project. The contingency for this project should be aligned to the contingency pool managed via the Deputy Chief Executive and Chief Financial Officer and will be drawn down only if required through relevant documentation throughout the Project Delivery Lifecycle.</li> </ul> |   |  |  |
| Overall confidence in accuracy of the total project cost estimate provided at this Phase of the investment?  |   | High; detailed technical planning has resulted in a quote that should deliver all requirements |  |

|                       |     |
|-----------------------|-----|
| <b>Funding Source</b> |     |
| <b>Rating Impact</b>  | N/A |

**Background**

**Overview**

This initiative focusses on the TCDC "IS Infrastructure" - i.e. the collection of hardware and associated software platforms that underpin the business software applications and information services that the Council supplies to its staff and external customers. It is critical that IS Infrastructure is highly stable, with an expected uptime in excess of 99%, so as not to disrupt services and/or impact productivity. Our existing platforms are ageing and have reached capacity. This is a significant risk to TCDC's productivity, reputation, and ability to provide core services. Capacity limitations are already an issue affecting delivery of TCDC projects.

The project aims to redesign and replace the current "Datacentre solution" for TCDC with a well-researched solution. The requested funding is for the CAPEX purchase and implementation of this solution, and the first 12 months of related OPEX costs

**Options and recommendation**

For historical reasons, TCDC currently owns and maintains an on-site "server room", which hosts almost all its core information services. With the evolution of Cloud computing, industry best practice has moved away from a solely on-site architecture, to take advantage of one or more of a range of Cloud services. These include:

- Hosting as a Service - where TCDC-owned hardware is remotely hosted
- Infrastructure as a Service (IAAS) - where remote hardware is rented
- Software as a Service - where TCDC subscribes to remotely hosted software 'services'

The Council IS strategy recognises that the pragmatic approach to Cloud adoption is a gradual one, rather than a big bang approach; it envisages a hybrid environment existing for a number of years as Cloud services continue to mature and evolve, and as the impediments to broader Cloud adoption break down.

In terms of addressing the immediate risks and issues of the current IS infrastructure, the IAAS option has been reviewed against the alternative of replacing our on-premise hardware with up to date technology, namely 'Omnicube' from Simplivity Corporation. This is a solution born out of a transformational approach to IT infrastructure called 'hyperconvergence' - essentially compressing what used to require a number of separate, layered components, into a single device. The product is the result of a development collaboration involving two of the most reputable, established names in IT infrastructure: Cisco and VMWare. This unified approach has resulted in a product that delivers extensive optimisations and synergies.

More detailed pros and cons of the two options are outlined later in the document but, in summary, concerns about current bandwidth and connectivity limitations, along with the cost and disruption of migrating to an external provider, have weighed against the IAAS option. By contrast, the Simplivity 'Omnicube' represents a significantly cheaper alternative, with some impressive ancillary benefits:

- Affordable enough to own several units - mitigates against hardware failures
- Unmatched data compression and deduplication
- Allows for TCDC to exist in two geographic locations, thereby for no additional cost:
  - Replacing a costly Backup solution
  - Providing world class Disaster Recovery
- Reduces complexity and operational overhead
- Zero-downtime, zero-risk Maintenance
- Allows for an easy and low risk migration of core services

TCDC has obtained and completed a free Proof of Concept, using the intended hardware on loan from Simplivity. TCDC have trialled the technology to the best degree one can realistically expect without a full migration. The results of the Proof of Concept have reassured us that the product will deliver the hard requirements, while also mitigating additional Issues and Risks.

