

Digital WA:

Western Australian Government

Information and Communications
Technology (ICT) Strategy

2016 - 2020



Government of **Western Australia**
Office of the **Government**
Chief Information Officer

www.gcio.wa.gov.au

Front cover photograph ©The Scene Team



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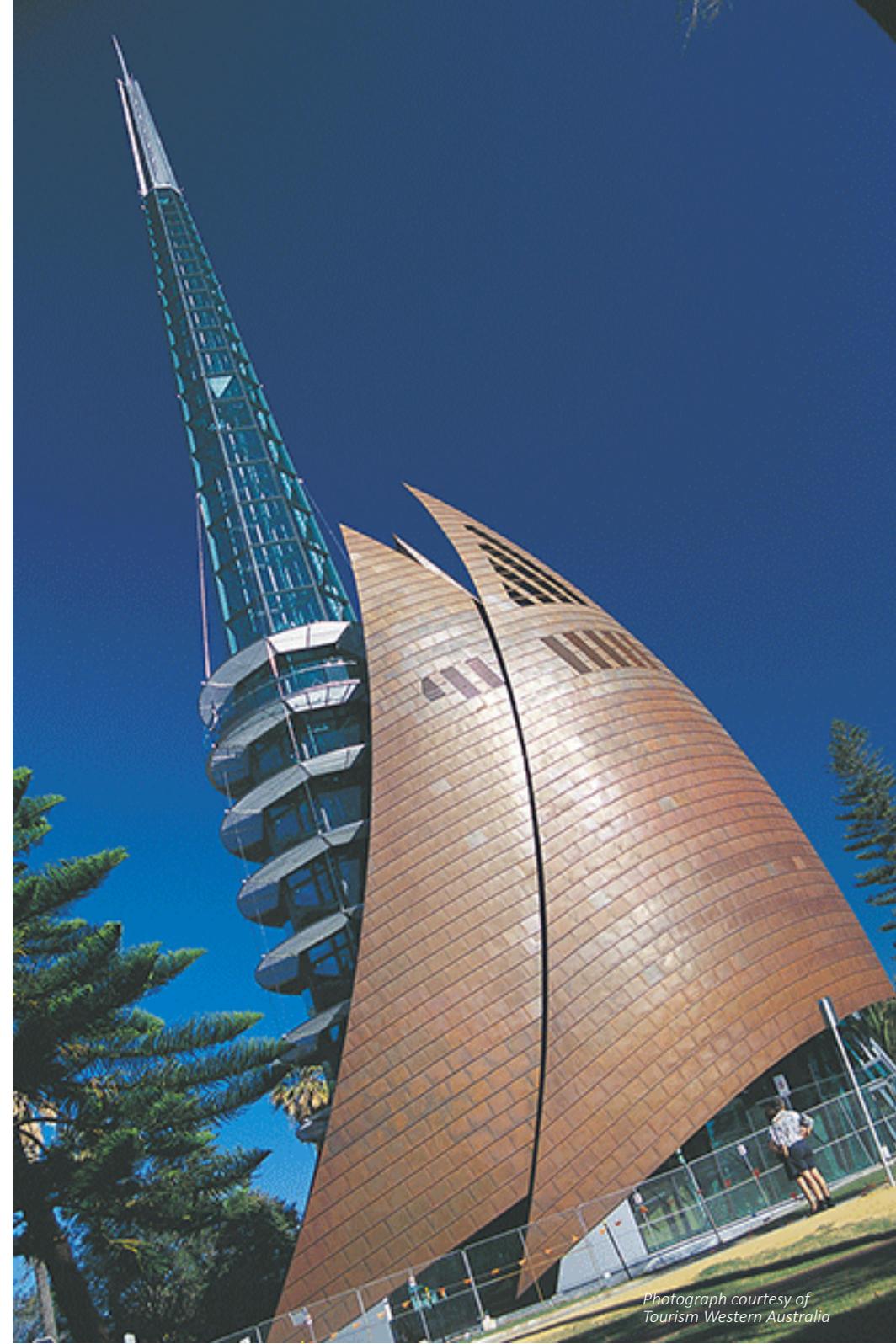
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Copies of this Strategy are available on the website of the Office of the Government Chief Information Officer at www.gcio.wa.gov.au.

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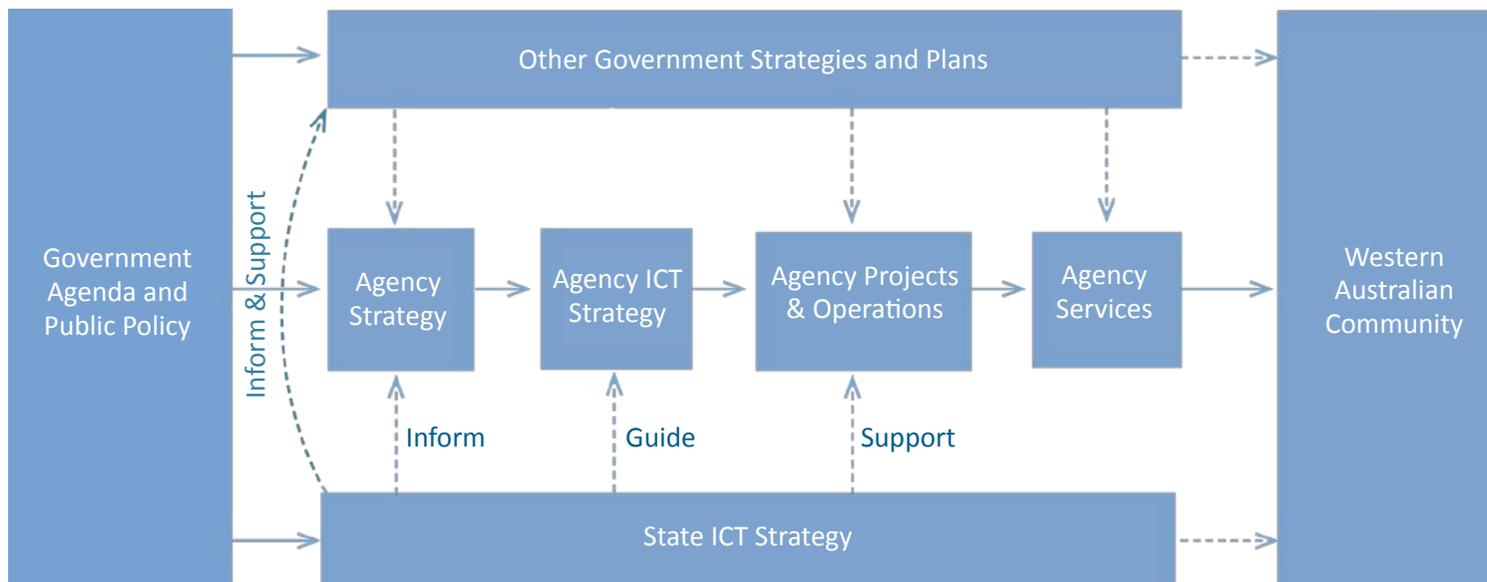


*Photograph courtesy of
Tourism Western Australia*

Context

The Western Australian Government ICT Strategy 2016 – 2020 is the result of consultation across the public sector and ICT industry. It positions the public sector as a whole to use the opportunities provided by current and emerging technologies to deliver efficient, reliable ICT services that support exceptional public services.

Along with other Government strategies and plans, this Strategy should inform the development of individual agency business strategies to ensure efforts are aligned across the public sector to deliver the maximum possible benefit to the community. In particular, this Strategy should be used to guide the development and delivery of agency ICT strategies and plans, which support the individual objectives of each agency. This Strategy will be coordinated by the Office of the Government Chief Information Officer, and delivered in partnership with other public sector agencies.



The scope of this Strategy covers and includes the entire public sector¹, including all departments, statutory authorities and government trading enterprises. While universities and local governments are not covered, outputs delivered by implementing the Strategy will be available for use by any public body to maximise benefits to the community.

The Office of the GCIO will continue to collaborate across the public and private sectors throughout the life of the Strategy to ensure that it remains relevant, effective and achievable. The Strategy will also be regularly reviewed to ensure that it supports other whole-of-government agendas such as Red Tape Reduction, and the State Emergency Management Committee Communications Strategy.

¹ As defined annually in Note 8: Composition of Sectors, Notes to the Financial Projections, Appendix 1: Detailed Financial Projections, Economic and Fiscal Outlook, Budget Paper No. 3, Western Australian Government Annual State Budget. For more information, visit www.ourstatebudget.wa.gov.au.



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Premier's Foreword



Hon Colin Barnett MEd MLA
Premier; Minister for Tourism; Science

Western Australia is recognised internationally as an ideal location for innovation and development. Investment in world-class projects such as the Square Kilometre Array (SKA) radio telescope, the Pawsey Supercomputing Centre, and the Internet of Everything (IoE) Innovation Centre in Technology Park, serve to highlight the opportunities emerging in our state.

Our state is the largest geographical jurisdiction in the world and Perth is one of the most remote capital cities. New technologies, and transforming how government operates to take full advantage of them, will allow us to reduce barriers previously imposed by distance. Western Australians deserve access to fast, convenient and reliable government digital services. This Strategy charts a path for the public sector to make that a reality.

The Government is committed to maintaining and improving service delivery to the community that enhances and supports the lifestyle and opportunities of all Western Australians. The effective governance and use of technology by the public sector are key drivers for this to succeed.

This Strategy will support a stronger and more broad-based economy, building on the state's long record of smart solutions.

Minister for Innovation's Foreword



Hon Bill Marmion BE MBA MLA
Minister for State Development; Finance; Innovation

The public sector currently spends over one billion dollars a year buying and supporting ICT goods and services. Changing how we procure and implement technology effectively should not only reduce the current cost, but also free up funds to reinvest in new infrastructure and community services. Smart use of information and technology will contribute towards the reduction of government red tape, saving the community and businesses even more. This Strategy will also benefit local businesses and entrepreneurs as agencies seek innovative ways to operate and deliver services.

Greater coordination and reuse of technology across government agencies, as well as easier access to high quality information, will make it easier for agencies to identify and focus their efforts on the most important community issues and concerns. Delivering digital and digitally-supported services as part of one government serving one community will result in better outcomes and greater benefits for less cost at a lower risk.

Introduction



It is an exciting time for Government, with more opportunities than ever before to improve how Western Australians live and work through the use and adoption of new technologies. To realise these benefits the Government, businesses and the community will need to work together to create a sustainable future for delivering government services in Western Australia – a Digital WA.

This Strategy is an important part of that process, a map to guide the public sector in seizing the opportunities provided by new technologies in order to reshape the way services to the community are planned, delivered and supported.

Government services will increasingly become digital, delivered online and conveniently accessible through a single whole of government portal. Interoperable systems and networks will allow seamless connectivity and service delivery between agencies. High quality data from across the entire public sector will drive analytics for government decision making, and result in more and more open data being provided to the community. Effective use of cloud and other pay-as-you-go options will allow government to move away from owning and maintaining expensive ICT assets, and instead reinvest in improving service delivery to the community.

Change is needed because ICT is no longer only about information and communication technology, boxes and wires, programs and processes. Technology and the need for information have pervaded every aspect of the modern and increasingly digital world. Mobile devices and social media play an increasing role in both professional and private lives. Cloud computing and data analytics bring capabilities previously only available to large governments and corporations into every home or office. The Internet of Things, consumer robotics and automation will multiply people's ability to control or collect data about their world. Businesses are being disrupted and created through the sharing economy.

The services needed by the community are also changing. Public demand in key areas like health, transport, social services and emergency response is increasing. Ready access to cheap, powerful technology at home means more people want government services to be as quick and easy to use as Google, Amazon or eBay.

These issues are about more than just technology. They're about how technology affects people's lives.

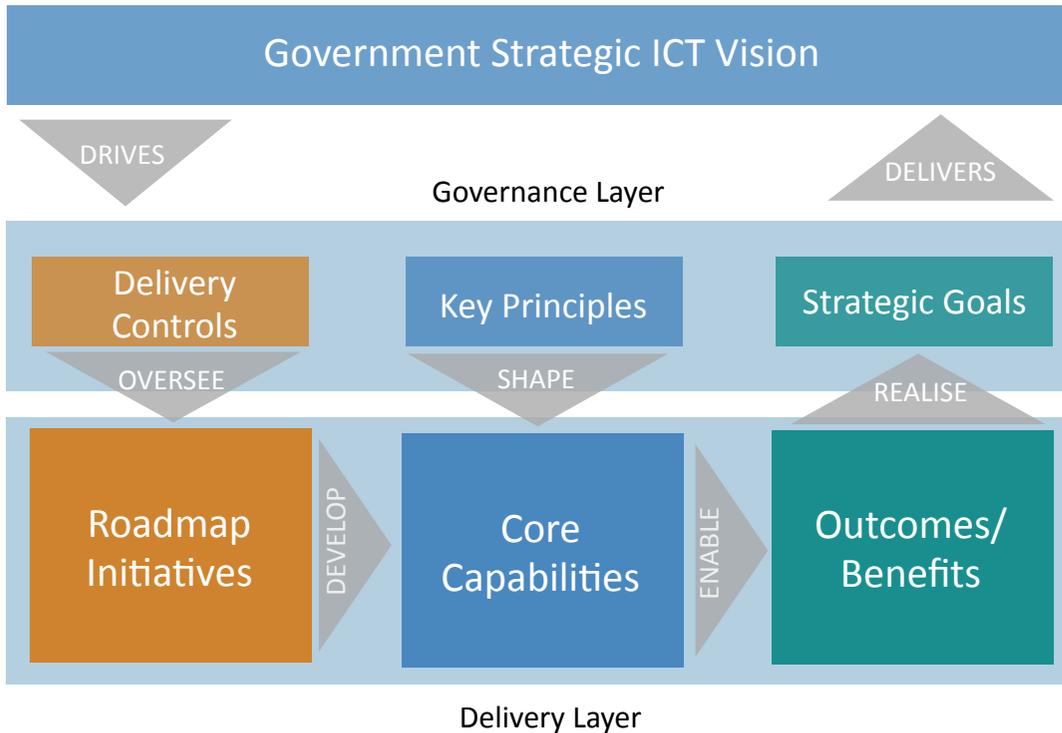
Because of this, strategic decisions about technology will focus less on hardware and software, and more on how to deliver government services in a global and fast-changing environment. The audience for this Strategy is therefore broader than only those managing and delivering ICT services within an agency. The entire public sector needs to develop and mature the capabilities required to turn government into digital government, in order to meet the expectations of a community living and working in a digital world.

