

ICT SHARED SERVICES ACROSS THE WELLINGTON REGION - LEARNINGS FROM A WATER MANAGEMENT SERVICES ORGANISATION

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ABSTRACT

The creation of Wellington Water (WWL) was based on the belief that a regionally managed water network can deliver strategic and operational synergies that were not possible by individual councils working in isolation. This same rationale should therefore be applicable to Shared Services opportunities for Information, Communication and Technology (ICT) products and services.

Wellington Water partnered with like-minded councils in the Wellington region and joined the Shared Services Office (SSO). This initiative aligned to Wellington Water's commitment to regional thinking and collaboration, as well as leveraging the benefits and cost-savings offered through a shared platform of technology products and services. It also provided impetus within Wellington Water to viewing ICT as a key strategic asset for growth and innovation, rather than simply as a cost to the wider business.

The process of transitioning towards the SSO initially appeared simple and straightforward, as most Corporate ICT functions and services at Wellington Water were already outsourced. Therefore, the strategic and economic benefits were easy to quantify and qualify. Nevertheless, the journey itself has not always been straightforward and this paper will present both the benefits and challenges faced from ICT and wider business perspectives, as the transition will be largely complete by the time of this conference in October.

KEYWORDS

ICT Shared Services, outsourcing, regional collaboration, Cloud computing, innovation, cost savings

1 INTRODUCTION

In October 2015, Wellington Water signed up to participate in an Information and Communication Technology (ICT) Shared Services initiative with three of its five owner Councils – Upper Hutt City Council (UHCC), Porirua City Council (PCC) and Wellington City Council (WCC). This saw the culmination of an idea translating into reality and of the four participating agencies (PAs) making a commitment to each other and to their stakeholders to take a broader, regional focus on how they could collectively pool and share ICT resources.

The Shared Services Office (SSO) was set up to run this initiative and took the lead in representing the four Participating Agencies (PAs) to the preferred supplier, Dimension Data (DiData), which is run from WCC and headed by the WCC Chief Information Officer (CIO). This decision was made as a cost-saving exercise, rather than creating another Council Controlled Organisation (CCO), although the concerns for the other three PAs regarding fair representation and independence of the SSO vis-à-vis WCC have remained. The programme of work to deploy the SSO is referred to as the Shared ICT Infrastructure Services (SIIP), and is also run out of WCC.

The initiative was based on a 2013 ICT Shared Service Feasibility Study report delivered by Deloitte to all Councils within the Greater Wellington region, excluding the three Wairarapa Councils. This report identified a number of options and recommended the Councils move to a regional shared IT infrastructure

model as a first step, then potentially consider sharing some business processes as a future step. However, this next step was identified as “a significantly more expensive, complex and risky transition”.

Despite the benefits on offer from this collective, regional approach, Hutt City Council (HCC) decided from the start to not join in the negotiations, favouring its own very lean approach over the regional, shared model.

A Request for Proposal (RfP) was submitted on the Government Electronic Tenders Service (GETS) in July 2014, in February 2015 the regional detailed business case was prepared, and in late June DiData were selected as the preferred supplier for these shared ICT infrastructure services.

The original plan was to complete the deployment of all towers by the end of June 2016, however, due to a number of issues, the completion date was extended to December 2016.

One major issue was the withdrawal of the Greater Wellington Regional Council (GWRC) in September from the process. This decision was based on new analysis by GWRC which showed that the financial model no longer worked for them.

This caused a re-evaluation of the business model and renegotiations with DiData; however, the decision was made by the remaining PAs to proceed. DiData agreed to keep the pre-GWRC exit costs flat for the first two years, with a provision to increase costs in Years Three to Five to recoup losses unless SSO could attract new organisations to join.

GWRC’s exit caused further issues for Wellington Water as infrastructure, especially networks and Controls systems that would have been shared by both organisations and managed by DiData, now had to be re-evaluated. Some of these dependencies were missed during the final due diligence carried out by DiData, and have since created additional challenges for Wellington Water to manage.

Figure 1 – SSO major Governance activities and timelines

Activity / deliverable	Timing	Governance
Finalise contractual arrangements with Dimension Data	22 October 2015	WCC Chief Executive to sign with Dimension Data
Finalise contractual arrangements with Participating Agencies and Service Recipients	21 October 2015	Chief Executives of all four Participating Agencies to sign
Commence transfer and transition to Dimension Data	October 2015	Planning approval and authority by Wellington City Council Chief Executive
Confirm SSO appointments	November 2015 to March 2016	SSO Governance
SSO commences operations	January 2017 (fully operational)	SSO Governance
Commence business change management, including detailed impacted staff engagement	October 2015	Programme to support each Service Recipient in its change process
Complete transition to Dimension Data	December 2016	SSO Governance

The PAs all signed up to five towers of services to be provided through the SSO and DiData. These were Help Desk services; Server Management services; Desktop Management services; Fixed and Mobile Telephony services; and Networking services. Each tower offers a number of different products, including Email Protection, Web Protection, Enterprise Mobility as a Service (EMaaS) and Desktop as a Service (DaaS).