**Timing Considerations**

TCDC IS has wished to resolve the following risks and issues for some time. This project has refrained from acting immediately in order to rigorously discover alternatives and opportunities, which has been beneficial. The downside of this discovery period is that the following issues have grown in urgency:

- IS Infrastructure is critically low in disk space
- IS Infrastructure is ageing, lacks a well-planned replacement schedule
- Current-state has a very expensive maintenance cycle
- Risks to productivity and system stability during upgrades and maintenance
- Risks due to multiple 'single points of failure'
- Current Infrastructure places restrictions on Business Continuity Planning and Disaster Recovery ambitions
- Excessive after-hours requirement on key operational staff:
  - For hardware maintenance

- In maintaining systems operability
- To be on 24/7 unofficial, unpaid standby
- Placing significant anxiety on standby staff

| Project Options |   |   |  |
|-----------------|---|---|--|
| No              | Option  | Advantage   | Disadvantage   |
| 1               | Implement Simplivity, replace the existing Server Infrastructure<br><b>[RECOMMENDED OPTION]</b> | <ul style="list-style-type: none"> <li>▪ High Benefits – see Benefits section</li> <li>▪ More cost-effective infrastructure</li> <li>▪ Mitigation of major Risks</li> <li>▪ Affordable and highly reliable Disk Space</li> <li>▪ Improved server performance</li> <li>▪ Scalability - provide the ability to grow quickly</li> <li>▪ Uncompromised ownership of data</li> <li>▪ Redundancy - avoids dangerous single points of failure</li> <li>▪ Transportability - the TCDC Environment can literally be picked up and moved without downtime; opens many possibilities for IS systems location</li> <li>▪ Maintenance - non-intrusive non-risky upgrades</li> <li>▪ Enables highly-effective Disaster Recovery/Business Continuity; delivers a working instance of TCDC in another location</li> <li>▪ Reduces manual process overheads</li> <li>▪ Independence retained, by avoiding a vendor-integrated infrastructure</li> <li>▪ Information Lifecycle Maintenance - fine-grained, long-term, and secure retention of data</li> </ul> | <ul style="list-style-type: none"> <li>▪ Breaking the current investment cycle requires advanced funding</li> <li>▪ Some vendors may not immediately comprehend the "Private Cloud" and geographically-distributed nature</li> <li>▪ A shift to a different platform inevitably brings some risk</li> </ul>  |
| 2               | Do Nothing<br>(continue with existing investment cycle)   | <ul style="list-style-type: none"> <li>▪ Less Funding required for this Financial Year</li> </ul>   | <ul style="list-style-type: none"> <li>▪ Ongoing risk</li> <li>▪ Perpetuates an investment cycle involving \$796K more (than Omnicube) over 5 years</li> <li>▪ No mitigation of numerous Risks</li> <li>▪ Involves ongoing disruptive upgrade &amp; maintenance activity</li> </ul>  |
| 3               | Move to IaaS (Infrastructure as a Service) Platform   | <ul style="list-style-type: none"> <li>▪ Less internal support staffing requirements</li> <li>▪ Easy scalability</li> <li>▪ Relinquishes TCDC responsibility for TCDC platform uptime</li> </ul>  | <ul style="list-style-type: none"> <li>▪ Highly costly and disruptive migration effort</li> <li>▪ Current issues restrict time - needed to plan and realise an effective migration</li> <li>▪ "IaaS-to-Thames" bandwidth requirements unlikely to be met reliably, many performance concerns</li> <li>▪ Vendor-lock-in to the highest degree</li> <li>▪ IaaS shared-delivery model can preclude them from meeting custom requirements</li> <li>▪ Heavily increased OPEX</li> </ul> |
| 4               | Move to SaaS (Software as a Service) Platform   | <ul style="list-style-type: none"> <li>▪ Relinquish local infrastructure requirements</li> <li>▪ Lower application support overheads</li> <li>▪ Improved quality of local applications</li> </ul>   | <ul style="list-style-type: none"> <li>▪ Highly costly and disruptive migration effort</li> <li>▪ Very highly complex to achieve in the short term</li> <li>▪ Simply not available for many existing applications</li> <li>▪ No resolution of numerous Risks</li> </ul>  |

|  |  |  |   |
|--|--|--|---|
|  |  |  | <ul style="list-style-type: none"> <li>Unable to remove the requirement for TCDC infrastructure anyway</li> </ul> |
|--|--|--|---|

