

Navigating your way to the cloud

A practical guide for public-sector
organizations



Contents

Public-sector digital transformation	4
Four essential steps to a successful cloud adoption and deployment	5
Step 1: Make a clear, unambiguous statement advocating public cloud	6
Step 2: Follow standardized and transparent IT procurement processes	8
Step 3: Establish a written project and deployment plan with the selected CSP	12
Step 4: Enter into a compliant contract	14
Customer Case Studies	
City of Auckland	16
Australian Department of Health	18





Public-sector digital transformation

Digital transformation of the public sector is not about IT. It is about governments changing how they function in an increasingly connected, technology-intensive world and how they are using technology to adapt to new demands and expectations that citizens are placing on them.

Today's transformational technologies, like AI, blockchain, machine learning, data analytics, and the Internet of Things, all play a role. But focusing narrowly on technology for technology's sake underestimates the immense potential that digital transformation offers.

These technologies, which are all underpinned by cloud computing, do offer many cost and IT-resource efficiencies, but they also present many opportunities that go beyond pure financial or technical considerations. These opportunities

include enhanced sustainability and agility, better delivery of government services, and greater citizen accessibility and inclusion.

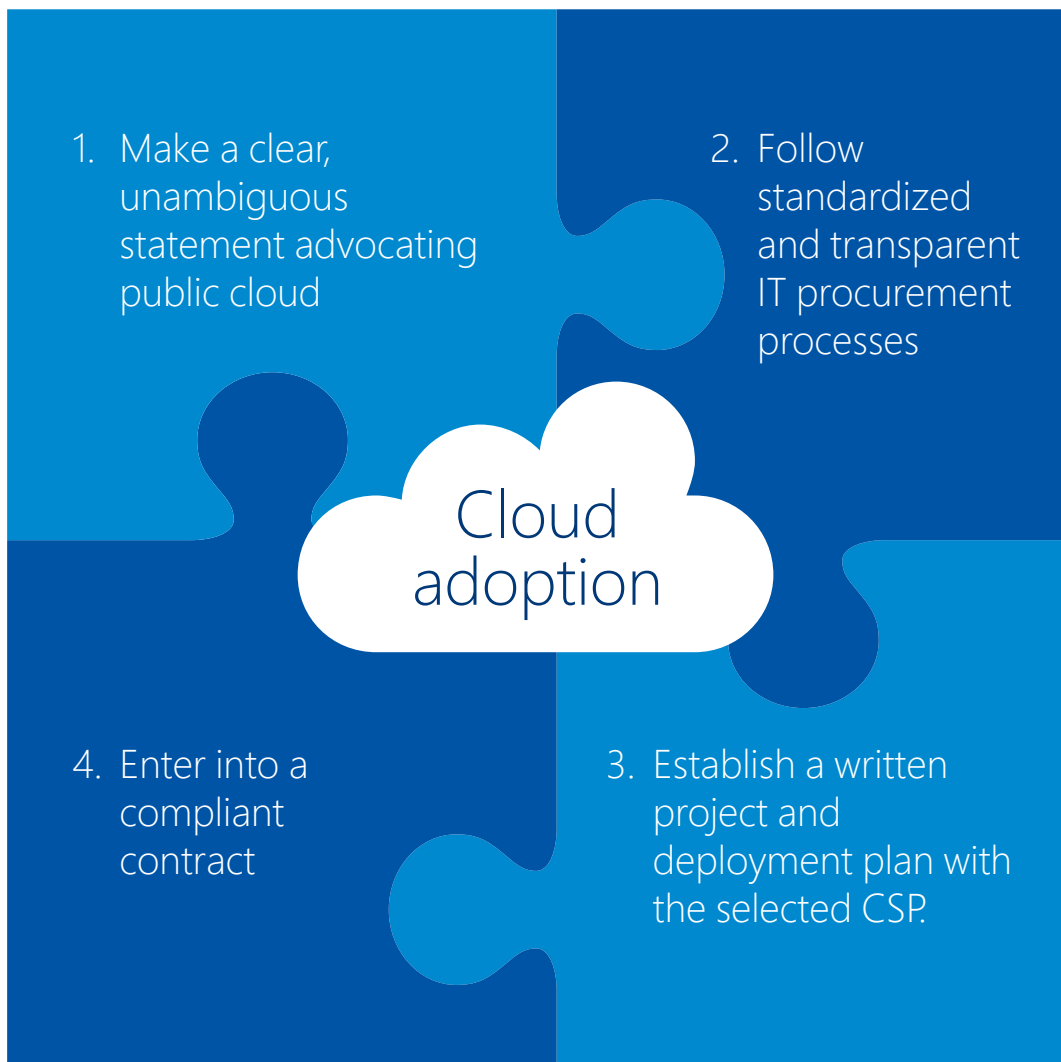
The services cloud service providers (CSPs) offer today can help governments and public-sector organizations build operations of tomorrow. But obstacles to public cloud adoption can delay the pace of change. These obstacles often result from outdated processes, misconceptions about the nature of cloud, or a lack of regulatory clarity.