One major challenge has been to agree on the order of implementation for each tower of service, and the order of implementation for each PA. Each PA has very different priorities, which for Wellington Water was largely driven by the need to minimise the period of migration to avoid having to pay for Datacom (the incumbent ICT service provider) to provide existing services, while at the same time paying for DiData to implement the new services.

The DiData offering was based on a Private Cloud computing construct, with all PAs migrating their server infrastructure onto the DiData cloud which is based in two leased data centre facilities in Wellington (Production) and Hamilton (Test/Dev & Disaster Recovery).

DiData also brought a number of partners to offer specialised services into the offering. These include Spark for mobility services, Vocus for some networking services, and SSS for the email security service.

2 BENEFITS AND OPPORTUNITIES

2.1 WELLINGTON WATER SPECIFIC BENEFITS AND OPPORTUNITIES

Wellington Water's Corporate ICT infrastructure was largely based on what was transferred from the old Capacity business model, which operated a similar model to that proposed by SSO, with most ICT services outsourced to Datacom. Nevertheless, the new model offers Wellington Water a number of benefits and opportunities.

2.1.1 WELLINGTON WATER SPECIFIC BENEFITS

A number of specific benefits for Wellington Water helped to make the business case much more palatable.

1. A major benefit for Wellington Water will be the availability of a Disaster Recovery (DR) capability for all its Corporate ICT services, to be managed by DiData for all the PAs out of Hamilton-based data centre. Also, the whole SSO model is built to manage many critical services for all PAs, so Wellington Water benefits from the improved Service Levels that apply.
2. Cost savings through a shared infrastructure platform. Wellington Water expects to make significant annual savings through the shared Infrastructure as a Service (IaaS) platform used by all PAs.
3. Platform optimisation should see much better performance and capacity for Wellington Water compared to what it could achieve operating alone.
4. Shared network with three of its owner Councils. A shared Wide Area Network (WAN) with appropriate Single Sign On and Identity and Authentication Management (IAM) functionality allows Wellington Water staff to realise some workflow and time savings by reducing the need to log on and off various systems.
5. Improved access to key ICT skills. Wellington Water has run a very lean ICT shop and has to rely on often expensive specialist third party resources to provide specific skills; however, it now has access to the SSO team and to DiData and its partners for advice and pre-sales activities.
6. More predictable budgets through agreed and predictable costs.
7. Though the smallest of the PAs, Wellington Water receives the same benefits accruing from the overall services as all other agencies.

2.1.2 WELLINGTON WATER SPECIFIC OPPORTUNITIES

1. Wellington Water expects to realise a number of opportunities through participation in the SSO. Not least of these is the ability to collaborate and interact much more closely with the other PAs in the choice of new technologies and business processes.
2. Shared roadmap and alignment of respective ICT Strategies for the PAs will enhance the regional understanding and deliver more shared and mutually beneficial outcomes for Wellington Water, especially as its technology needs are in some cases much more specialised than the other PAs.

- Wellington Water also increases the opportunity for it to realise some of its key business drivers for its ICT function through participation in the SSO, in particular by strengthening its regional focus, increasing information sharing, and helping to drive innovation and smarter decisions.

2.2 REGIONAL BENEFITS AND OPPORTUNITIES

2.2.1 REGIONAL BENEFITS

These largely align to the Wellington Water specific benefits. In particular, the shared platform reduces individual agency risk and investment, increases economies of scope and scale through leveraging an overall greater number of seats, and also provides greater resiliency through leverage of DiData's global scale and depth of specialist capabilities.

2.2.2 REGIONAL OPPORTUNITIES

The opportunities for the region as a whole are that as the SSO model matures and new features, products and services are developed, there is greater likelihood that other agencies will look to join, in whole or only adopting some of the service towers on offer. This will amplify the benefits for the existing PAs and increase opportunities for on-going collaboration and further expansion of products and services. This growth will justify the decision to participate, and for Wellington Water help further develop and strengthen the business drivers noted above.

3 FUTURE ROADMAP

The SSO has a vision for its role in the provision of an expanding number of key technology services to its current and potential future PAs. An early representation of what the SSO offers through its partnership with DiData is shown below, and how they link together to help drive innovation and other benefits for the PAs and the region as a whole is shown below in Figure 4.