| <b>Strategic Alignment</b>  |  |
|---|--|
| <p><u>This Project aligns with the following TCDC values:</u></p> <ul style="list-style-type: none"> <li>Fiscally responsible and prudent with ratepayers money</li> <li>Being a great place to work where staff are inspired to be the best they can</li> <li>Being a highly effective and fast moving organisation.</li> </ul>  |  |
| <p><u>This Project delivers in line with "TCDC IS Strategy" as a result of these following benefits:</u></p>  |  |
| <p>Business Improvement Programme</p> <ul style="list-style-type: none"> <li>Improve staff productivity and enable more resources for front line service delivery</li> <li>Reduce overheads and fixed costs</li> <li>Reduce organisational risk</li> <li>Support Business continuity plans</li> </ul>   |  |
| <p>IS Principles</p> <ul style="list-style-type: none"> <li>to buy off the shelf, minimizing customization</li> <li>Information is a strategic asset for Thames Coromandel District Council and will be managed throughout its lifecycle</li> </ul>   |  |
| <p>Future state IS: Technology</p> <ul style="list-style-type: none"> <li>Preparing for gradual, business-case driven, transition to the Cloud</li> <li>A robust, well-monitored network</li> <li>Stable, reliable systems – not cutting edge</li> </ul>  |  |
| <p><u>This Project delivers these additional Strategic IS Benefits:</u></p> <ul style="list-style-type: none"> <li>Interim Private Cloud solution - benefits of both Cloud and On Premise technology</li> <li>Enables potential further transition to purely-cloud technologies</li> <li>De-centralises infrastructure, providing whole-enterprise redundancy</li> <li>Delivers a world class Business Continuity Planning platform</li> <li>Delivers a world class Disaster Recovery platform</li> </ul> |  |

| <b>Project Benefits</b>  |                               |                    |
|--|-------------------------------|--------------------|
| <b>Direct Financial Benefits</b>   |                               |                    |
| <b>Description</b>   | <b>Benefit Classification</b> | <b>\$ Benefits</b> |
| Cost effective Infrastructure  | Projected costs over 5 years  | \$650,348          |
| Removed requirement for data backup solution   | Projected costs over 5 years  | \$288,000          |
| Upgrade Maintenance Savings  | Estimated costs over 5 years  | \$55,000 minimum   |
| Relinquished Maintenance Contracts   | Projected costs over 5 years  | \$291,000 minimum  |
| <b>Non-Financial Benefits</b>  |                               |                    |
| <b>Description</b>   | <b>Benefit Classification</b> |                    |
| Resolves pressing disk-space issues, increasingly restricting project activity                                       | Issue mitigation              |                    |
| Opportunity to relieve current unpopular restrictions on mailbox sizes   | Improved Service              |                    |
| World class Disaster Recovery and Business Continuity Planning platform  | Improved Service              |                    |
| Establishes TCDC IS as “geographically diverse”  | Strategic Goal                |                    |
| Establishes TCDC IS as highly portable, provides freedom   | Opportunity                   |                    |
| The ability to host services from a city centre (with fast internet and efficient integration with hosting services) | Opportunity                   |                    |
| Resolves critical disk-space issues  | Issue mitigation              |                    |

| Project Benefits   |                  |
|--|------------------|
| Protection from data loss - data is written to three distinct devices in two locations | Risk mitigation  |
| Protection from downtime - TCDC Infrastructure hardware failure (from days to hours)   | Risk mitigation  |
| Protection from downtime - Loss of TCDC server room (from weeks to days)               | Risk mitigation  |
| Less reliance on unofficial after-hours support from key TCDC staff                    | Issue mitigation |
| Anticipated leap in TCDC service performance - as indicated within testing             | Performance      |
| Highly simplified environment to operate   | Risk mitigation  |