Microsoft's role in the digital transformation

Microsoft has helped thousands of public-sector organizations move to the cloud and has deep experience in helping to deliver solutions that meet the compliance, risk and security standards of the public sector. **Drawing from our experience, this paper sets out a framework designed to help you successfully navigate the stages of a public cloud adoption project - from policy to procurement to contract - empowering you to achieve better operational and strategic outcomes.**

Four essential steps to a successful cloud adoption and deployment

Microsoft's experience working with public-sector organizations around the world has shown that successful cloud adoption typically involves four inter-related steps.



These steps are not entirely sequential, but rather are part of a dynamic process that involves ongoing consultation, collaboration and refinement by all the relevant stakeholders working together.

Step 1: Make a clear, unambiguous statement advocating public cloud

Cloud computing presents a scalable, accessible and sustainable way for the public sector to digitally transform their services and to drive efficiencies. Cost efficiency and security are often the focus of cloud first policies, but there are many other advantages provided by cloud computing. In order to reap these benefits, a clear, unambiguous statement advocating public cloud in the public sector should be made from the top, whether that's by a centralized government procurement office, coordinating ministry, or by the relevant department or organization. This is often necessary to remove uncertainty among public servants about the viability of adopting public cloud solutions for public-sector organizations. Without a clear statement advocating public cloud, it is easy for misconceptions around the nature of cloud to persist, which in turn prevent the adoption of cloud-based transformational technologies.

"Public Cloud First" policies

Governments around the world are recognizing the benefits of cloud-based technologies and are implementing policies to encourage their uptake. Australia¹, New Zealand², the Philippines³, Singapore⁴, the UK⁵ and the US⁶ (among many others) have adopted "public cloud first" policies for their public sector, encouraging use of public cloud solutions to improve business operations and efficiencies. For example, pursuant to a "public cloud first" policy, the UK's Ministry of Defense deployed Microsoft's Office 365 solutions, giving them productivity-enhancing agility in a highly secure online environment to "support [their] transition to a more cost-effective, modern and agile organisation".⁷

Another example of this leadership is the Federal Government of Australia, which in 2018 released a new Secure Cloud Strategy to encourage public agencies to adopt cloud solutions, stating that:

"The case for cloud is no secret to industry or government. A move to cloud computing – away from on premises owned and operated infrastructure – can generate a faster pace of delivery, continuous improvement cycles and broad access to services. It can reduce the amount of maintenance effort to 'keep the lights on' and refocus that effort into improving service delivery."

Often the focus on cloud computing is on IT cost savings, which definitely occur in many cases. But modern public procurement systems recognize that "lowest cost" and "best value" are not necessarily synonymous. In a similar vein, a cloud first policy should encourage public-sector organizations to look beyond narrow financial targets to encourage transformational outcomes. As the statement from the Australian government above shows, cloud computing enables greater agility, innovation, efficiency, focus, and accountability than traditional service-delivery methods.

This is true for all types of service-delivery methods, whether they currently have high levels of technology intensity or not. The best cloud first policies encourage a holistic assessment of the return on investment of cloud adoption.