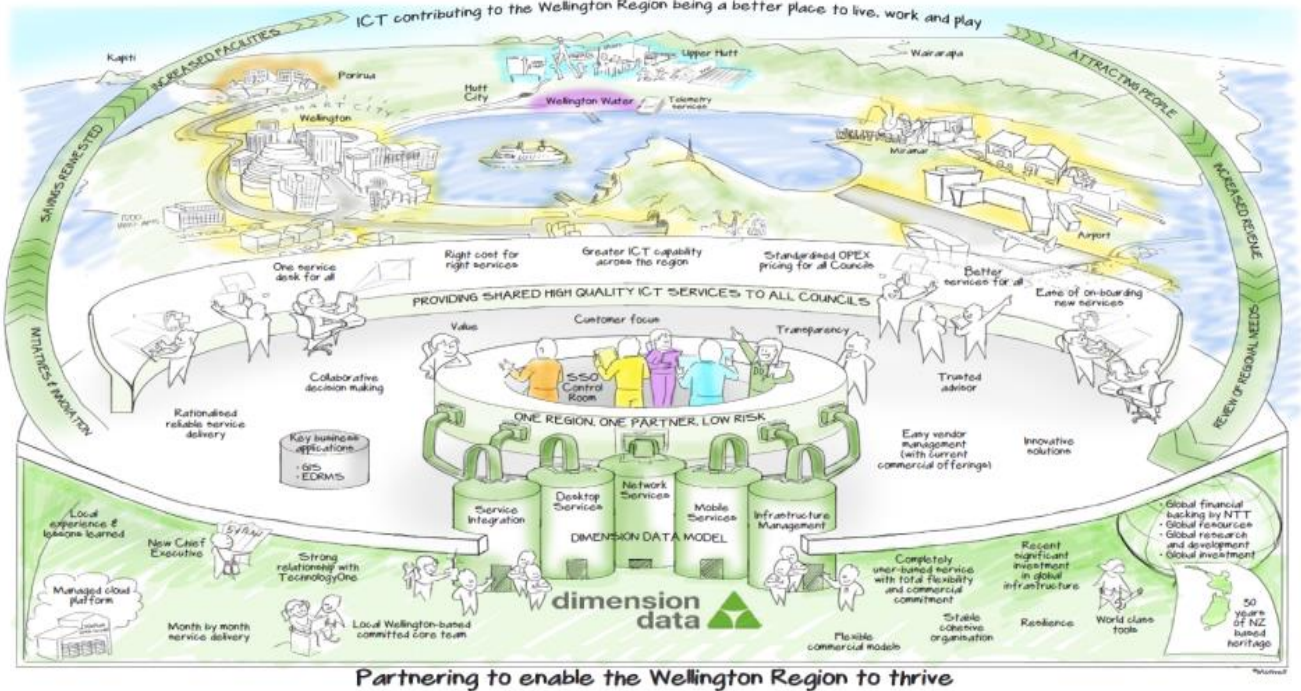
With the withdrawal of GWRC, the SSO has begun to explore opportunities to offer some or all of these services to other Local Government agencies outside of the Greater Wellington region, as well as to other local bodies.

However, the focus remains on the successful migration of all services for all four of the founding PAs, as this is the best method to demonstrate to other agencies the capability and competencies offered to them through the SSO.

Nevertheless, a number of new initiatives are, or soon will be, offered to the PAs.

With the development of a Service Catalogue and a leasing arrangement through DiData, the SSO can now offer favourable purchase and lease terms on a small set of technology assets such as computers (desktop and laptop), tablets, monitors and more. Moving to a leasing model helps the ICT function in the transition from a Capex to an Opex financial model, and simplifies the refresh cycle for all desktop hardware. This model also simplifies the support model for SSO and DiData, who will ensure that all devices offered through the Service Catalogue will be fully supported, patched, updated and managed through the asset lifecycle.

Figure 2 – SSO Vision and Strategy Diagram



Other services, such as a VIP service for Councillors, Senior Managers and others will ensure that their requests are dealt with quickly and efficiently; database management; software asset management; geographic information systems (GIS); and other services are discussed with the CIOs from the PAs to identify suitability, need and complexity.

From the perspective of the water utility industry, the main new service opportunity would be a Controls/SCADA offering. The challenge here is that this is a highly complex and specialised technology niche where Operational Technology, rather than Information Technology, has traditionally played the key role.

Therefore, for the SSO to be able to offer any meaningful service to Wellington Water or any other water utility, the question to be answered is where to define the boundary between the ‘as a Service’ offering and the business as usual (BaU) work done by the engineers.

The complexity of the network, with a mixture of radio, fixed line, mobile, microware and other transmission types, together with a server fleet that needs to remain on site at the plants and a skilled Controls team who have traditionally managed the entire ecosystem, means that any transition to the SSO model would involve far greater due diligence by all parties, extremely detailed project management, a robust test schedule and a much more hands-on management by the provider, with a dedicated support team.

4 LEARNINGS

4.1 TO DATE

The reasons for Wellington Water joining the SSO remain valid. It has proved to be an excellent vehicle to work collaboratively with the owner Councils who also joined, and the regional focus this provides for all PAs is invaluable.

The platform for discussing new opportunities to identify and develop shared services to align with business strategy has helped to streamline Wellington Water’s own Technology Strategy, and to simplify the operating model. This presents ways to reduce, or at least control future spend, and to leverage commonality where possible to further minimise costs for all the PAs.

Nevertheless, there have been challenges. For Wellington Water these have been through a combination of the following factors:

- i. a small internal ICT team;
- ii. a current provider who is losing the business, and so potentially has less motivation to help;
- iii. a new provider with different rules and processes to the incumbent;
- iv. limited internal business knowledge of the more technical requirements of the systems that have been in use for many years; and
- v. a management function (SSO) which wants to deliver a complex Programme of Work to a very tight timeframe, and where Wellington Water is less than 5% of the total volume of this Programme.

Wellington Water has managed these challenges very proactively through regular meetings, open and honest communications and leveraging the right resources from all parties to provide the appropriate level of technological and business smarts to help overcome the thornier questions.

A couple of key risks for Wellington Water have been the definition of scope and also the need for rigorous and detailed due diligence during the whole process. The scope of the SSO in its current form includes only the Corporate ICT services, and so the Controls systems (including SCADA and data historians) are out of scope. This risk is amplified, as GWRC own and still provide some support for the Bulk Water network and the technology and non-technology assets that underpin this network. The same applies to HCC's piece of the Four Cities Controls system.