| Scope   |  |
|---|--|
| In Scope  | Out of Scope                               |
| Delivery of Detailed Solution Design document   | Rationalising oversized ECM Data           |
| Create best-practice internet-facing zone (DMZ) | Moving rationalised ECM disks to Omniboxes |
| Vacating Production servers from ESXi Hosts     | Completing VMware View migration from SAN  |
| Moving of all TCDC Servers from SAN storage     | Actual decommission of SAN                 |
| Moving all network drives from SAN to a Server  | Design decisions around VDI environment    |
| Moving ECM Static Disks to Eternus              | Delivery of Business Continuity Plan       |
|   | Delivery of Disaster Recovery plan         |

| Project Costs            |                |   |                                       |                |                  |
|--------------------------|----------------|---|---------------------------------------|----------------|------------------|
| Funding Approved to Date |                |   |                                       |                |                  |
|                          | Financial Year | Purpose   | \$ Capex                              | \$ Opex        | \$ Total         |
| Year 1                   | FY15/16        | Project Mandate for Initiate and Plan Phase                           | \$0                                   | \$0            | \$0              |
| <b>Total \$</b>          | <b>FY15/16</b> |   | <b>\$</b>                             | <b>\$0</b>     | <b>\$0</b>       |
| <b>Comments</b>          |                | Internal hours only   |                                       |                |                  |
| Funding Requested        |                |   |                                       |                |                  |
|                          | Financial Year | Purpose   | \$ Capex                              | \$ Opex        | \$ Total         |
| Year 1                   | FY15/16        | Remainder of Project Planned Budget for Implementation of the Project | Project \$354,942<br>Cntgncy \$35,494 | OPEX \$6,890   | <b>\$397,326</b> |
| <b>Total \$</b>          | <b>FY15/16</b> |   | <b>\$390,436</b>                      | <b>\$6,890</b> | <b>\$397,326</b> |
| <b>Comments</b>          |                | Includes contingency of 10% on CAPEX project costs                    |                                       |                |                  |

| Estimated Total Project Cost (including ALL costs outlined above)                                    |                |                                       |                                       |               |                  |
|--|----------------|---------------------------------------|---------------------------------------|---------------|------------------|
|  | Financial Year | Purpose                               | \$ Capex                              | \$ Opex       | \$ Total         |
| Year 1   | FY15/16        | Year One Costs - Implementation       | Project \$354,942<br>Cntgncy \$35,494 | OPEX \$6,890  | <b>\$397,326</b> |
| Year 2   | FY16/17        | Year Two Costs - remaining OPEX Costs | \$0                                   | OPEX \$16,240 | <b>\$16,240</b>  |
|  |                |                                       |                                       |               | <b>\$413,566</b> |
| Overall confidence in accuracy of the total cost estimates provided at this stage of the investment: |                |                                       |                                       |               | 90%              |

| Procurement   |     |
|---|-----|
| Will a Procurement Plan be required for this project? | Yes |

**Procurement**

**Describe the intended sourcing strategy for this activity**

A Selective Procurement to be signed off within Internal TCDC POG, via the definitions detailed within the "**Procurement Policy and Procedures Manual 2009**".

This approach is preferred as the following advantages allow Network Edge New Zealand (NENZ) to deliver this deployment at a quality and cost that other NZ vendors cannot provide:

- The vendor's existing business relationship with TCDC
- The vendor's familiarity with our technical environment
- The vendor's established relationship with Simplivity Corp
- The vendor's unparalleled familiarity with the OmniCube solution

Please refer to section 17.2.2 of the "Procurement Policy and Procedures Manual 2009":

*17.2.2 Selective Procurement*

*Procurement from a selected supplier may be approved by a Group Manager subject to a written report, which includes evidence of appropriate market research to support the case for selective procurement.*

*Purchase from a selected supplier may be approved where:*

- *The goods or services require specialised skills or are very complex and there is a limited number of qualified suppliers;*
- *The required goods or services are available from only one source;*
- *Only one supplier has the capacity to deliver at the time required and this can be adequately attested; or*
- *Standardisation or compatibility with existing equipment or services is necessary, and can be achieved through only one supplier.*