This Strategy requires change, and will both need and enable a cultural shift towards innovation, collaboration, and transformation across the public sector, involving everyone from Directors' General and Chief Executive Officers, through Chief Information Officers and other senior business leaders, down to and including the newest graduate or trainee. Creating a Digital WA is not something the public sector can do alone, but only with the support and engagement of business, industry and the wider community.

Giles Nunis
Government Chief Information Officer

“ICT is no longer only about information and communication technology, boxes and wires, programs and processes. Technology and the need for information have pervaded every aspect of the modern and increasingly digital world.”

Executive Summary



The Digital WA: Western Australian Government ICT Strategy is driven by a vision of better services delivered to the community, supported with innovative uses of technology by a public sector that is mature in its digital capabilities. The Office of the Government Chief Information Officer (Office of the GCIO, or OGCIO) has developed this Strategy through consultation across the public sector and with the ICT industry in order to realise this vision.

“To increase the likelihood that this Strategy will be successful, a solid layer of governance will operate throughout the full lifecycle.”

To increase the likelihood that this Strategy will be successful, a solid layer of governance will operate throughout the full lifecycle. With regular reporting of progress and performance to Cabinet, strategic oversight and direction provided by the Directors’ General ICT Council, and program and project oversight and direction provided by senior business and ICT executives from across the public sector, the Strategy will be delivered in line with clear guidelines and controls.

Implementation of the Strategy will be undertaken through a series of key and supporting initiatives outlined in a high-level Roadmap. Successful piloting of

these initiatives by lead agencies, with the support of the Office of the Government Chief Information Officer, will help to deliver and mature core capabilities required within the public sector. This will enable the government’s desired outcomes to be met by the Strategy, and the realisation of the State’s ICT strategic goals and the resultant benefits that will be returned to the community of Western Australia.



Executive Summary

Government ICT Strategic Goals:

Realise a simple and interconnected government delivering effective community services...

SIMPLIFY technology platforms, systems and standards as part of a unified government

CONNECT agencies and the community through digital services and system integration

INFORM decision-makers, frontline staff and the public with quality data and analysis

Government ICT Key Principles:

Shape public sector culture for effective decisions about technology to support service delivery...

INNOVATE by looking for better ways to use technology to deliver public services

COLLABORATE by actively working together to deliver consistent, integrated public services

TRANSFORM by ongoing adoption of improved systems or practices that demonstrate value

Government ICT Delivery Controls:

Oversee projects and services to ensure accountability and deliver successful outcomes...

GOVERNANCE that is strong, disciplined, strategic and appropriate to the size and type of project

PLANNING that is consultative and sufficiently detailed to provide confidence in an outcome within an agreed scope

RISK and benefits management focused on maximising the likelihood of success, not minimising all chance of failure

PRINCIPLES for decision-making that facilitate delegation, agility and flexibility within an approved strategic context

MONITORING and reporting that enables progress to be objectively verified and regularly reviewed

SIMPLIFY

Things don't need to be complicated

Implementation of common frameworks and platforms will lead to less duplication and more efficient use of technology. Clear ICT policies and standards will guide agencies alignment with whole-of-government ICT objectives and leverage commercially attractive contracts and services as part of a single, unified government. Greater use of “pay as you go” and “as a Service” solutions will allow agencies to focus resources on systems supporting the unique core services they provide.

CONNECT

Everything connects to everything else

Access to digital government services will make online transactions easier than ever. Agencies will share information to deliver projects and services efficiently and more targeted to community needs. Agency systems will share data and functions using secure networks to deliver seamless services to the community online or in person. A broader range of sourcing options and more streamlined procurement will foster more effective ties between government and the evolving technology sector.

INFORM

Knowledge is the first step to success

Reliable, relevant data will inform government officials to support well-coordinated and timely decisions. Frontline staff will have easier and more mobile access to information sourced securely from systems across government. Enhancement of digital skills and knowledge within the public sector will assist in making better use of new technologies, and enable closer cooperation between business and ICT professionals within agencies. Ever-increasing availability of high quality open data will support the economic growth of the local business and start-up community.

Executive Summary

INNOVATE

Look for better ways to do things

Agencies will explore new ways to deliver services by maximising the use of new technology and engaging with the broader community. The risks of trying any new idea will be understood and managed appropriately. ICT staff with strategic business skills will give trusted advice on the potential of current and emerging technologies to support and improve service delivery.

COLLABORATE

Work together for mutual benefit

Agencies with similar functions will build systems on common standards and platforms. Systems will exchange data securely and enable workflows that span the public sector seamlessly. Cooperation across public and private sectors will result in solutions that benefit more of the community. Agencies will find and share resources and expertise across the sector.

TRANSFORM

Adopt and adapt for new value

Agencies are expected to be more agile, using modern technology to adapt to opportunities and challenges. Government enterprise architecture will show how different roles, systems, information and technology impact on business functions and services. Business structures and staff training will be suitable and flexible to enable well-controlled change management.

| Roadmap Themes | Core Capabilities | Outcomes/Benefits |
|--|---|---|
| <ul style="list-style-type: none"> Information and Analytics People Capability Sourcing and Innovation ICT Business Management Online Self-Service Digital Security Technology Platforms Governance and Strategic Policy | <ul style="list-style-type: none"> Evolving our Culture Empowering our People Improving our Processes Harnessing our Data Opening our Systems Converging our Technology | <ul style="list-style-type: none"> Stability of ICT project and service delivery Efficiency in the cost of delivering ICT services Transparency in ICT governance and service delivery Capability of the public sector to respond to changing community needs |

Key Performance Indicators *Whole of Government stretch targets for 2020 and beyond...*

| Stability | Transparency | Efficiency | Capability |
|--|---|---|--|
| <ul style="list-style-type: none"> >90% of the ICT components of major projects are completed on time and within budget >90% of government digital services meet or exceed agreed and published service levels | <ul style="list-style-type: none"> >90% of agency chief executives are confident in the quality of their ICT governance to inform good decisions >75% of financial and information service transactions with the public are done through digital channels | <ul style="list-style-type: none"> >10% overall reduction in the annual cost of delivering current (2016-17) ICT services by the end of the Strategy >90% of ICT reinvestment plans deliver the targeted return on investment | <ul style="list-style-type: none"> >90% of agencies reach maturity level 3 or higher in all strategic core capabilities |

Part 1 - Strategy

Vision

The community of Western Australia expects access to quality government services when and where it's convenient to them. Public sector employees need to be supported in their delivery of services with access to high quality, relevant data from any government agency. Local technology businesses expect to support, and be supported by, the government in developing innovative ways to improve services.

This Strategy will create a scalable and reliable digital foundation to meet the needs of the Western Australian government. More optimised and efficient use of technology will

allow services to be delivered that are more accessible, cost less, are supported by digitally skilled staff, and result in better outcomes for the community.

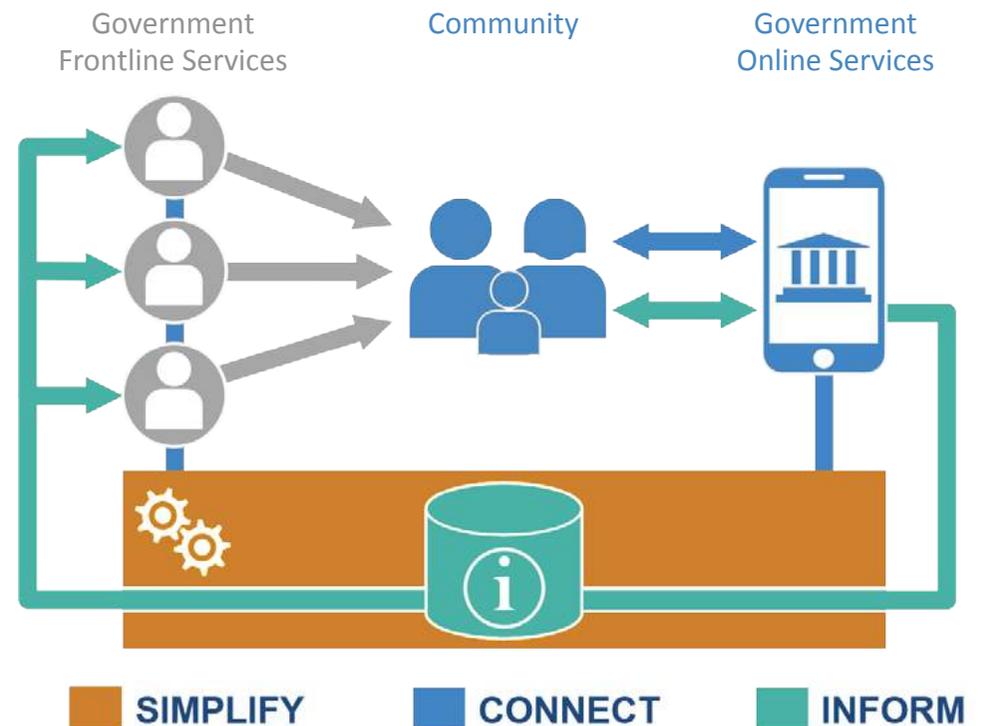
Like many others around the world, Western Australian government agencies do not offer enough services on-line, or have them interconnected with other agencies to provide a seamless experience. With more than one hundred agencies that operate largely in isolation, there is a real need for a change that will minimise infrastructure duplication, costly technology implementations and delays in meeting community needs.

Accordingly, the Western Australian government is embarking on a program to achieve the following goals:

Simplify how agencies use technology to support and deliver services through common platforms, systems and standards as part of a unified government;

Connect public sector agencies more closely with the community and each other through digital service delivery and system integration; and

Inform decision-makers, frontline staff, the community and the private sector through easier access to quality, reliable data and analysis.



To find out what the Strategy will deliver to realise this Vision, see page 14. To find out how successful delivery of the Strategy will be supported, see page 18.

Part 1 - Strategy

A vision for the community...

People will be able to transact securely online with government through a single digital portal at a time, place and using a device convenient for them. Their own personalised profile will provide people with immediate access to key information and services from relevant agencies that they've chosen. Privacy will be maintained by giving people the choice to opt in to use these services, and to have a significant degree of control over how much of their private data can be shared between different government agencies.

Frontline staff such as police, doctors and teachers will be supported with fast, mobile access to all the contextual information they need about a person's case, circumstances or

needs in order to provide enhanced, quality services that meet community expectations. Interoperable systems and automated processes will allow follow-up services and information to be provided quickly by other agencies.

Decisions about what and how services should be offered to the community will also improve. Data from across government will be analysed to enable holistic, fully-informed plans that support coordinated, cross-agency delivery. Access to consistent and reliable data about people who interact with multiple government agencies will allow the effectiveness and efficiency of service delivery to be better evaluated and focused.

Case Study: In 2012, the United Kingdom government first launched GOV.UK, a single portal to replace government websites and offer online services. By mid-2015, over 12 million individuals accessed the site every week, with over 30,000 people active on the site at any one time during the day. In 2014-15, GOV.UK (including the attached identity verification service) saved the British government £98 million (\$AUS 198 million), with many of the highest volume services at or approaching a 100% uptake of the digital channel.



Photograph courtesy of WA Police



Photograph courtesy of WA Health Department



Part 1 - Strategy

A vision for business...

Data classification and standards will allow more open data while maintaining confidentiality and privacy. Businesses, individuals and start-ups will have access to government data of a higher quality than ever before.

Robust, streamlined and transparent procurement will allow local, national and international businesses to provide ICT services to government more easily and at a lower cost. Agencies will actively seek innovative proposals through partnering, crowd-sourcing and other non-traditional approaches, particularly seeking to encourage investment in small-to-medium

sized enterprises within the Western Australian economy.

The focus of what the government buys will change, moving away from owning capital intensive goods like hardware and on-premises software, and towards a greater use of ICT services offered under a “pay as you go” consumption model. The government will also act more often as a single customer bloc to obtain greater value for money through negotiating lower whole-of-government prices for technology services.

Case Study: The Australian Federal Government launched its open data portal, data.gov.au, in 2011. Built on an open source platform, the site currently holds over 7,000 datasets, almost 4,000 of which allow direct API access by software and over 5,000 of which are free. Innovative use of government data from this source is rewarded every year through GovHack. The 2015 winner in this category was Question Time, an app by Team Executive Swivel that uses an interactive game to help people understand how individual federal politicians have voted on a range of public policy issues.

A vision for the public sector...

Government agencies will mature their ICT capabilities with strategic competency, business and market knowledge, and strong technical leadership. Agency business and ICT experts will work together to enable greater collaboration and strategic thinking. Digital training for all staff will accompany increased access to new technology options to facilitate better, faster and more reliable services to the community.

Connected infrastructure will provide mobility and flexibility, with staff in regional Western Australia receiving a comparable experience and quality of service as those in

the metropolitan area. Interoperable systems and networks will allow staff from different agencies to work together and share resources easily and securely.

Common systems that support similar business functions or clients across government will allow agencies to focus more of their resources on the unique services they provide to the community. A collaborative environment that allows expertise or under-utilised resources in one agency to be identified and re-used by another will further reduce the cost and increase the agility of ICT service delivery.