The need for accurate due diligence during any outsourcing process is critical. During this particular one, arguably a lack of appropriate thorough due diligence resulted in GWRC's withdrawal at the eleventh hour, which then in itself created the need for further rework and challenging assumptions. This work creates a huge workload and pressure on the ICT team, especially when the team size at Wellington Water is two people. This will then ripple out and create extra work and pressure on the wider business. Therefore, failure to undertake good due diligence throughout the process will create issues during the implementation phase. On that note, an often overlooked point is that the due diligence process and other negotiations will require a large amount of legal representation, and this will add significantly to the overall cost of the whole Programme.

A key learning here is to have good project management resourcing to work through the work streams. Between SSO, Datacom and DiData, Wellington Water has had access to some excellent people who have taken care of the detail for us.

Another learning is the need for consistent, frequent and clear communications to all staff. Wellington Water has an excellent internal communications function and has also leveraged the work done by all three Councils to assist and to reduce duplication of effort. We have used email, Intranet, open meetings with video and PowerPoint presentations, as well as meetings with management across every business unit at Wellington Water.

The final key learning is to be prepared to challenge assumptions. Between the various parties, especially with Wellington Water being a relatively small part of the whole, and with some churn of personnel over the timeframe from inception to date, sometimes specific detail has been overlooked. Therefore, the test for the Wellington Water ICT team is to have the confidence to ask awkward questions and to dispute answers.

For any smaller business unit or organisation in a Shared Service model, the risk is to be overwhelmed or drowned out by others. By standing up for the organisation, Wellington Water's ICT function has ensured that its server migration was prioritised and that an on-site technical resource will be made available for the transition to the new mobile and desktop services.

4.2 CURRENT

As Wellington Water moves out of a state of relative limbo with a duality of service providers, the path towards completing the transition looks much more assured. Nevertheless, challenges remain and these present some interesting learnings, both to Wellington Water and to the wider community.

The first key learning faced at present is to always challenge one's self about untested assumptions from colleagues regarding ICT systems. Any migration, especially to a new provider, will turn up skeletons and these often manifest at the most difficult times in a process. Therefore, prior to beginning any work on hardware or software, especially systems which are older or less well-understood, the recommendation is to run an audit by a specialist. The findings either validate the assumption, or identify remedial work. Either way, this is invaluable, especially with tight timeframes to deliver.

The second key learning at present is to share the knowledge and to involve the wider business in the process. In an organisation which has small teams with specialised knowledge, it is critical to involve them in the move to the desired outcome, rather than leaving them to watch from the sidelines. Involvement with a voice equals engagement, and an engaged wider team owns the solution.

Finally, the need to create detailed business process mapping has been highlighted through the migration to SSO. Wellington Water has begun this exercise, but there is a long way to go. A constant request to the ICT team from SSO has been to provide the appropriate level of User Acceptance Testing (UAT). By having all business processes mapped, the team would be able to identify both the right tests and potential testers.

4.3 LIKELY

With three months remaining until Wellington Water is fully transitioned to the SSO model, there are still some further key learnings expected.

Confirmation and definition of scope for the remaining services may become an issue for Wellington Water. As has been stated above, assumptions need to be explored, and also with any outsourcing arrangement, the scope too needs to be clarified. The contract was negotiated on behalf of all the PAs and prior to the current Wellington Water CIO joining, therefore assumptions regarding scope may result in unmet expectations. The key learning to all other agencies considering an SSO-type arrangement is to reconfirm the scope of the service as key milestones approach. This should not be done through confrontation, but rather as an exercise in appropriate internal due diligence and audit, to ensure that requirements are delivered and benefits realised.

In the same way that scope needs to be verified, so must the return on investment calculations be checked and reforecast. The business case for Wellington Water was solid and the benefits tangible. Nevertheless, in any process that takes more than one year to deliver, and with new products and services implemented or new staff hired, it is important for the ICT function to work with Finance to refresh the forecast budgets and to check these against actuals.

Finally, it is important for any organisation to align the outcomes and outputs from any outsourcing initiative to the Technology Strategy of the organisation, and to revisit these regularly. The Wellington Water Technology Strategy is under development and therefore post-dates the agreement to move to the SSO, which means that the Infrastructure as a Service model underpinning SSO is fundamental to the strategy. However, at a time of rapid movement in the technology landscape, with new opportunities presenting themselves to water utilities through the Internet of Things (IoT) enabled through Low Power WANs and the convergence between Information and Operational/SCADA/Controls Technologies (IT/OT Convergence), it is imperative that all technology teams working for these organisations keep abreast of these opportunities. For Wellington Water this has meant a very close working relationship between all such teams, which has enabled on-going discussions on current and future benefits to be derived from the SSO.

5 CONCLUSIONS

In conclusion, the SSO journey for Wellington Water to date has been worthwhile and illuminating. The rest of the journey offers the final realisation of the benefits and will vindicate the decision to participate.

The business logic to undertake this type of initiative for most smaller Local Government organisations is pertinent, if only to encourage the ICT function to review costs and to identify both tangible and intangible benefits that could arise from a Shared Services initiative.