**Key Project Risks**

| Risk Description   | Risk Classification | Consequence Level | Likelihood |
|--|---------------------|-------------------|------------|
| Simplivity may not deliver performance once whole environment is running within it | Functional          | Moderate          | Low        |
| An unforeseen Issue with the product   | Schedule            | Significant       | Very Low   |
| Workload is higher than anticipated  | Schedule            | Significant       | Possible   |
| Matt Purnell may require extra BAU hours to deliver                                | Cost                | Moderate          | High       |

**Internal Hours**

| Name                 | Role              | Dec 2015  | Jan 2016  | Feb 2016  | Mar 2016  | Apr 2016  | May 2016  | Jun 2016 | Total      |
|----------------------|-------------------|-----------|-----------|-----------|-----------|-----------|-----------|----------|------------|
| <b>Ben Day</b>       | Project Executive |           |           |           | 5         | 5         | 5         |          |            |
| <b>Matt Purnell</b>  | PM & Senior User  | 50        | 25        | 25        | 35        | 45        | 15        |          |            |
| <b>Leith Apthorp</b> | Network/Server    |           |           |           | 30        | 40        | 30        |          |            |
|                      | <b>Total</b>      | <b>50</b> | <b>25</b> | <b>25</b> | <b>70</b> | <b>90</b> | <b>50</b> |          | <b>310</b> |

**IT Implementation** (All IT related projects will be subject to an IT security & compliance review)

|  |     |
|--|-----|
| Is there an IT component to your investment? | Yes |
|--|-----|

**Project Milestones**

| Milestones                               | Date       |
|--|------------|
| Outline Business Case Governance Signoff | 18/03/2016 |

| Project Milestones                   |            |
|--------------------------------------|------------|
| Project Go-live                      | 15/05/2016 |
| Project Closure – End Project Report | 31/05/2016 |

| Supporting Documentation [Check box to indicate those completed. Supporting documents, or relevant sections, can be attached in Outline Business Case appendices, if required.] |                                     |                                |                          |                                    |                          |                                |                                     |
|---|-------------------------------------|--------------------------------|--------------------------|------------------------------------|--------------------------|--------------------------------|-------------------------------------|
| Cost Benefit Analysis   | <input type="checkbox"/>            | Procurement Plan               | <input type="checkbox"/> | Project Risk Register              | <input type="checkbox"/> | Project Schedule (Gantt Chart) | <input type="checkbox"/>            |
| Project Budget Working Papers   | <input checked="" type="checkbox"/> | Market Research                | <input type="checkbox"/> | Risk Management Plan               | <input type="checkbox"/> | Design Concept Study           | <input type="checkbox"/>            |
| Assessment Environmental Effects (AEE)  | <input type="checkbox"/>            | IT Compliance /Security Review | <input type="checkbox"/> | Product Definition                 | <input type="checkbox"/> | Project Staffing Plan          | <input type="checkbox"/>            |
| Health & Safety Plan  | <input type="checkbox"/>            | Change Management Strategy     | <input type="checkbox"/> | Business or System Context diagram | <input type="checkbox"/> | Concept Presentation           | <input checked="" type="checkbox"/> |

## Document Review and Approvals

| Document Review   |                |      |                 |
|-------------------|----------------|------|-----------------|
| Title             | Name           | Date | Email/Signature |
| Senior User       | Matt Purnell   |      |                 |
| Project Board     | Rob McNaughtan |      |                 |
| Project Executive | Ben Day        |      |                 |

## Internal Project Governance Approvals

| Document Review                         |         |      |                 |
|---|---------|------|-----------------|
| Title                                   | Name    | Date | Email/Signature |
| Internal Portfolio Overview Group Chair | Ben Day |      |                 |

## Appendices – Supporting Documents

- Project Budget Working Papers including Cost Benefit Analysis NPV