Case Study: In 2014, the Scottish Government awarded a contract for the creation and management of the Scottish Wide Area Network, or SWAN. A secure public sector network using commercial carriers, SWAN currently connects over 3,000 government locations across the country, allowing faster, safer access to secure systems and networks for staff.

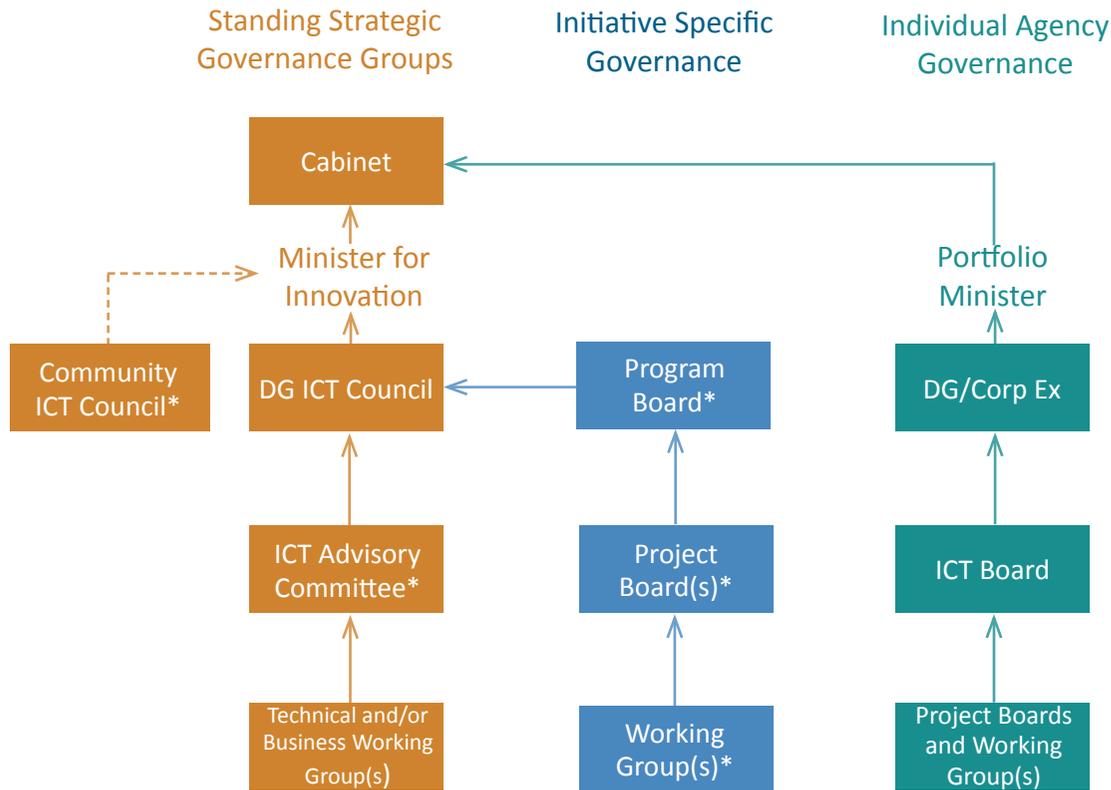
Part 1 - Strategy

Governance

The success of the Strategy will rely on strong ICT governance being in place in each agency and operating at a whole-of-government level. Staff involved in ICT governance should be properly trained, knowledgeable and empowered to make decisions and take action to ensure that projects and services are delivered according to plan, and that those plans are clearly scoped, appropriate, and meet identified business needs.

Responsibility for overseeing this Strategy sits with the Directors' General ICT Council,

reporting through the Minister for Innovation to Cabinet. Independent advice from the public and private sector will be provided by a new Community ICT Council. Both ICT and business experts from the top tiers of agency management will provide support through the ICT Advisory Committee. The Office of the Government Chief Information Officer will facilitate and provide executive support for these groups. Additional program and project boards will be established with cross-sector membership for specific initiatives within the Roadmap.

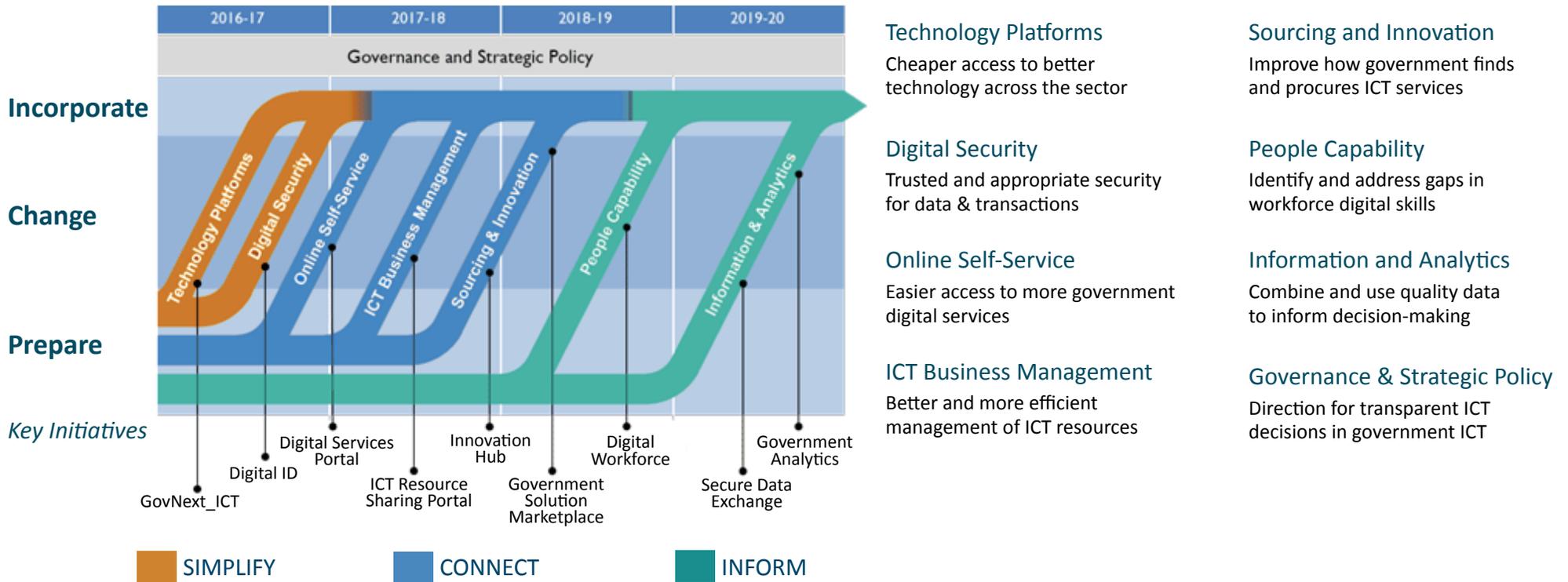


Each layer of governance is responsible for providing advice or oversight at the appropriate level to ensure:

- Proper controls are in place and exercised over the delivery of Strategy Initiatives and other projects;
- Changes to public sector capabilities, behaviour and culture are managed in line with Strategic Principles; and
- Agency and sector resources are prioritised and directed towards achieving Strategic Goals and realising targeted benefits.

Part 1 - Strategy

Roadmap Initiatives



Each Roadmap Theme will deliver one or more Key Initiatives intended to introduce new capabilities to the sector and community. This will involve a lot of change within agencies, which will need to be carefully managed at both whole-of-government and individual agency levels. Other initiatives within the Roadmap will prepare the sector for these key changes, or help agencies to integrate the new capabilities into their business-as-usual practices and service delivery.

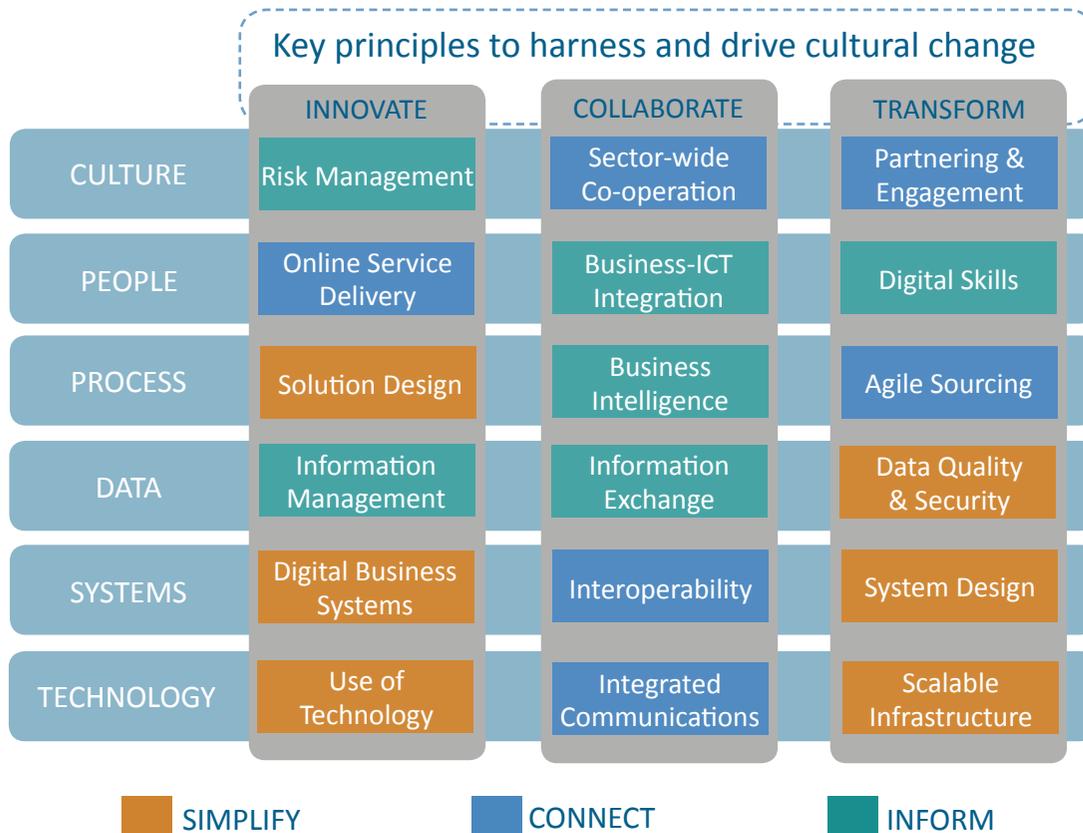
Over the life of the Strategy the Roadmap will evolve and be updated in line with progress and changes in technology and the public sector. All timeframes included in the Roadmap are indicative and high-level, subject to detailed planning and assessment for each initiative.

To find out more about the Roadmap Themes and Initiatives, see Appendix I on page 30. To find out about the Strategy's approach to implementing Roadmap Initiatives, see page 18. To find how Roadmap Initiatives will be funded, see page 28.

Part 1 - Strategy

Core Capabilities

The Strategy identifies eighteen different core capabilities, aligned with the three Key Principles across different business layers, which need to be developed and matured across the public sector in order to realise the vision of Digital WA.



Each public sector agency is likely to be at different levels of maturity for each capability, and will progress at different rates.

While the various Roadmap initiatives will assist in developing these capabilities, each agency will also need to undergo their own ICT reform journey, based on their own maturity levels, resources and business priorities.

This will be monitored through the Strategy's regular reporting process (see page 22) and any coordination required between agency activities and Roadmap initiatives will be facilitated by the OGCIO.

To find out more about these core capabilities, see Appendix 2 on page 39. To find out more about how capabilities will be assessed and measured, see page 22.

To find out more about the capability maturity model, see page 25. The maturity model will be fully documented in a subsequent document, Digital WA: Government Strategic ICT Capability Maturity Model

Part 1 - Strategy

Outcomes and Benefits

To ensure that the Vision delivers the benefits to the community desired by Government, key outcomes that span the Strategic Goals have been defined. The extent to which these Outcomes are achieved, and are supporting the Vision, will be measured through Key Performance Indicators (KPIs).

Simplifying the public sector ICT environment should result in less complex projects that are therefore more likely to succeed, as well as lower costs and better return on reinvestments due to less duplication and waste. Connecting agencies should improve major project

outcomes through improved collaboration, and allow digital services to be seamlessly delivered to the community.

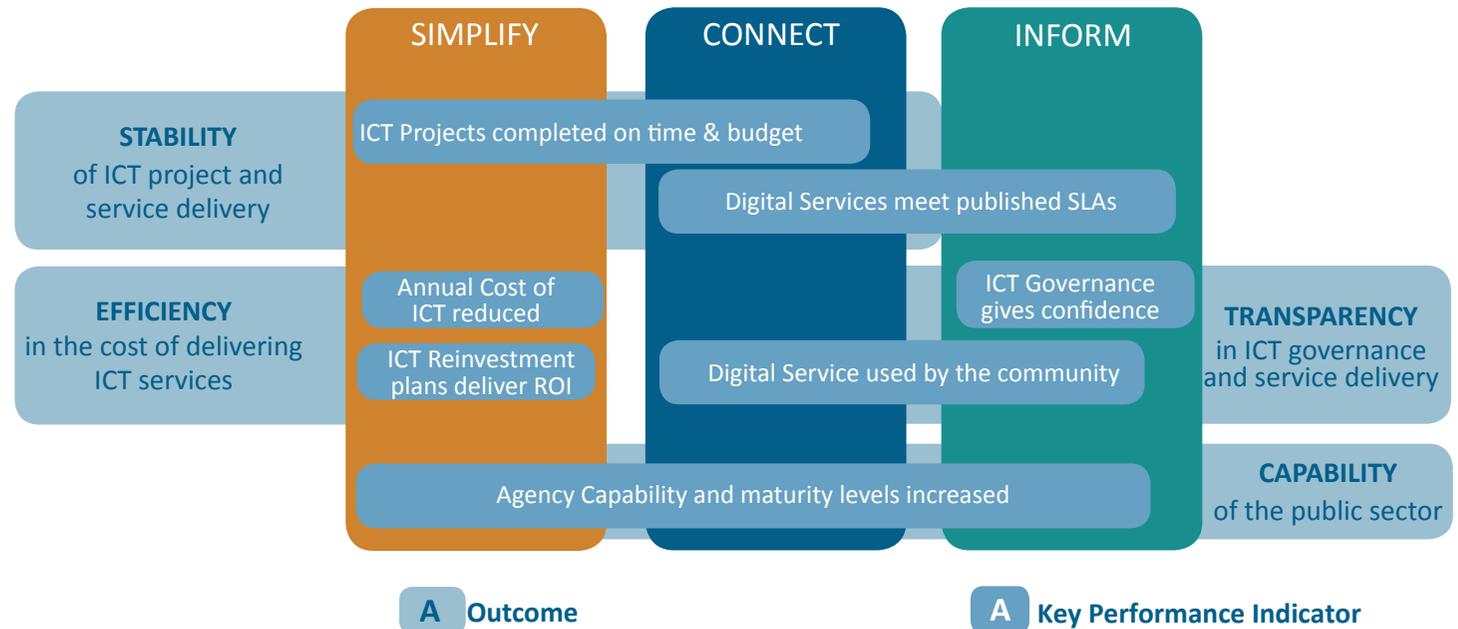
Information that is higher quality and analysed properly should enable better governance decisions, and support government digital services that provide data of real value to the community.