There are four key themes to consider as lessons for all Local Government agencies and others involved in water utilities. The first is the need for solid and effective relationships with all parties, with regular, well-managed meetings at all levels of the business and with all the other parties. For the SSO, this is based on weekly CIO meetings, and regular operational Governance meetings at General Manager level, with Chief Executive strategic sessions held less frequently.

The second is the need to keep focused on the strategic, longer-term benefits of the process. It is easy when the process is challenged and issues arise (as they will) to only look at the costs. However, the big picture view is critical to keep in front of mind, ensuring that all parties keep an eye on the goal, as well as the minutiae of the journey.

The third follows on from the second, and is the need to recognise that personal desires sometimes have to be put in second place behind the benefits on offer from a truly shared service offering. This will require discipline from individuals and organisations to keep politics from clouding decisions for the longer-term benefits of all participants.

Finally, the fourth theme is specific to the technology challenges brought about in any organisation which has significant investment in both Information (IT) and Operational/SCADA/Controls (OT) Technologies. Traditionally, these two worlds have not interacted well together, and have often deliberately distanced themselves. However, the worlds of IT and OT are rapidly converging through radical changes underway across the Utilities sector and further afield. IoT, Cloud Computing, Big Data, mobility, Smart Phones/Water/Cities all offer exciting opportunities for collaboration within the industry and the country. Adopting an approach based on regional collaboration and shared ICT services makes the conversations and the journey easier for all.

Therefore, in conclusion, the landscape for both Local Government and Water Utilities is undergoing rapid evolution, in some cases revolution, and sharing a platform with other agencies to enhance collaboration and innovation while reducing risk and cost, is always desirable. There are challenges and the model does not work for all, but at the very least it deserves close examination and honest and open discussion within all our organisations.

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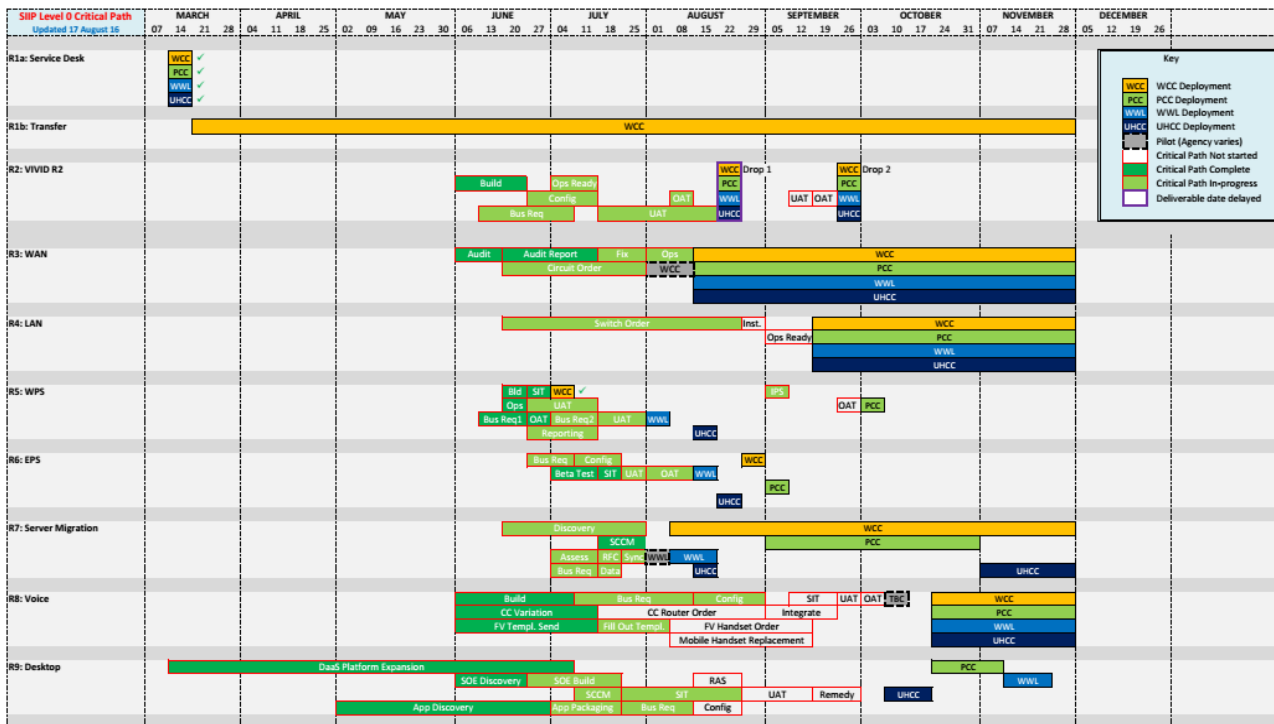
APPENDIX

1 SIIP PROGRAMME OF WORK

The Programme of Work to deliver the SSO (SSIP) began in earnest in late 2015, with the initial focus being on deployment of the new Help Desk Service and for WCC only, the transfer of support for all the services that would be managed by SSO to DiData – the other three PAs’ plans were to transition to SSO as each new Service Tower goes Live.