A statement advocating cloud should come from the top

It is important that a statement advocating public cloud comes from the top. Whether it's a centralised procurement body or an individual public-sector organization in charge of its own procurement, having a clear unambiguous statement advocating cloud will help "green light" the digital transformation of your organization. Without a clear statement, public servants may be hesitant to adopt public cloud solutions and as a result, cut off their organizations from the benefits they could otherwise realize.



How Microsoft helps

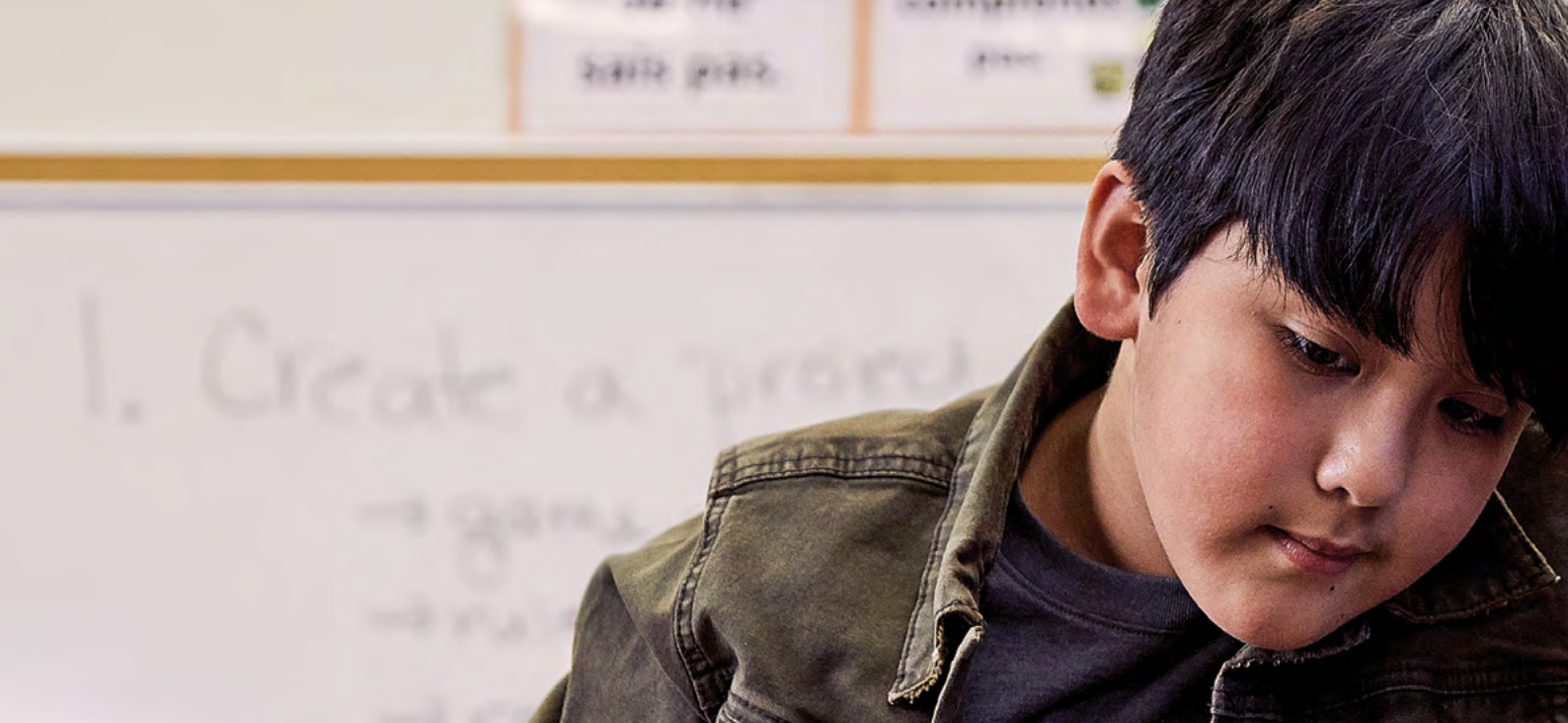
Microsoft has been privileged to work closely with many governments around the world to help them translate their vision for government digital transformation to reality. We discuss the challenges and success factors in governments moving to the cloud on a regular basis with senior policy-makers, and engage with leading organizations, like the World Bank, United Nations and APEC, on public-sector digital transformation. We regularly consult with governments on their digital transformation plans and cloud-first policies, both through formal consultations and through direct engagement with senior executives.