The capabilities developed and matured by the public sector throughout the life of the Strategy should in turn improve simplification, connection and information.

To monitor progress in improving ICT maturity across the sector, a reporting process will be implemented to ensure targeted benefits are realised.

The OGCIO, on behalf of the Directors' General ICT Council, will report to Cabinet every six months on how compliance with the Strategy is being achieved by the sector as a whole.

This report will include whole of government performance against the KPIs as well as metrics to track agency progress in delivering Roadmap Initiatives.



To find out more about the Key Performance Indicators and Targets, see page 22.



Part 1 - Strategy

Government Cloud Migration

Cloud computing has brought about a change in the economics of ICT services. Most major vendors now offer products as Software as a Service (SaaS), Platform as a Service (PaaS) or Infrastructure as a Service (IaaS) with users paying on a subscription basis. Many new solutions are only available as a service in the cloud.

The Western Australian Government is committed to the adoption of cloud computing and other pay-as-you-go services wherever they will deliver value and are fit for purpose. Using innovations in cloud computing and transformation within the ICT industry will transform the ICT capabilities of the public sector to be more agile, cost effective and focused on the

business needs of agencies delivering services to the community.

Projects can be delivered faster, capacity scaled up and down quickly in response to changing demand, and unneeded systems turned off immediately; all without needing to own or manage the back-end technology. Using cloud services can result in significant savings, but only if ICT practices change to take advantage of the benefits. A simple “lift and shift” approach will only result in higher costs due to paying for all services all the time, instead of only provisioning and paying for the capacity actually needed at any given time.

A Common Sense, Hybrid Approach

This Strategy is not a “cloud first” policy. As outlined in the Strategic Principles (see page 42) the first preference will be to reuse or adapt existing systems if suitable. However, using a subscription-based cloud service that meets the needs of the business will be preferred over buying new hardware or software.

Agencies should evaluate cloud and other pay-as-you-go options for all new or redeveloped ICT services and projects. Any decision to use cloud services should be based on the merits of the solution as it relates to an agency’s risk appetite, security requirements, operational needs, and value for money. A Cloud Policy will accompany this Strategy to help guide agencies in making these evaluations.

Not everything can go in the cloud. Some software requires special hardware to be installed onsite. Some services marketed as “cloud” aren’t, and would cost, rather than save, money. In some cases security, data sovereignty, accessibility or even legislation may prevent an otherwise suitable cloud service from being used.

Most government services can be supported using public cloud services operated by private vendors, with many certified to host unclassified data². Agencies can also consider virtual private clouds (locked environments created in public cloud infrastructure) or private clouds (offered on secure, dedicated physical hardware).

² Under the Australian Signals Directorate’s Information Security Registered Assessors Program (IRAP)

Reasons for agencies to use Public Cloud...

1. Development and Test environments that are easily turned off when not in use.
2. Rapid prototyping to develop proofs of concept with little upfront commitment.
3. Supporting special events that require large ICT capabilities.
4. Supporting business change programs that require new systems to be rapidly deployed.
5. Disaster Recovery (DR) environments that are rarely activated.

Case Study: In 2014, Brisbane hosted the world’s first G20 Summit to be fully supported in the cloud. A vendor delivered a virtual private cloud that delivered scalable, secure infrastructure for the two-day event, supported in their two public cloud facilities in Melbourne and Sydney. All ICT needs of the summit were met, and after the event all services were turned off at no further cost.

Part 2 - Implementation

Background

Public sector agencies in Western Australia have delivered highly innovative and successful ICT projects. In 2009, the Insurance Commission of Western Australia (ICWA) working with WA Police launched one of the first online traffic crash reporting service in Australia (www.crashreport.com.au). In 2010 multiple agencies were connected into a single network by the Department of Finance (Government Campus Network). Also in 2010, WA Police was used as a case study in how to implement business intelligence to support performance management by ICT research and advisory firm Gartner, Inc. More recently, in 2015, the Department of Sport and Recreation was used as a case study by Microsoft in how to successfully migrate to the Microsoft Azure cloud.



Photograph courtesy of Tourism Western Australia

Not all projects have been as successful, however. Two of the largest government projects in recent years - the Office of Shared Services, and the Fiona Stanley Hospital - cited problems with implementing or managing ICT systems as significant concerns. When government ICT has been compared to other states in 2015 by third-parties such as Intermedium and IT News, Western Australia consistently ranked at the bottom.

The Government of Western Australia decided to address this issue with the creation of the Office of the Government Chief Information Officer (Office of the GCIO, or OGCIO), which was formally established on 1 July 2015. The Office was charged with developing the state's first Government ICT Strategy, which has resulted in this document.

Western Australia aims to take advantage of the experiences of other state and national governments that are further ahead in their digital transformations, reusing and adopting those strategies that have been successful and hopefully avoiding issues that have caused problems. The maturity and diversity of technologies available today - particularly in the cloud, app and mobile spaces - is far greater and cheaper than ever before. And both the current and future workforce and community boast a far higher percentage of digitally literate people.

There are many challenges in attempting any large-scale transformation of how the government uses technology. The current economic climate is extremely tight, with few funds available for new investment, and the cultural inertia inherent in any large organisation will make planning and managing change of particular importance.

However, the time to act to improve government ICT is now. A failure to act will only result in Western Australia falling even further behind the rest of the country, at the very time when community expectations are being shaped by the likes of Apple, Google, and eBay.

This Strategy provides a clear future for all public sector agencies to work towards: Digital WA. By leveraging economies of scale and collaborating across the entire sector, the government will deliver real, measurable value and benefits to the community of Western Australia.

This document provides the high-level vision and approach to realising that future. Additional detail will be provided in subsequent releases, including annual Implementation Plans, a more complete Strategic Capability Maturity Model, and further guidance for public sector agencies in the form of policies, frameworks and guidelines.

Part 2 - Implementation

Approach

The success of this Strategy is heavily dependent on leadership, collaboration and the capability of the public sector as a whole. The OGCIO will create an environment, governance and reporting structure to ensure Roadmap initiatives are designed with a true whole-of-government perspective, and are deployed with as little adverse impact on agencies as possible.

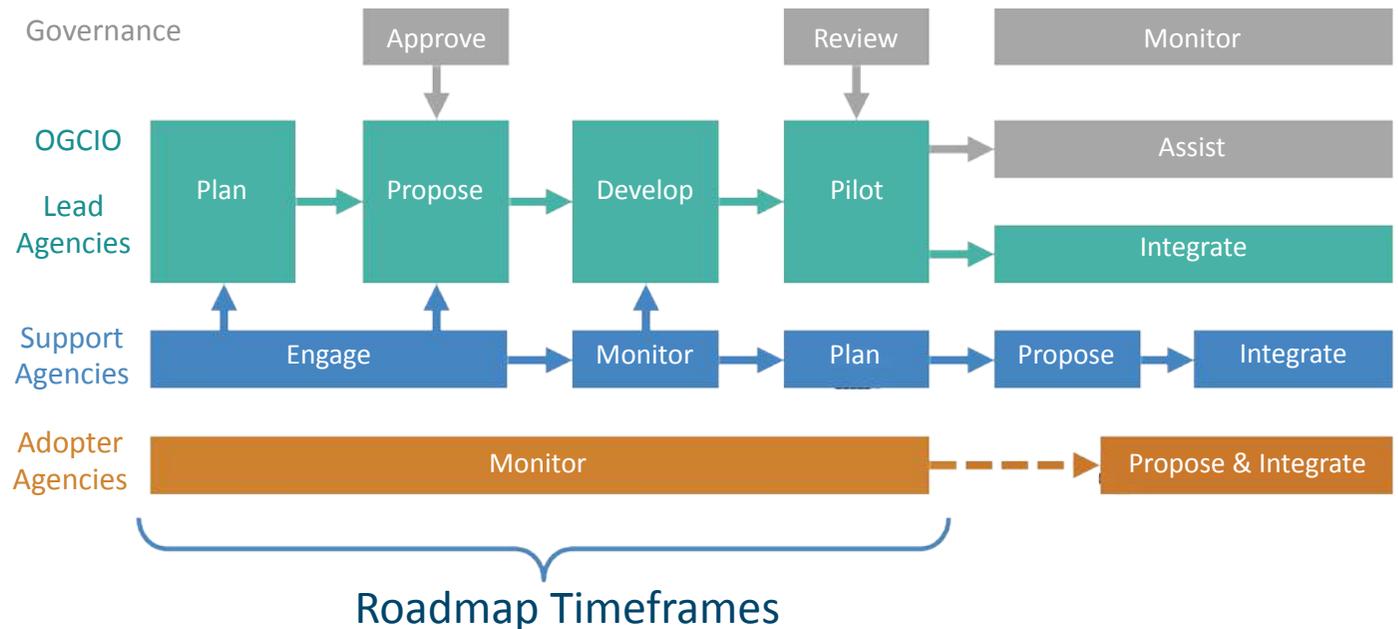
It is not possible for the entire sector to adopt each initiative at the same time, due to each agency being at different maturity levels in different capabilities. Therefore, for

each initiative, public sector agencies will classify themselves in various roles such as Lead, Support or Adopter. The OGCIO will work closely with Lead agencies for whom that initiative is a high priority and with the intention to pilot new platforms, frameworks or processes that deliver value.

Governance structures will ensure that support agencies are engaged throughout the initiative. Adopter agencies will plan implementation of new initiatives at an appropriate time based on the experience of Lead and Support agencies.

The timeframe for each initiative in the Roadmap (see Appendix I on page 30) only covers the period until the Lead agencies have completed the initial pilot.

Full adoption across the entire sector - or even across all business units within a Lead agency - will take longer and extend beyond the lifetime of this Strategy.



LEAD
Initiative is a top priority, committed to early implementation, key partner in planning and governance.

SUPPORT
Initiative is a priority, committed to implementing, and partner in planning and governance.

ADOPTER
Initiative is not a priority, will eventually implement, and will leverage lessons and results of others.

Part 2 - Implementation

Change Management

The OGCIO will play a significant role in managing the change introduced by this Strategy across the public sector. The impact of these changes will be closely monitored by established government governance committees (see page 24). However, change management within each agency will need to be led by that agency's senior management, with additional support and value added by the OGCIO as appropriate.

It is expected that this Strategy will introduce significant change across the sector, such as the shift away from capital intensive asset ownership towards pay-as-you-go consumption services (see page 26). ICT roles within government will change focus more on business service delivery, data management and a stronger commercial orientation due to major service-oriented contracts with ICT vendors. The extent of the change across the public sector should not be understated, but rather must be understood and managed.

Mandatory vs. Optional Changes

Anything within the Strategy that is mandatory for all agencies to comply with will be contained within an approved and published policy, framework or standard (for examples, refer to page 30 in Appendix I).

Cabinet or the Directors' General ICT Council may decide to make one or more initiatives, frameworks or platforms delivered through the Strategy operate on an opt-out basis, requiring a business case to be approved at one of those groups in order for one or more agencies not to be involved or comply.

In all other cases, involvement in Roadmap initiatives or use of platforms and frameworks delivered by the Strategy will be on an opt-in basis.

At all times, agencies will be expected to make their decision on when, if, and to what degree to be involved in different aspects of the Strategy based on sound commercial principles of value and benefits balanced against cost and risk.



Photograph used with permission

Part 2 - Implementation

Risk Management

Governance across ICT-related projects must ensure that scope, risks and benefits are properly managed. This requires the establishment of appropriate parameters to determine how much risk a project can accept and safely accommodate. The extent of uncertainty and risk in a project should reflect, but not be greater than, the extent of measurable benefits that the project or service is intended to deliver.

Proper governance of this Strategy requires a whole-of-government ICT Risk Management discipline that can manage project or sector-wide risks effectively. This responsibility has been delegated by Cabinet to the Directors' General ICT Council. To assist in this, a public sector ICT Risk Register will be established to record whole-of-government or individual agency risks that may impact the Strategy. The register will be accessible by agencies and the public to promote transparency and accountability across the sector.

Top Government ICT Strategic Risks:

Agency Adoption: Implementation will rely on the active support and involvement of agencies across the public sector. Agencies must have not only the executive will to participate, but also possess the capability, capacity, and financial flexibility to undergo the changes that the Strategy will introduce.

Industry Capability: The Strategy involves a shift towards a greater reliance on services provided by the private sector, in order to free up agency resources to focus on issues more central to government service delivery. The ICT industry must be able to support the government sufficiently during this transition.