The full SIIP Schedule is shown below in Figure 2. As this shows, a major challenge for both the SSO/SIIP team and DiData has been to juggle resource to cover migration of often very different environments from the various PAs.

Figure 3 – Full SIIP Schedule



A huge amount of preparatory work was required to identify technical requirements, while also factoring for business expectations to minimise the impact during the actual migrations.

Issues to be managed include sickness or staff leaving, as well as critical business events, such as local elections, requiring extensive change freezes across certain systems.

Therefore, the Change Management capability from SSO and DiData has had to be rigorous and this has meant that the Wellington Water ICT function has had to implement much more control over its environment and ensure that processes are current, correct, adhered to and effectively communicated.

1.1 HELP DESK

The launch date for the Help Desk was Tuesday 15th March 2016, and this would present all staff three methods of logging Service Requests and Incidents – via email, telephone or a new SSO portal known as Vivid. On that date, the existing Help Desk functions would transfer to SSO and existing call management systems should begin to be turned off.

For Wellington Water this meant that Datacom, the internal ICT team and other specialists would be escalation points and resolvers for specific systems.

SSO provides regular updates on calls to the Help Desk, with daily reports, access for the ICT team to a management console, updates to all PA CIOs at the weekly meetings, ad hoc messages and reports as requested and other meetings as required.

Information available includes the usual metrics available for any Help or Service Desk function that uses standard ITIL (<https://en.wikipedia.org/wiki/ITIL>) terminology and procedures. An example of the reporting function available is shown below in Figure 3.

The challenge for Wellington Water in terms of Help Desk usage has largely been cultural, as we have our own excellent and highly experienced Desktop Support Engineer on site.

Therefore, staff either bypass the system and go directly to this person, or go to him if they do not get a speedy resolution to their issue. Also, the Vivid portal is confusing and many people incorrectly label their issue, not appreciating the difference between an Incident and a Service Request.

Nevertheless, the number of tickets logged by Wellington Water staff overall has declined over time, though the numbers of Service Requests are higher than expected by the SSO, as is shown in Figure 4 below. Incidents track at about half the number of Service Requests.

Figure 4 – Typical SSO Help Desk ticketing trend metrics provided

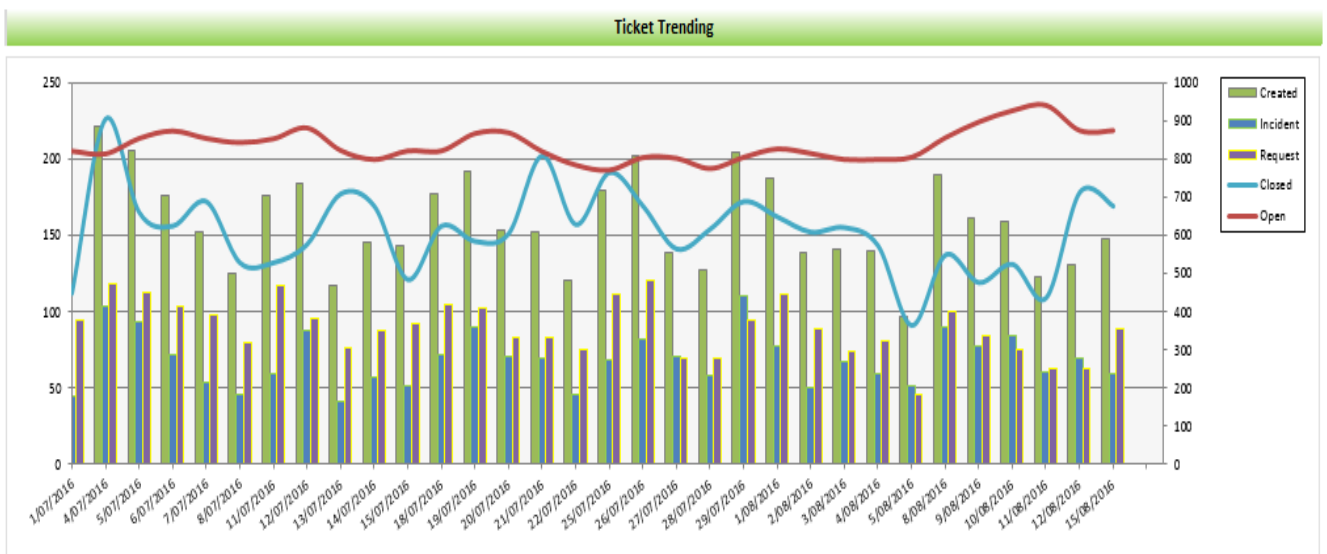
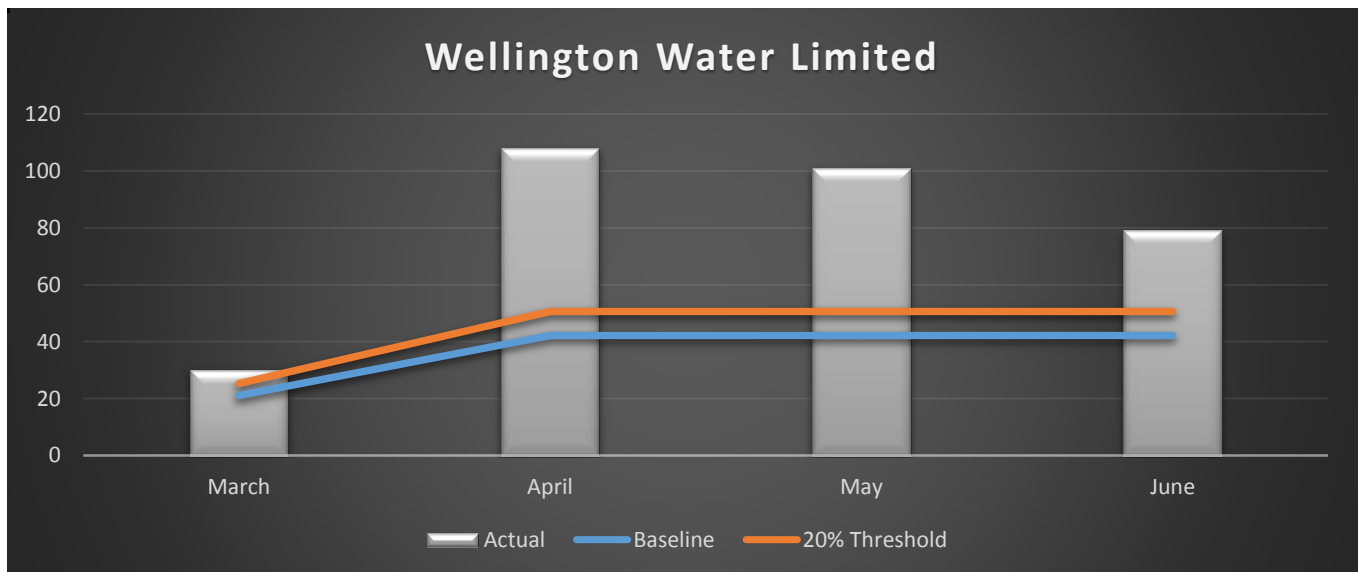