We are also committed to learning jointly with governments from the successes and challenges of implementing government digital transformation programs, including cloud-first policies. For example, we have recently reviewed the digital transformation plans of eleven governments across Asia, identifying critical

success factors in their realisation. This kind of systematic analysis of what drives success in the public-sector digital transformation – complemented by our extensive, on the ground experience working with governments – uniquely positions us to work with governments to anticipate and overcome the potential challenges in adopting and implementing cloud first policies.

We recognise that successful digital transformation programs in government cannot just involve technologies, but rely on having the most effective institutional, regulatory and policy frameworks in place. Microsoft's team of policy and public-sector experts stands ready to discuss with governments at all levels development and implementation of smart, cloud first policies that enable digital transformation strategies.

- 1 Australian Government Department of Finance. (2014). Australian Government Cloud Computing Policy. [online] Available at: <https://www.finance.gov.au/sites/default/files/australian-government-cloud-computing-policy-3.pdf>
- 2 Ict.govt.nz. (2019). Why agencies must use cloud services [online] Available at: <https://www.ict.govt.nz/guidance-and-resources/using-cloud-services/why-agencies-must-use-cloud-services/>
- 3 The Republic of Philippines Department of Information and Communications Technology. (2017). Circular No.2017-002. [online] Available at: https://dict.gov.ph/wp-content/uploads/2017/02/Signed_DICT-Circular_2017-002_CloudComp_2017Feb07.pdf [Accessed 28 Apr. 2019].
- 4 Infocomm Media Development Authority. (2011). Government outlines multipronged cloud strategy. [online] Available at: <https://www.imda.gov.sg/infocomm-and-media-news/buzz-central/2011/7/government-outlines-multipronged-cloud-strategy>
- 5 UK Cabinet Office. (2013). Government adopts 'Cloud First' policy for public sector IT. [online] Available at: <https://www.gov.uk/government/news/government-adopts-cloud-first-policy-for-public-sector-it>
- 6 Office of the Federal Chief Information Officer. (2018). Federal Cloud Computing Strategy. [online] Available at: <https://cloud.cio.gov/>
- 7 Microsoft. (2016). UK Ministry of Defence on the frontline of cloud-based data protection with Office 365 Advanced Threat Protection. [online] Available at: <https://www.microsoft.com/en-us/microsoft-365/blog/2016/11/09/uk-ministry-of-defence-on-the-frontline-of-cloud-based-data-protection-with-office-365-advanced-threat-protection/>



Step 2: Follow standardized and transparent IT procurement processes

Once you have a clear mandate, you will need to select a CSP that can meet the applicable compliance, risk and security requirements. Conducting proper due diligence will give you confidence that you have identified and assessed CSPs against the correct criteria for your organization and that you are maximizing your ability to achieve your ambitions. For the most part, procurement of cloud-based technologies and services will be no different than other procurement exercises, but it may differ in some respects to your traditional IT procurement exercises. As such, following a standardized and transparent procurement process is critical to ensuring successful adoption and legitimacy of the process.

1. Develop clear, objective criteria for assessing the CSP

1. Technical Capability, Expertise and Experience

Security of the proposed cloud solution is a core aspect of a CSP's technical capability. There is now a growing recognition that cloud services generally meet and even exceed the highest on-premises security profile, but that should be validated for each cloud service under consideration. Responsible CSPs can attest to robust security and data protection standards through international certifications such as ISO/IEC 27001, ISO/IEC 27018 and SOC 2 Type II.