Legal Barriers: Many Acts, Regulations and contract clauses that agencies enforce or operate under were created before digital technologies. Compliance requirements that prevent the digitalisation of business processes must be identified and updated in order to enable agencies to offer efficient online services.

Digital Disruption: The pace of technology change and innovation across the world is unprecedented. New technologies will be introduced during the life of the Strategy that will have an impact, either as a threat or an opportunity, and which must be managed to ensure that the Strategy remains relevant and achievable.



Photograph courtesy of
Tourism Western Australia

Part 2 - Implementation

Benefits Management

A benefit is defined as a measurable improvement resulting from an outcome perceived as an advantage by one or more stakeholders, and which contributes towards organisational goals³. In the context of this Strategy, therefore, the outcomes and benefits that the Strategy aims to deliver are:

³ Managing Successful Programmes (MSP) is a best practice industry framework

| Outcomes (Benefit) | Key Performance Indicators (KPIs) (Measure of Benefit) |
|--|--|
| Stability of ICT project and service delivery | <ul style="list-style-type: none"> • >90% of the ICT components of major projects are completed on time and within budget • >90% of government digital services meet or exceed agreed and published service levels |
| Efficiency in the cost of delivering ICT services | <ul style="list-style-type: none"> • 10% overall reduction in the annual cost of delivering current (2016-17) ICT services by the end of the Strategy, aggregated across the sector • >90% of ICT reinvestment plans deliver the targeted return on investment (ROI) from savings made through the Strategy or agency ICT reforms |
| Transparency in ICT governance and service delivery | <ul style="list-style-type: none"> • >90% of agency chief executives are confident in the quality of their ICT governance to inform good decisions • >75% of government financial and information service transactions with the public are done through digital channels |
| Capability of the public sector to respond to changing community needs | <ul style="list-style-type: none"> • >90% of agencies reach maturity level 3 or higher in all strategic core capabilities |

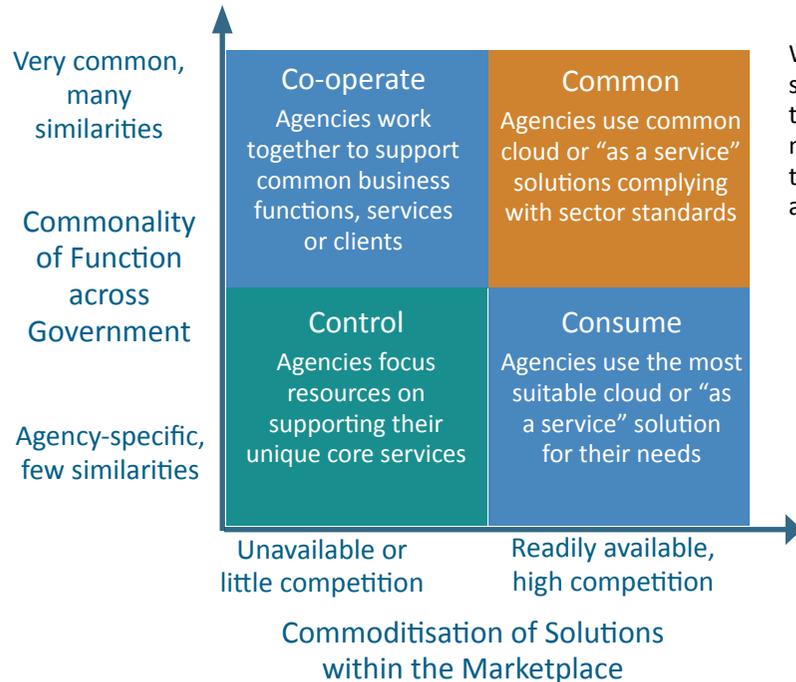
The KPIs are designed to measure the performance of the entire public sector, not that of the OGCIO, and will mainly be measured at the whole of government level, rather than agency or project level. Achieving these targets will require every agency implementing Roadmap Initiatives to take an active role in realising the intended benefits by incorporating the new capabilities within their standard operational practices.

A baseline measurement exercise will be undertaken by the OGCIO during the first year of the Strategy. This benchmark result will set the foundation year for the ICT Strategy. Any decision to raise or lower KPI targets will be made through the Strategy's governance process following the completion of that process. It is accepted that the proposed targets, above, will stretch the sector's ability to deliver.

Note: the baseline activity will be undertaken in collaboration with agencies, and will be used to develop and refine the data collection process so as to place the smallest possible impost on agencies while still providing enough data of sufficient quality to be of value to decision-making at the Cabinet and Director General level.

Part 2 - Implementation

Agency Benefits and Impacts



With more than one hundred different agencies delivering a wide range of services to the community, the public sector is both large and complex. Even though agencies have different purposes and provide different services, there are a range of business functions that are common across the sector, such as licensing. They are often also not unique to government or to Western Australia, with numerous competitive technology solutions available in the market, such as payment gateways, email services, and financial management systems. Many are available as a service in the cloud, with more pay-as-you-go options appearing regularly.

Agencies will be able to use newly defined frameworks delivered by the Strategy, such as a Government Enterprise Architecture, to decide where ICT resource investment should be prioritised, and identify any opportunities to obtain greater value. For example, some systems can be delivered more efficiently based on common platforms across the sector, or by using commercial cloud and pay-as-you-go services.

This will allow agencies to focus ICT resources on supporting their core, differentiating business functions or services. Agencies should always retain some control over key systems that directly impact on their ability to deliver their core services to the community.

This Strategy is not about creating an "ICT Shared Service". Every agency will retain responsibility for, and control over, how their ICT is delivered. But new service models and technologies, and greater collaboration across the public sector, will change how ICT is delivered and contributes value to the community.

If commercial pay-as-you-go services deliver the same or better value at a lower cost, using them can free up ICT resources and staff time to work on more important, strategic or agency-specific activities that deliver more value to the agency. This will most likely result in changes to ICT roles and structures within agencies.

The challenge for the public sector is to transform ICT from a business cost to a business enabler. The challenge for ICT staff is to transform from technology-focused implementers, to trusted advisors to business peers, effective brokers of internal or externally sourced ICT services, and change catalysts for their agency.

By following this Strategy and implementing the standards and systems delivered by Roadmap initiatives, each agency should realise their own benefits, in line with the high-level government benefits (see page 22):

- **Stability** – more projects should be on time and budget, with services delivered to agreed levels
- **Efficiency** – ICT services should cost less and deliver greater value to the community
- **Governance** – greater transparency and control over ICT investment and business management; and
- **Capability** – more capable ICT staff better able to support business agility and flexibility.

Part 2 - Implementation

Agency ICT Governance

Each agency should also have a governance structure to manage its own ICT activities, in alignment with this Strategy and their own business strategy. These should:

- Be formalised and operate within an accepted good practice standard or framework;
- Delegate sufficient authority to allow projects to function effectively, flexibly, and with agility;
- Clearly define the relationships between groups for delegations and decisions escalation;
- Include both ICT and business staff who are knowledgeable and empowered to make decisions;
- Contain clearly defined roles that empower members to allocate time to carry out their duties;
- Make business-driven decisions that balance whole-of-government and agency priorities;
- Operate consistently across all phases of a project; and
- Hold final accountability for the success or failure of the projects that they oversee.

Agency ICT Risk and Benefits Management

Government agencies are expected to align their risk and benefits management with an approved standard or framework (such as ISO 31000) for both specific projects and overall agency ICT governance.

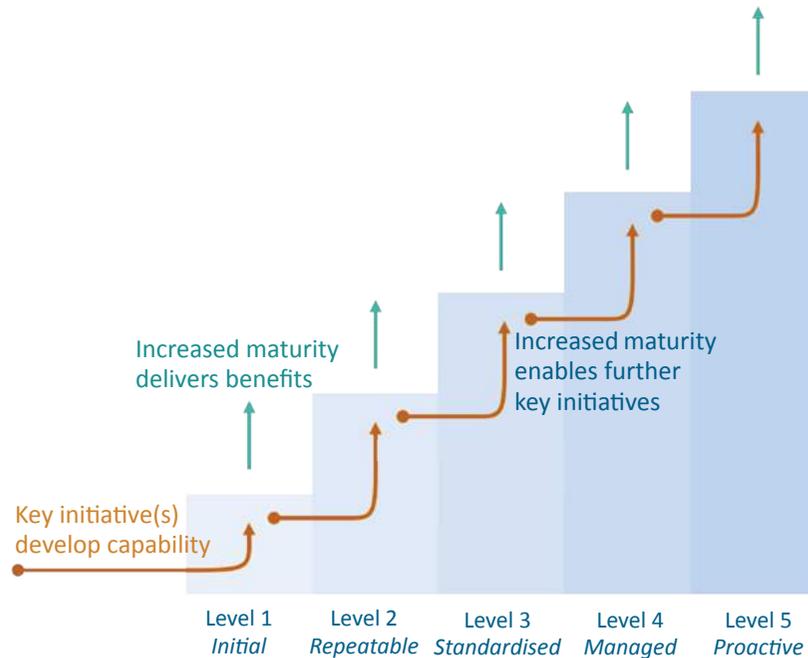
- Risk and benefits must be managed in an integrated fashion in and across agencies to minimise unexpected adverse consequences to other agencies or projects.
- Documented ICT risks and benefits must be specific to the project or service context, and with responsibilities for measurement, monitoring and action clearly assigned.
- Current and closed risks and benefits, and actions taken to manage them, must be reviewed at key milestones to identify, document and act on lessons learned.
- Projects must be permitted to take some risks and “fail fast” to quickly identify if solutions or methods are likely to be successful or deliver the intended benefits.



*Photograph courtesy of
Tourism Western Australia*

Part 2 - Implementation

Maturing Core Capabilities



Public sector agencies will be at different levels of the ICT maturity curve, with different capabilities at different points in time through the life of the Strategy. To reflect this diversity, the Strategy has been built around a Capability Maturity Model based on various best-practice models such as CMMI, P3M3 and COBIT, which commonly identify five levels of maturity for each capability.

Increasing the maturity of public sector and agency capabilities will be an iterative process. Individual Roadmap and agency reform initiatives will build

a certain level of maturity, which will enable some benefits to be realised, leading to financial savings or increased ability to reinvest into subsequent initiatives.

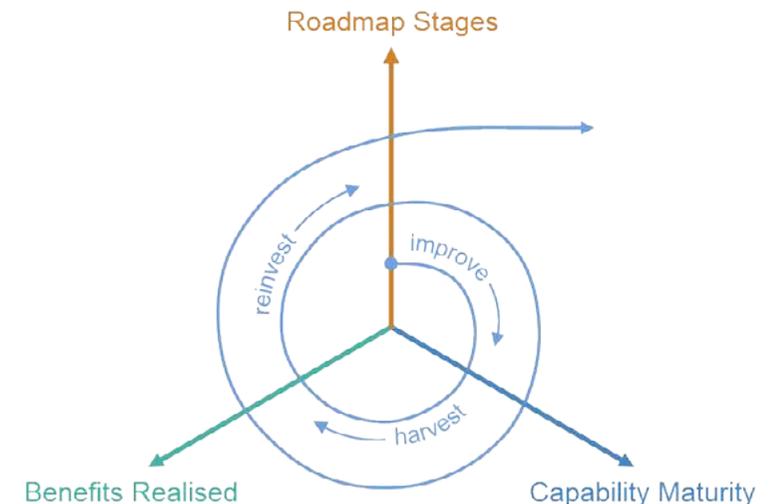
Determining each agency's maturity level for each capability will be an extensive yet valuable process, based on objective evidence. This assessment will help agencies identify and prioritise areas that require more or less attention, and in which areas they are progressing well.

Progressing up the maturity scale will be very different for each agency. The Roadmap, which identifies various initiatives intended to increase ICT maturity, may not always apply, depending on the status of ICT in the organisation.

Once determined which initiatives are relevant, each agency will need to plan, manage and run their own ICT reform program in parallel with the Strategy. This should not be done as an additional burden, but

part of the normal cycle of continuous improvement that all public sector agencies should undertake.

The Strategy creates a common highway towards a common set of goals down which all agencies will travel in their own fashion, each using the same tools, capabilities and platforms to improve their operations and the unique services they provide to the community.



To find out more about the individual Core Capabilities, see Appendix 2 on page 39.

The maturity model will be fully documented in a subsequent document, Digital WA: Government Strategic ICT Capability Maturity Model

Part 2 - Implementation

Financial Management

There are two key questions to be asked of this Strategy by every public sector agency. The first is “how can following this Strategy save money?” The second is “how will the costs of following this Strategy be funded?” The two questions are not contradictory.