Figure 5 – Service Requests by Wellington Water staff, March – June 2016



1.2 INFRASTRUCTURE MANAGEMENT - SERVERS

When the process to migrate to SSO began, Wellington Water had two server farms.

1.2.1 DATACOM

Seven servers were hosted by Datacom and comprised mainly the ex-Capacity servers, providing base business functionality, such as Exchange (email and Active Directory), File and Print, a database server, Remote Access and other management and desktop build functions.

1.2.2 DIDATA

Fifteen servers were hosted by DiData at a leased facility in Kapua, Hamilton. This facility hosted the new applications that Wellington Water had developed over the previous year, mainly for SharePoint (as a new document repository and management capability) and Q-Pulse, the new Risk and Assurance and Health and Safety application.

1.2.3 LEGACY

SSO and DiData have very strict rules regarding what they term as ‘Legacy’ servers. The definition varies by operating system and manufacturer, but for Wellington Water the only legacy server was the database server, running Windows 2003 and older versions of SQL Server. Our approach was to migrate the functionality off the server and onto SharePoint, which is well placed to manage sequential workflow operations.

1.2.4 PROGRESS

The migration process saw the Datacom-hosted servers migrate into the new data centre in August 2016, with the Kapua-hosted servers to follow in the coming months.

The process of migration to date has been largely seamless and uncomplicated for both the Wellington Water users and the ICT team, although residual applications on the database server and poorly-documented configurations on some servers have caused problems which have been addressed, though not always in a coordinated and well-planned manner.

1.2.5 SECURITY

The SSO has deployed two security services which sit across both the Infrastructure and Network service towers.

The first is a Web Protection Service (WPS), which enables filtering of Internet traffic. The service provides a rich interface to choose which types of sites are permitted or blocked, and each PA chose according to its own policies and procedures.

The second service is an Email Protection Service (EPS), which blocks spam and malicious emails, with a quarantine facility for suspicious emails. EPS has an administrative function that allows each PA’s ICT team to manage emails and report on spam types.

Both of these services are to be upgraded over time, with new features added.

1.2.6 DISASTER RECOVERY

The provision of a robust DR solution managed across the PAs was a key deliverable for Wellington Water. Once the server migration to DiData is finally complete, the expectation for the organisation is that all services will be replicated and data backed up to the Kapua data centre.

The plan is to run a series of mock-up DR exercises in the coming months to validate both the technical solution and the business processes. Ideally, Wellington Water would look to run a full DR fail over once a year to test internal readiness and the SSO’s ability to maintain the services.

1.2.7 CONTROLS

The most complex server topology for Wellington Water is for the servers that manage the Controls and SCADA systems. These remain out of scope for the SSO, although inspirationally they expect these will come into scope once the Corporate migration is successfully completed.

These servers manage two systems – Four Cities and Bulk Water – and none of these are hosted by either Datacom or DiData.

1.3 NETWORKS

The traditional Wellington Water Corporate network topology was simple. The owner Councils had paid for the entire network for all Controls systems and Wellington Water staff supported, managed and maintained these.

The Corporate network, therefore, was limited to the headquarters building in Petone, with a connection to the Internet via Datacom, who provided ISP services for the business.

1.3.1 LOCAL AREA NETWORK (LAN)

The LAN for Wellington Water has traditionally been straightforward, with only the move from the old to the new building and the incorporation of the GWRC staff complicating the situation.

Almost all GWRC network connections have been terminated now, except a few for key business services, including access for the Controls team to the Bulk Water SCADA system.

The Wellington Water LAN has been fully migrated to SSO and DiData is now acting as our ISP. The migration was seamless, and includes a dedicated connection into the Amazon Web Services (AWS) Cloud node in Sydney.

1.3.2 WIDE AREA NETWORK (WAN)

A Wellington Water WAN is a new context for the business. As staff moved from working for the Councils to Wellington Water, many relocated to Petone into the offices on Victoria Street.

However, for some staff this was not feasible, and for many of these people they have remained on Council networks, often using Council equipment and/or systems. This situation is expected to be addressed as part of the migration to the SSO.

In the coming months, Wellington Water and the SSO will be working with DiData and its partners to identify the best options for extending the new WAN to all sites where Wellington Water staff are based. Some of these sites are easy to access, others less so.

The challenge for all parties is where the only existing Internet connection is owned by a Council which is not part of the SSO. Where this is the current situation, Wellington Water is negotiating with the Council to identify options, which may include leasing bandwidth, or giving our staff access to devices with SIM cards to use 3/4G data connectivity instead.

1.3.3 CONTROLS NETWORKS

As for the servers, the Controls networks are by far the most complex piece of Wellington Water's network topology, and are split between the Four Cities and Bulk Water networks.

Also as per the servers, the Controls networks are currently out of scope of the SSO.

1.4 DESKTOPS

Wellington Water's desktop environment has been managed by Datacom, and the build was migrated from the old Capacity desktop image. It is currently a 32-bit Windows 7 image, though this is currently being upgraded to a 64-bit Windows 7 image, which is the current standard image supported by DiData.

A Windows 10 supported image is under development by DiData and is expected to be released to the SSO PAs by the middle of 2017.

1.4.1 LAPTOPS AND DESKTOPS

Wellington Water has tried to limit the number of different devices and manufacturers with some success. The longer term goal is to move to a limited number of laptop/tablet hybrids running a Windows operating system. This will give all field workers a device they can use in any situation (once sufficiently ruggedised), similar capability for staff who need to work in different locations, and finally a device that all staff can use in Business Continuity situations.

1.4.2 OTHER DEVICES

At Wellington Water many staff members have work iPads. These provide base functionality, including Virtual Private Network (VPN) access into the Corporate environment, email and a range of apps that staff use in a work context.

All iPads currently have Vodafone SIM cards on an 'all you can eat' fixed price plan. This will change under SSO.

1.5 TELEPHONY

Wellington Water made a corporate decision some time ago to move away from fixed line telephony for most staff. Instead all staff members have a mobile phone with a Direct Dial In (DDI) land line number mapped to their mobile phone number.

1.5.1 FIXED LINES

Wellington Water only maintains fixed line services for the Receptionist and the Executive Assistants working for each General Manager.

This is currently provided through Vodafone and will migrate to Spark, through SSO, in the next three months.

A number of fixed line telephones remain at the remote offices. These are not currently provided by Wellington Water, but as the WAN extension progresses, at least one fixed line phone will be kept at each site as a Business Continuity tool, in case mobile towers are damaged or get overloaded in an emergency situation.

1.5.2 MOBILES

As a result of the decision to do away with fixed line telephony for most staff at Wellington Water, mobile phones are critical pieces of ICT infrastructure for all staff.

The current solution provided by Vodafone works well, with very good coverage across most of the geographic extent of the organisation for the field staff. There is no software tool for management of the devices, and the current plan is a fixed price for data and calls.

The current fleet of devices is largely a mix of older Windows Nokia phones and newer iPhones. There is no Bring Your Own Device (BYOD) policy at Wellington Water, although some staff choose to use their own devices – either with a SIM paid for by Wellington Water or on their own personal plans (which are not subsidised).

As Wellington Water migrates to the SSO this situation will change with the move to Spark. To better manage the devices, all Wellington Water-owned devices need to go through a due diligence process to determine whether they are compatible with the Spark network and capable of running a new Mobile Device Management (MDM) tool, which is known by SSO as Enterprise Mobility as a Service (EMaaS).

Once the due diligence process is complete, Wellington Water may have to procure replacement devices for some staff. The longer-term plan is to move to a single operating system platform to reduce complexity and simplify the procurement and management process.

The primary challenge once the migration is complete is if there are key sites which Wellington Water staff regularly visit which were covered by Vodafone, and which have no Spark coverage. Options are limited, and current mitigation is either to ask staff to carry two phones or to explore dual-SIM phones, which Spark does not support or sell!

1.5.3 TELEMETRY

As with servers and networks, the telemetry that currently uses Vodafone SIM cards is out of scope for the SSO.

Challenges in migrating include any outage of critical infrastructure because of a change in the Access Point Name (APN), lack of coverage from the new provider or other configuration issues.

Lack of coverage at some sites has already been identified as a serious risk, and Vodafone has had to install some complex femtocell daisy-chains to extend coverage.

Another challenge is the caustic nature of some sites, waste treatment plants in particular, where all electronic equipment degrades much quicker than in other locations. This requires additional checks and infrastructure refresh rates, which adds cost and risk to the business.