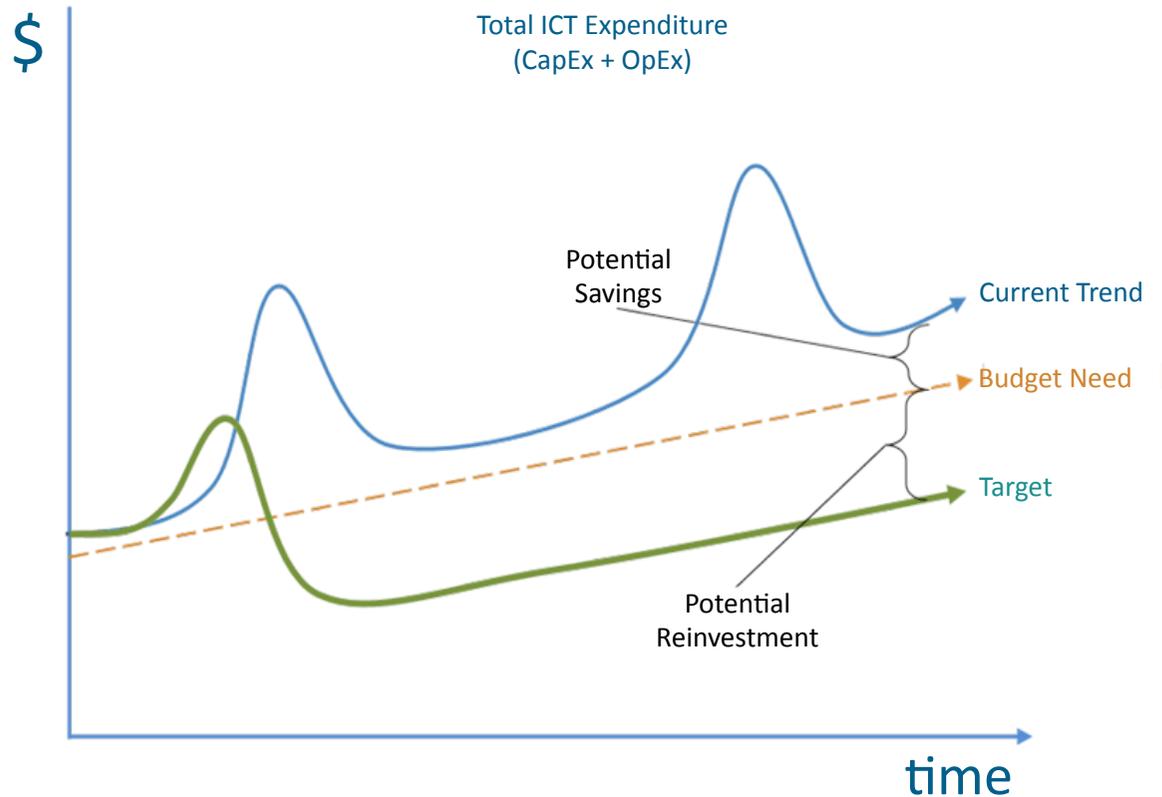
The Western Australian government spends more than \$1 billion on ICT annually, including staffing and other internal costs. In the current economic climate this continued scale of expense is unsustainable. Existing practices must change with the intent to cease large periodic injections of capital funds to buy expensive hardware and software. Further, to extensively customise and maintain an asset at full cost throughout its life, regardless of utilisation, is limiting government flexibility and innovation.

Saving money is not the primary objective of this Strategy, but is both desirable and achievable, with many current ICT procurement and implementation practices in government being inefficient in light of current technology and service offerings.

This will involve a move away from capital expenditure towards greater use of pay-as-you-go services. While this will increase operational expenditure in some areas, the outcome targeted through the Strategy is for overall ICT costs to be reduced, both within individual agencies and across the public sector as a whole.

The cost of ICT will increase over time, and there will be other increases in overall ICT spending, since more and better services for a growing population will require greater levels of ICT support. But reducing the per-unit cost of ICT will make the growth in ICT spending slower and easier to manage within the State’s budget.

Some savings generated through this Strategy – capital avoidance – will need to be retained by Treasury to assist the State’s bottom line. However, it is expected that agencies will seek to reinvest some portion of any cash savings to fund reinvestment in delivering better services to the community.





Part 2 - Implementation

Savings

By following the initiatives, principles and policies contained in and aligned with this Strategy, agencies will be able to manage and reduce ICT expenditure in the following ways:

Cost Reduction

- **Waste** - Identify and eliminate systems or practices that deliver no value
- **Duplication** - Use common platforms and systems for common functions and services
- **Digitalisation** - Offer services online, and automate business processes that do not require judgement
- **Decisions** - Use better information and analysis to make faster and better decisions
- **Leverage** - Use whole-of-government bargaining power to obtain better pricing for all agencies

Cost Avoidance

- **Consumption** - Reduce upfront capital costs by paying only for what is used, when it's used
- **Reuse** - Identify and reuse solutions and expertise from across the sector
- **Platforms** - Build and connect solutions faster and more easily on common platforms and standards
- **Prototyping** - Use sourcing options and agile methods to fail small and fast to find the right solution

Cost Prevention

- **Timing** - Schedule adoption of initiatives in line with existing replacement or investment schedules
- **Scheduling** – Reschedule existing workloads to free resources to support Strategy initiatives
- **Decommission** - Turn off any system that is no longer used or delivering value as soon as possible

Case Study: The Deloitte Access Economics report on Digital Government Transformation was launched in July 2015 by Prime Minister Malcolm Turnbull. It identified significant potential for savings in government through digitalisation, with the average cost of a face-to-face transaction being \$16.90, compared to a cost of \$0.40 per online transaction.

| Channel | Cost* |
|--------------|---------|
| Face-to-face | \$16.90 |
| Telephone | \$6.60 |
| Postal | \$12.79 |
| Online | \$0.40 |

**This is a Deloitte Access Economics calculation based on three international sources for government channel costs and consultations with government*



Funding

This Strategy is intended to result in a net saving to government over the full four year period, with a targeted reduction in annual ICT costs of 10% when compared to the baseline year of 2016-17 (see page 22).

However, in many cases there will be an initial upfront cost to implement or migrate to any new ICT service, even if using that new service will result in savings in the long, medium or even short term. But an eventual Return on Investment (ROI) does not guarantee the availability of additional funding to make that investment.

Agencies that identify the need to fund initial costs in order to benefit from the outputs and outcomes of this Strategy should seek funding by:



Reinvest - Savings generated through earlier stages of the Strategy, or through internal ICT reforms, should be made available to fund subsequent Strategic and reform efforts.



Reprioritise - Funding already approved and allocated to existing projects should be reviewed, with existing projects that will deliver less value to the agency being suspended, deferred or cancelled in favour of projects that will deliver more value.



Redirect - Existing operational funding to support services that have been, or will be, replaced as a result of Strategic or reform projects should be redirected to new initiatives.



Relocate – Agencies should negotiate with vendors for them to fully or partially fund implementation and migration costs, either as an investment to build capacity or as a deferred cost that will be recovered from the agency as part of ongoing service fees.



Request - If no other source of funding can be identified, then agencies should prepare and submit a request through normal channels for funding from Consolidated Funds, the ICT Renewal and Reform Fund (IRRF), Royalties for Regions, or another suitable state or Commonwealth source.

Securing any necessary funding for Roadmap initiatives will follow the same process. The OGCIO and Lead agencies will first seek to find sufficient resources internally, but may individual funding requests and business cases to government for each initiative if necessary. Funding may or may not be allocated from the IRRF, which, while it has purposes aligned to this Strategy, is not the sole funding source for the Strategy nor is it restricted to only funding initiatives contained within the Strategy.

Agencies will remain responsible for identifying and submitting their own funding requests. However the OGCIO will assist in coordinating a single consolidated submission if significant integration costs are identified across multiple agencies and economies of scale can reduce the overall cost to government.



Glossary

As-a-Service – a consumption-based service model for products that might previously have been owned and maintained by a customer, being instead provided by a vendor on a pay-as-you-go basis such as a subscription fee per user per month

Capability Maturity Model – describes an evolutionary path of increasingly organised and systematically more mature processes

Cloud Computing – a model for on-demand network access to a pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or provider interaction by the customer⁴, generally offered under an as-a-Service model

Data Analytics – tools and processes to analyse data in order to derive insights and conclusions that can support better business decisions (also referred to as Business Intelligence)

Data Classification – a process to categorise data according to confidentiality, privacy and security in order to effectively manage its storage and dissemination

Data Sovereignty – the concept that data is subject to the laws of the jurisdiction where it is physically stored, together with processes and policies to ensure that government data remains subject to Australian laws

Digital – use of modern information and communications technology (ICT) that connects people and devices for the exchange of information and delivery of services

Digital Channel – one or more online modes of exchanging information, including websites, social media, instant messaging, mobile and smart devices

Digital Service – a service or transaction where the interaction between customer and supplier occurs using digital channels, and is generally available for use outside of traditional business hours and premises

Enterprise Architecture – a practice to describe and model the structure, functions, information, systems and underlying technology of an organisation, and the interrelationships between these elements

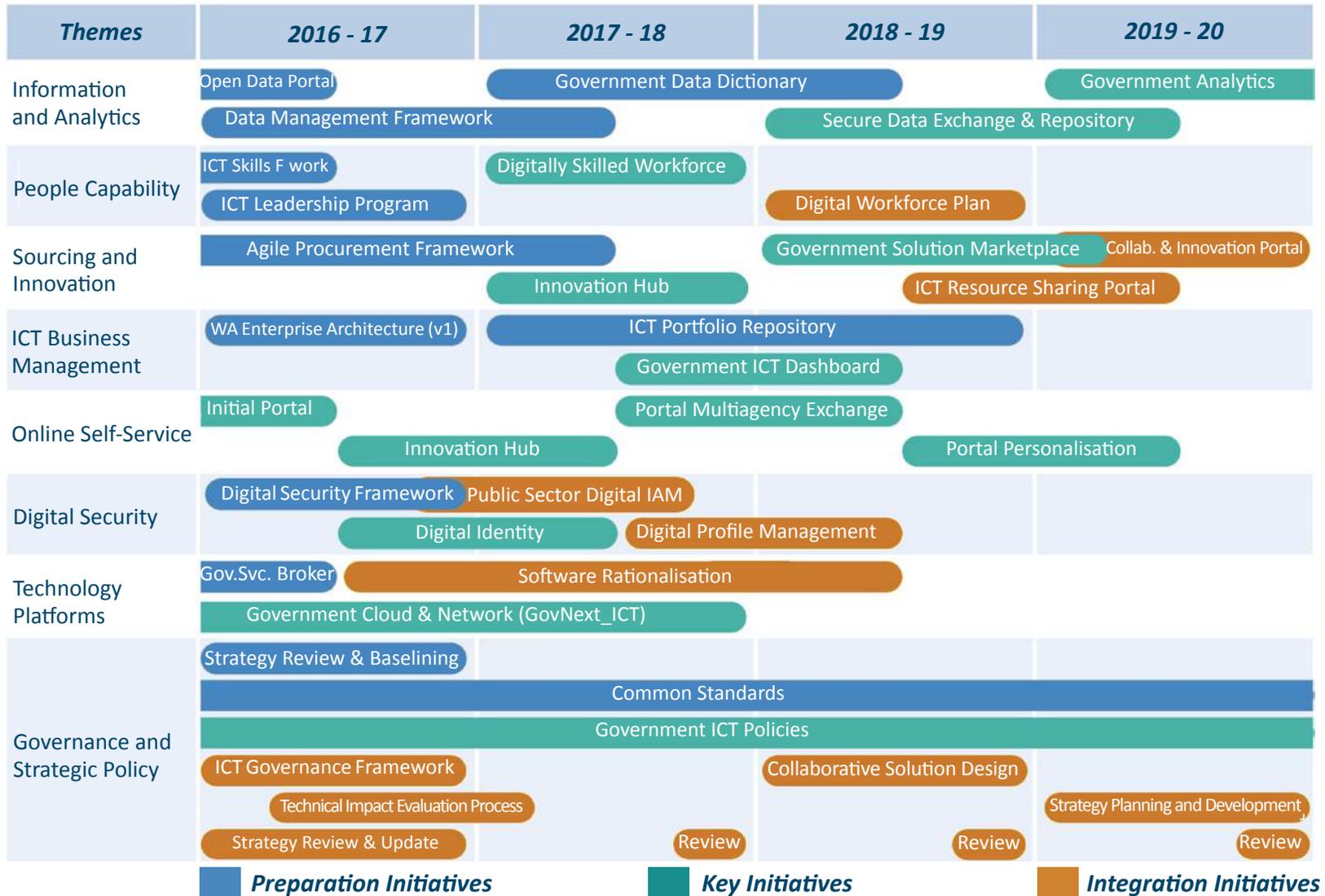
Interoperability – the ability for different technology systems to work together or exchange information on the basis of agreed standards as a means to achieve better system integration

Open Data – data that is made publically available with the intention of supporting value generation and benefit to the community as a whole, with appropriate consideration for confidentiality and privacy.

⁴ Based on the US Government's National Institute of Standards and Technology (NIST) definition.

Appendix 1 - Roadmap Themes

Roadmap Overview



Appendix 1 - Roadmap Themes

Theme 1: Information and Analytics

Key Initiative: Secure Data Exchange

To more easily share government data within the public sector securely and privately, a secure data exchange platform will be developed. This will allow agency systems to publish and read data according to strict business and security rules that will make interoperability practical and efficient. The platform will also act as a reliable “single source of truth”, a master reference of where different types of data common to systems across the sector are stored and how they can be accessed.

Key Initiative: Government Analytics

A whole-of-government Business Intelligence/Analytics capability sitting across multiple agencies’ data will inform operational and policy decisions, and lead to faster and more reliable service delivery. Development will initially focus on key datasets relevant to cross-agency activities, with future opportunities to expand the scope. The final solution will need to support both data scientists who will mine and analyse data at a deep level, and executives who need to be able to easily interrogate data at a high level.

Preparation:

Open Data Portal: The government’s Open Data Portal (data.wa.gov.au) will continue to evolve and mature as a key strategic offering to the community and business in order to facilitate innovation and niche start-ups.

Data Management Framework: A practical, common and documented approach to managing data across the public sector. Data will have defined ownership, well-understood processes, and clear business rules applied consistently, particularly where data can be shared between systems, agencies, or with the public in line with data classification and security policies. Note that Records Management is out of scope for this Strategy.

Data Dictionary: In order to be able to use and analyse data properly, it needs to be understood. Building on the foundations of the data management framework, a common data dictionary will act as a central reference library for interpreting government data.

Case Study: In 2016, the National Disability Insurance Agency (NDIA) plans to explore using IBM’s Watson system - a technology platform that interprets natural language information to make predictions and analyses - to understand and interpret the large volumes of information the agency will collect under the National Disability Insurance Scheme (NDIS). The system could also be used to provide real-time assistance to people with complex disabilities to navigate the NDIA’s systems.

| Initiative | 2016 | | 2017 | | | | 2018 | | | | 2019 | | | | 2020 | |
|----------------------------|------|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|
| | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 |
| Open Data Portal | █ | █ | | | | | | | | | | | | | | |
| Data Management Framework | █ | █ | █ | █ | █ | █ | | | | | | | | | | |
| Government Data Dictionary | | | | ↳ | █ | █ | █ | █ | █ | █ | | | | | | |
| Secure Data Exchange | | | | | | | | ↳ | █ | █ | █ | █ | █ | █ | | |
| Government Analytics | | | | | | | | | | | | ↳ | █ | █ | █ | █ |

Appendix 1 - Roadmap Themes

Theme 2 - People Capability

Key Initiative: Digital Skilled Workforce

A simple framework will identify digital skills and knowledge all staff within the public sector should possess. It will link job roles and business functions with specific areas of knowledge and skill, allowing specialist staff to remain current with the tools, topics and techniques being used by industry and the wider community. This will help to better understand community needs and deliver improved digital services.

Preparation:

ICT Skills Framework: A skills and competency framework based on international standards will be used to define requirements for ICT-related jobs across the public sector. This will simplify training, recruitment and development, and encourage greater professionalism through appropriate certification. Standardising how ICT skills and jobs are identified will also facilitate better sharing of expertise between agencies.

ICT Leadership Program: A training program to develop the skills and knowledge of CIO's, executives and other leaders across the public sector to help agencies operate effectively in the digital age. It will focus on ensuring that business decisions inform, and are informed by, the technology and innovation capabilities of agencies. The objective is for CIOs and other ICT leaders to possess sound business skills, and agency executives and senior managers to have an appropriate understanding of the potential and limitations of current technology.

Integration:

Public Sector Digital Workforce Plan: Based on an understanding of the skills and skill gaps within the public sector, the Plan will create a path for a public sector designed to meet the challenges of the future, not the past. It will ensure that the value of ICT staff is recognised, developed and shared across the sector, and that non-ICT staff can effectively use new and emerging technologies to deliver better services to the community.

Case Study: A survey released in 2015 by the UK National Audit Office identified a digital skills gap within the UK public sector. Despite the many digital services the UK government has successfully released, the lack of high-quality general and specialist digital skills in the public sector may significantly slow their digital transformation, delaying the realisation of anticipated future benefits.

Case Study: Programs based on the international Skills Framework for the Information Age (SFIA) designed to identify the ICT skills needed for different job roles, and provide the training necessary to address any gaps, form an integral part of the ICT Strategies of the Commonwealth, Queensland, New South Wales and South Australian Governments.

| Initiative | 2016 | | 2017 | | | | 2018 | | | | 2019 | | | | 2020 | |
|------------------------------------|------|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|
| | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 |
| ICT Skills Framework | █ | █ | | | | | | | | | | | | | | |
| ICT Leadership Program | █ | █ | █ | █ | | | | | | | | | | | | |
| Digitally Skilled Workforce | | | | ↳ | █ | █ | █ | █ | █ | | | | | | | |
| Digital Workforce Plan | | | | | | | | ↳ | █ | █ | █ | █ | | | | |

Appendix 1 - Roadmap Themes

Theme 3: Sourcing and Innovation

Key Initiative: Innovation Hub

A managed and flexible program to help the public sector foster innovation, the Hub will link agencies to new ideas and suggestions from the public sector, business, and the community. The initial focus will be on processes to review and assess ideas. Later development will focus on how to develop ideas determined to have sufficient value using new funding models and streamlined business processes.

Key Initiative: Government Solutions Marketplace

Once new and innovative solutions have been identified and sourced by an agency, they will be made easily discoverable and accessible across the sector in a whole-of-government solutions marketplace. Agencies will be able to find and reuse contracts, solutions and services that have been proven within the public sector. This will also facilitate government receiving the maximum discount possible through consolidated contracts.

Preparation:

Agile Procurement Framework: Government procurement will be streamlined, contract management strengthened and simplified, and sourcing options broadened to facilitate crowd-sourcing, open source solutions, and buying from start-ups and other small to medium enterprises (SMEs). New services or technologies will be able to be adopted as they become available, while retaining probity and contestability.

Integration:

ICT Resource Sharing Portal: An internal portal to help agencies share expertise and underutilised resources on a temporary or permanent basis. This will reduce duplication across the sector, help transfer knowledge, and increase the depth of expertise available to government.

Collaborative and Innovation Portal: This portal will make it easier to connect agency projects with expertise within the business and private community, and will support both the Innovation Hub and the Marketplace. Many project plans will be transparent and accessible, so interested entrepreneurs, start-ups and established businesses can be proactive in identifying and offering innovative solutions within a managed environment.

Case Study: The United Kingdom's G-Cloud initiative was launched in 2012. It is a consolidated marketplace for government agencies to easily find and procure cloud services from a range of suppliers under whole-of-government arrangements, without the need to undergo a full tender process. By 2014 the Cabinet Office estimated that agencies using G-Cloud had reduced their ICT costs by 50%.

| Initiative | 2016 | | 2017 | | | | 2018 | | | | 2019 | | | | 2020 | |
|-----------------------------------|------|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|
| | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 |
| Agile Procurement Framework | █ | █ | █ | █ | █ | █ | | | | | | | | | | |
| Innovation Hub | | | | ↳ | █ | █ | █ | █ | █ | █ | | | | | | |
| Government Solutions Marketplace | | | | | | | ↳ | █ | █ | █ | █ | █ | █ | | | |
| ICT Resource Sharing Portal | | | | | | | | | | → | █ | █ | █ | █ | | |
| Collaboration & Innovation Portal | | | | | | | | | | | | → | █ | █ | █ | █ |

Appendix 1 - Roadmap Themes

Theme 4: ICT Business Management

Key Initiative: Government ICT Dashboard

Based on information collected across the public sector, a publicly-accessible dashboard of ICT projects and performance will enable proper scrutiny and visibility of ICT spend within government. Initially targeting major projects and contracts within larger agencies, the collection and analysis processes will ensure that financial and project progress information is correct, complete and comparable.

Preparation:

WA Enterprise Architecture Framework (WEAF): Enterprise architecture is a way of describing the structure, functions and relationships of an organisation. The WA Enterprise Architecture Framework will be used as a common reference model and language for defining government services, and make it easier to collaborate across the sector by identifying similarities in business functions and services. Initially focusing on the business layer of architecture, and based on the Australian Government Architecture (AGA), the WEAF will be extended to cover systems, information, and technology layers.

ICT Portfolio Repository: To enable greater transparency and foster collaboration, a centralised repository will contain summary information on what resources ICT agencies possess, what projects are underway or completed, and what major contracts are being used to support different agencies. Information in the repository will be mapped against the WEAF, and categorised against other international standards to enable accurate assessments of the potential suitability of resources for cross-agency use, as well as summarising and rolling up information for whole-of-government reporting.

Case Study: In 2012, the US state of Washington began implementing the discipline of Technology Business Management (TBM) across major government departments. In 2013 it was made law for all departments with an annual IT spend of more than \$10 million to implement a TBM program, and in 2014 the state won the Champion's award from the TBM Council, a professional association supporting improved management of ICT along standard business lines. The state of Washington has achieved transparency of the ICT costs for over 44 government departments, even lowering the reporting threshold to annual ICT spends of only \$250,000.

Case Study: In 2014, the Australian Government launched GovShare (govshare.gov.au), a platform to allow Commonwealth, State and Territory government agencies to share policies, frameworks, software solutions and expertise through an online collaboration portal. It currently contains over 2,000 artefacts available for reuse across the public sector.

| | 2016 | | 2017 | | | | 2018 | | | | 2019 | | | | 2020 | |
|--|------|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|
| Initiative | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 |
| WA Enterprise Architecture (version 1) | | | | | | | | | | | | | | | | |
| ICT Portfolio Repository | | | | ↳ | | | | | | | | | | | | |
| Government ICT Dashboard | | | | | | ↳ | | | | | | | | | | |

Appendix 1 - Roadmap Themes

Theme 5: Online Self-Service

Key Initiative: Digital Services Portal

The Digital Services Portal will provide a single point to find government digital services, and make them easier to use. Payments to any agency for any transaction will be possible through a single gateway, and connected systems in the background will enable people to provide information once, and have it acted on by multiple agencies. As the portal matures, it will include personalised profiles to make transacting with government faster and easier, and configurable information and alerts “pushed” to mobile devices.

This initiative will have a critical dependency on the Digital Identity Platform delivered under Theme 6: Digital Security, and will be delivered in multiple stages.

The Departments of Transport and Commerce have already agreed to be Lead agencies in this initiative, focusing initially on licensing services across a wide range of professions and activities.

Case Study: The ServiceNSW online portal provides a single point of entry to use the many digital services made available by NSW Government agencies. In January 2016 the new personalised version of this service, MyServiceNSW, was launched, and in February 2016 the new consolidated payments gateway was activated. The new service allows government services to be paid for using PayPal and ApplePay, as well as credit card and bank transfer.

FIXING BACK END PROCESSES: Senior citizens in Western Australia receive a Seniors’ Card that entitles them to receive rebates and discounts on a range of government services including public transport and utilities. However people are currently required to request that these rebates be activated individually, submitting a variety of forms to a range of different agencies. This takes time for the individual, and costs the agencies time and money to process.

The Department of Local Government and Communities, which issues the cards, has committed to working with the Office of the GCIO and other agencies across the public sector to improve this process through back-office digital services and exchange between systems. By providing the information electronically in a standardised form to agencies like Water Corporation and Synergy, senior citizens will be able to receive their rebate or discount automatically, a digital service that requires no action on the part of the citizen.

| Initiative | 2016 | | 2017 | | | | 2018 | | | | 2019 | | | | 2020 | |
|------------------------------|------|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|
| | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 |
| Initial Portal | █ | █ | | | | | | | | | | | | | | |
| Portal Identity and Payments | | → | █ | █ | █ | █ | | | | | | | | | | |
| Portal Multiagency Exchange | | | | | | ↘ | █ | █ | █ | █ | | | | | | |
| Portal Personalisation | | | | | | | | | | ↘ | █ | █ | █ | █ | | |

Appendix 1 - Roadmap Themes

Theme 6: Digital Security

Key Initiative: Digital Identity Platform

A common platform will be established to creating and managing digital identities for businesses and community members to access government services safely and securely. It will allow relationships to be defined between digital identities, for situations like business ownership or power of attorney, and will facilitate online transactions through electronic signatures. The platform will ensure that private or classified data is only accessed by people authorised to do so.

Preparation:

Digital Security Framework: The framework will provide a common approach for security standards and data classification to be applied in systems. This will enable a balance between appropriate data security and improved collaboration and sharing, and support the use of cloud solutions. The framework will also establish or nominate standards and benchmarks for monitoring, detecting and responding to potential digital threats.

Integration:

Public Sector Digital Identity & Access Management: Collaboration will be supported by a whole-of-government digital identity and access management (IAM) platform. Digital staff identities will be stored within a secure, highly trusted common directory that can be used by any agency to identify users across the public sector. This will be facilitated through a common adaptive and context-aware control capability that will allow staff to seamlessly authenticate across multiple agencies, systems and platforms. Staff will be able to access the local or cloud-based systems they need safely and securely at any time or location.

Digital Profile Management: Digital identity platforms will be extended to create and manage digital profiles for the community. This will allow systems such as the Digital Services Portal to store personal preferences and permissions, and deliver customised services and alerts. The profile will allow people to control which services their identity is connected to, and what information about them can be shared between different agencies.

Case Study: Norway has had a single digital identity in place for its citizens in place since 2006. Estonia made the transition to digital identity as its primary form of identification before 2000. In Australia, the Digital Transformation Office (DTO) is looking at ways to improve the myGov system and make it more accessible. Almost every government in the world is currently tackling the issue of how to simply and securely verify the identity of citizens and business when transacting digitally.

| Initiative | 2016 | | 2017 | | | | 2018 | | | | 2019 | | | | 2020 | |
|----------------------------|------|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|
| | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 |
| Digital Security Framework | █ | █ | █ | █ | | | | | | | | | | | | |
| Digital Identity | | ↳ | █ | █ | █ | █ | | | | | | | | | | |
| Public Sector Digital IAM | | | ↳ | █ | █ | █ | █ | | | | | | | | | |
| Digital Profile Management | | | | | | ↳ | █ | █ | █ | █ | | | | | | |

Appendix 1 - Roadmap Themes

Theme 7: Technology Delivery

Key Initiative: Government Cloud and Network (GovNext_ICT)

Whole-of-government contracts for data centres, cloud and network services will be established under the GovNext_ICT program. Significant savings will come from consolidating into a smaller number of secure data centres, moving to a greater use of consumption charged scalable infrastructure, and by interconnected networks that will allow staff and systems to connect seamlessly between agencies, and across the state.

This initiative is intended to deliver a significant proportion of the Strategy’s intended savings for agencies, as current expenditure in the areas targeted makes up approximately 40% of government ICT costs.

Nine of the largest agencies, representing around 80% of the public sector by size, have already committed to involvement in GovNext_ICT. WA Police and the Department of Education are functioning as Lead agencies, with Support agencies consisting of the Department of Transport, Main Roads WA, Public Transport Authority, Department of Corrective Services, Department of the Attorney General, Department of Health and the Department of Finance.

Preparation:

Government Service Broker: The Government Service Broker will be a cross-agency function that will manage whole-of-government contracts for ICT services, and provide support for agencies to understand and transition to using those services.

Integration:

Software Rationalisation: Software licensing across the public sector will be reviewed, with an aim to consolidation and leveraging of the size of the public sector to obtain greater value for money, and greater mobility of licenses between all agencies, regardless of size or commercial nature. Applications can be rationalised within and between agencies, to ensure that licenses are sufficient and fully utilised.

Case Study: In 2011, the US Government launched the Federal Data Center Consolidation Initiative to reduce the cost of government ICT. By 2013, the US Government Accountability Office reported total savings in excess of \$1 billion had been generated through the initiative, which was expected to rise to over \$2 billion by the end of 2015.

| Initiative | 2016 | | 2017 | | | | 2018 | | | | 2019 | | | | 2020 | |
|---------------------------|------|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|
| | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 |
| Government Service Broker | | | | | | | | | | | | | | | | |
| GovNext_ICT | | | | | | | | | | | | | | | | |
| Software Rationalisation | | | | | | | | | | | | | | | | |

Appendix 1 - Roadmap Themes

Theme 8: Strategy and Governance

Key Initiative: Government ICT Policies

To ensure consistency across the public sector, some things must be mandatory for all agencies. These will be published in the form of official policies, and will be supported by guidelines and frameworks to assist agencies with implementation and compliance. Key policies include Open Data, Data Classification, Privacy, Digital Security, Cloud, Interoperability, Business Continuity & Disaster Recovery, and ICT Procurement. These policies and guidelines will be subject to ongoing review and updates to ensure continued relevance and value.

Preparation:

Strategy Review and Baseline: A sector-wide exercise will be done to establish a baseline from which to measure progress. Extensive consultation will be carried out to determine how well the Strategy is being implemented, what impacts it is having, and identify aspects of the Strategy that may need to be modified.

Common Standards: Common ICT standards for data, systems and processes across the public sector will be established. Compliance will help make services and systems interoperable, and will further enable cooperation, sharing and reuse of resources between agencies.

Integration:

Public Sector ICT Governance Framework: A clear framework to assist agencies in governing, planning and monitoring ICT projects and service delivery strategically, effectively and safely.

Technical Impact Evaluation Process: A clear process to help understand and assess the impact of proposed projects and business decisions on, and from, current and emerging technology.

Collaborative Solution Design Framework: A design framework will be developed to guide agencies on how to work together to plan and design multi-agency and whole-of-government solutions and processes. This will assist agencies to implement solutions more efficiently, and make it easier to collaborate during projects.

| Initiative | 2016 | | 2017 | | 2018 | | | | 2019 | | | | 2020 | | | |
|-------------------------------------|------|----|------|----|------|----|----|----|------|----|----|----|------|----|----|----|
| | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 |
| Strategy Review & Baseline | | | | | | | | | | | | | | | | |
| Common Standards | | | | | | | | | | | | | | | | |
| Government ICT Policies | | | | | | | | | | | | | | | | |
| ICT Governance Framework | | | | | | | | | | | | | | | | |
| Technical Impact Evaluation Process | | | | | | | | | | | | | | | | |
| Collaborative Solution Design | | | | | | | | | | | | | | | | |
| Strategy Review & Update | | | | | | | | | | | | | | | | |
| Strategy Review and Development | | | | | | | | | | | | | | | | |

Strategy Review & Update: The OGCIO will review the Strategy annually, and make any updates to overall direction, initiatives or performance measures as required.

Strategy Planning & Development: The world is unlikely to end in 2020, and the public sector must continue operating strategically, with the planned development of the next ICT Strategy.



Appendix 2 - Core Capabilities

Capabilities to support Innovation

Risk Management: Agencies should actively embrace a digital future for the state through accepting that all innovation involves risk. Risks should be managed by focusing more on potential benefits rather than potential harms, to provide greater value to the community.

Online Service Delivery: Government services and systems should be accessible at times and places convenient to users, securely, and using a wide variety of digital devices. Users' experience should be consistent regardless of the agency offering the service or the users' location throughout the state.

Solution Design: Business solutions should be based on a sound understanding of systems and processes across the sector, and meet both agency and government needs. Business processes should be improved as part of delivering effective business solutions.

Capabilities to support Collaboration

Sector-Wide Cooperation: The public sector should operate as a single organisation, balancing whole-of-government and agency benefits. Agencies should adopt similar standards and practices wherever feasible, and leverage resources across government to improve utilisation and returned value.

Business-ICT Integration: ICT and business staff within agencies should work closely together to ensure that business and technology plans and solutions are strongly aligned and contribute to the same outcomes, with engagement starting early in any project.

Business Intelligence: Agencies should act collectively to ensure information and systems are used effectively to realise maximum whole-of-government benefits. This involves agencies making informed decisions based on whole-of-government data and analytics.

Information Management: Agencies should actively work together to maximise the value of government information, while ensuring consistency across government for the reuse of data from acknowledged single sources of truth for different types of information.

Digital Business Systems: Technology solutions to business problems should be scaled to the size of the need, built on top of common technology platforms, and suitable for use on a wide range of end devices, including mobile ones.

Use of Technology: Agencies should use the most appropriate technology available to deliver and support their services. Systems should automatically configure to suit the device they are accessed from. Technology should be purchased under consumption and subscription models wherever possible.

Information Exchange: Agencies should seek to generate the maximum value from data for government and the community by actively working together to share and re-use data appropriately between systems.

Interoperability: Systems within government should be built to comply with state, national and international standards that support the exchange of data and reuse of components. Wherever suitable, agencies should support business functions using multi-tenanted and shared platforms.

Integrated Communications: Agencies should leverage a whole-of-government network to connect securely to other agencies and to service providers. The quality of service experienced should be comparable between metropolitan and regional locations.

Appendix 2 - Core Capabilities

Capabilities to support Transformation

Partnering and Engagement: Agencies should proactively and positively engage with peers, stakeholders, partners, suppliers and citizens to deliver better and mutually beneficial outcomes, seeking to identify and adopt innovative solutions and practices that have value.

Digital Skills: Public sector staff should have the right skills and training to understand and effectively use current and emerging digital technologies. Agencies should be supported by highly-skilled, professional ICT staff capable of providing trusted advice and effectively managing the sourcing and delivery of ICT services.

Agile Sourcing: ICT goods and services should be procured under a brokering model that is streamlined, flexible and agile. Agencies should identify the most suitable sourcing option that meets the needs of the business and delivers the best value outcome within a short timeframe.

Data Quality and Security: Agencies should understand and actively protect the value and integrity of government data. This includes proactively ensuring that data quality is maintained to a whole-of-government standard, and that access is properly controlled.

System Design: Technology systems implemented as part of business solutions should utilise cloud and pay-as-you-go options wherever possible. Agency solutions should build on and leverage core, whole-of-government capabilities.

Scalable Infrastructure: Agencies should have the capability to leverage the full ICT investment of the entire public sector. Service delivery should be supported on pay-as-you-go infrastructure that is cost competitive and easily resized to meet point-in-time business.



Photograph used with permission



Appendix 3 - Delivery Controls

Governance

Effective ICT governance must be strong, disciplined, strategic and appropriate to the size and type of project or service being overseen. Formal, structured governance of all ICT projects and service delivery must exist that ensures alignment with business priorities, includes suitably senior business and ICT representatives, and has well defined roles, responsibilities and escalation points. It is the responsibility of ICT governance to ensure effective planning, risk management, decision principles and monitoring is undertaken and reviewed.

Planning

Project and service planning must be consultative and sufficiently detailed to provide confidence in an outcome within an agreed scope. ICT project plans must be built on research, stakeholder input, and calculations based on realistic estimates of effort and cost, and must clearly identify both the critical path and all resources required for successful delivery of the approved scope. Master plans must exist for cross-agency or multi-project programs to ensure all interdependencies are included.

Risks and Benefits

Risks and benefits within any project must be identified and managed so as to maximise a project's or service's likelihood of success, as opposed to seeking to eliminate any risk of failure. Risk and benefit management must be integrated across projects and the sector, clearly documented, and regularly reviewed at key milestones to identify and apply lessons learned. The appetite to accept or avoid risks must balance the effort and results of risk mitigation with the potential benefits and rewards of successful delivery.

Principles

To help ICT governance groups operate at the right level and avoid too much focus on operational details, agencies and projects should create and use principles that guide day-to-day decisions and align them with project, agency and sector strategic priorities. These principles should facilitate clear delegation, agility and flexibility within an approved strategic context, by permitting project directors, managers or staff to make informed decisions within clearly delineated boundaries.

Monitoring

The performance and progress of ICT projects and service delivery should be monitored using clear, objective and easily measured key performance indicators within a meaningful context of inputs, outputs, and outcomes. All monitoring and reporting should enable progress to be objectively verified and regularly reviewed by governance and management stakeholders. Any identified project benefit should continue to be monitored after project completion, to determine whether benefits are being realised.



Appendix 4 - Strategic Principles

To successfully implement the Strategy, there must be consistency in the way business and ICT leaders consider options and make decisions. A set of clear, strategic principles allows decisions to be delegated to the operational and project levels, by ensuring that decisions that comply with those principles are in line with the approved strategic direction and intent. These principles have been constructed to reflect the values, behaviours and chains of thought that, if followed, will increase the likelihood of the Strategy's success.

In order to be effective, ICT principles should support delegated ICT decision-making:

- All agencies and projects should have clear, documented principles to guide staff in operational decisions that are in line with agreed strategic, agency and project directions and outcomes.
- Principles should be specific and provide direction in deciding between realistic and viable alternatives, and should not be simple missional statements of common sense.
- Principles should provide clear guidance in areas with the greatest potential to result in scope variation or misalignment with sector, agency or project strategy.
- Project principles must align with and support agency principles, which should support and align with whole-of-government principles, for consistent sector-wide decisions.
- Principles should be reviewed regularly at key milestones to ensure consistency at all levels and to monitor compliance, use and understanding by relevant staff.

Under this Strategy, the following whole-of-government principles apply to every agency. Individual agency ICT principles should be aligned with and support these principles, while extending delegation to cover areas specific to an agency's or project's scope.

1. Align to deliver and leverage whole-of-government technology, commercial and service benefits.

Agencies must balance priorities between delivering whole-of-government benefits and agency-specific benefits. Agencies must actively collaborate to deliver solutions that provide benefits for many agencies, rather than only for a few.

2. Comply with whole-of-government standards, methods and frameworks.

Agencies must comply with all policies, standards and frameworks approved and communicated under the Strategy. Agency standards or frameworks must align with and support whole-of-government standards and frameworks.

3. Reinvest to drive digital transformation; invest to drive business sustainability.

A significant portion of any funds saved through ICT reform within an agency should be retained and reinvested to fund digital transformation initiatives aligned to this Strategy, with sufficient ongoing funding to ensure sustainability.

4. Treat information as one of the State's most important assets.

Information is to be recognised and managed as an asset. All systems must ensure data is entered with integrity, stored and transmitted with appropriate security, and is easily accessible and discoverable to suitable search and analysis tools.

5. Design government services to be digital by default.

All systems and services must support easy access and use over the most appropriate and relevant digital channels.



Appendix 4 - Strategic Principles

6. Make decisions driven by business needs and informed by ICT capabilities.

ICT decisions must prioritise meeting business needs, while business decisions must prioritise practical ICT considerations. All significant agency plans should include appropriate business and ICT representation and consultation in the process.

7. If it can be shared, make it available to be shared.

All ICT resources, including staff expertise and underutilised assets, that can legitimately be shared for use by other agencies or the public must be made easily discoverable and accessible.

8. Source solutions using good PRACTICE.

The following prioritised sequence of options should be used when sourcing, stopping at the first option where sufficient business value can be realised:

1. Proof of concept – using existing solutions, open source, freeware, pilot purchase, etc.
2. Reuse – an existing solution in government that delivers good enough value
3. Adapt – an existing solution that can be slightly modified to deliver good enough value
4. Consume – new “as-a-Service” offering without significant ongoing commitment
5. Test – the market, taking into account the next two requirements:
6. (Improve – change business processes first before customising a procured solution; and
7. Commercial – buy a commercially supported solution that delivers good enough value)
8. Engage – suppliers to customise or develop a new solution.

9. Actively seek to leverage expertise from professional, peer and social communities.

Projects must actively seek to identify and leverage skills and expertise available in internal and external peer communities to improve outcomes, reduce costs, or improve communication during the design, development, testing, implementation or use of new or improved services and systems. This can include online communities of practice, crowdsourcing, consulting with professional industry associations, etc.

10. Seek, develop and maintain appropriate internal expertise.

Agencies must attract and retain appropriate ICT expertise so that business decisions can be made and informed by suitably qualified, skilled, knowledgeable and experienced staff. Agencies should seek to access and leverage this expertise within the broader public sector before seeking external expertise.

11. Use human-centric design, and machine-centric automation.

All systems and processes must be designed to prioritise the user experience of the targeted user base. Human involvement in an ICT-enabled system or process should be targeted at decision and analysis points, with automation targeting the capture and exchange of data between machines or systems.



Appendix 4 - Strategic Principles

12. Keep things we control simple; coordinate complexity we don't control to interface simply.

ICT systems or processes under the direct management of government must be made as simple as possible through the elimination of duplication, removal of unnecessary redundancy, and the avoidance of unnecessary change complexity. Systems or processes that are not directly managed by government will have potential complexity to government minimised through the appropriate use of standards, controlled interfaces and managed gateways.

13. Seek solutions that are fit for purpose, not fit for everything.

ICT systems and processes must be designed or selected to meet the known purposes for which they are intended (which includes interoperability across the sector and compliance with standards), and must not be designed to include, or selected due to, additional functionality or capabilities that are not required or desired within the immediate context.

14. Balance the consequential risks and benefits of all decisions.

The objective of ICT risk-benefit analysis must not be to reduce or minimise all risks, but to optimise the overall risk-benefit combination, in line with an agency's reasonable risk appetite and tolerance.

15. Make decisions that are environmentally aware and socially responsible for Western Australian.

Project and operational ICT governance decisions must take into consideration any likely impact on the environment, community, or state economy, with an objective of maximising benefits to the community.

This Strategy has been prepared by the Office of the Government Chief Information Officer with the assistance of Chief Information Officers from across the public sector. The Office would especially like to thank the following for their input and involvement in developing and reviewing the Strategy:

| CIO Advisory Committee | CIO Strategy Working Group |
|---|--|
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