2. Financial Stability

A CSP's financial strength affects its ability to provide continuity of operations and to compensate public-sector organizations for any service failures or breaches of contract. Contractual promises carry little weight if a CSP is not financially sound or cannot financially stand behind those contractual commitments.

3. Business Reputation

Cloud computing invokes a shared responsibility for security and service reliability between CSPs and public-sector organizations. When embarking on a long-term relationship of this nature, you will want to carefully consider the CSP's longevity and track record, including their experience partnering with other public-sector organizations. CSPs should be able to provide examples of successful cloud projects they have undertaken and demonstrate a long track record of successfully serving the public sector.



1. Develop clear, objective criteria for assessing the CSP (continued)

4. Capacity to Adjust to Change

CSPs also need to be able to demonstrate the ability to keep up with an ever-changing technology, risk and regulatory environment. Like any trusted advisor, they should have resources on the ground to help you understand the trends and developments that apply to your operations and offer products and services that help you stay abreast of changing developments and demands.

The above criteria are not all that different from the considerations that apply to private-sector organizations. But public-sector organizations also have unique concerns for procuring cloud-based technologies because of government's unique place in society. The Asia Cloud Computing Association (ACCA) has published a white paper with a set of seven principles and accompanying recommendations that address these unique concerns for procuring agencies.⁸ Microsoft endorses these principles and recommendations and encourages government procurement officers and departments to consider them when developing procurement rules and policies, conducting due diligence, and evaluating the suitability of CSPs for public-sector workloads. The principles are as follows:

Security

Information management systems security is fundamental for the public sector. Cloud services' security profile and performance should be assessed using the security profile of the current IT environment as a benchmark. Data classification, data location and data segregation restrictions should not be used as proxies for objective data security criteria.

Privacy and Personal Information

Governments and public-sector organisations have large quantities of personal data and, to maintain the trust of their citizens, need to ensure that privacy rights are respected. As such, CSPs must help public-sector organizations comply with applicable privacy laws and enhance protections and controls over personal information by demonstrating sufficient technical and organizational measures to protect data on their cloud platforms.

Availability, Integrity and Resilience

Governments need CSPs to provide cloud solutions that are reliable and resilient, reducing the risk of system compromise or failure. This can be achieved by holding CSPs to significant uptime guarantees and high service level standards in relation to their service offerings.

Regulatory Compliance and Global Standards

Technology solutions, including cloud services, must be measured to clear, verifiable benchmarks for quality and service reliability. CSPs achieve this by submitting to third-party audits against global certification standards and providing the results of those audits to their customers.

⁸ Asia Cloud Computing Association. (2019). From Vision to Procurement: Principles for Adopting Cloud Computing in the Public Sector. [online] Available at: <http://www.asiacloudcomputing.org/research/2019-research/2019-public-sector-cloud-procurement-principles>.

<p>1. Develop clear, objective criteria for assessing the CSP (continued)</p>	<p>Accountability</p> <p>Public-sector organizations must be accountable and transparent in managing public funds. Suitable CSPs help meet oversight requirements of coordinating ministries, auditors-general or state auditors by generating audit logs, sharing information of various third-party audits and ensuring a high level of transparency.</p> <p>Accessibility and Inclusion</p> <p>Technology adoption should support governments' broader societal goals. Public-sector organizations should expect CSPs to offer solutions that go beyond mere IT savings and help drive greater digital transformation to improve society. Greater accessibility to government services and inclusion of underserved and vulnerable populations are two outcomes that responsible CSPs can help governments achieve.</p> <p>Sustainability</p> <p>Governments have obligations to their citizens and the international community to improve environmental sustainability. Technology solutions should help them realize those commitments.</p> <p>Each of the principles will be important to consider in a procurement exercise but their relative importance will depend on each project. While the ACCA principles are a helpful starting point, public-sector organizations must realise that there is no one-size-fits-all assessment and every project will have its own unique considerations. For example, a defence department may prioritise security for its strategic communications platform but be more focused on accessibility and resilience for its recruiting and public relations channels. Public-sector organizations should therefore consider the specific project and its desired outcomes and tailor their criteria accordingly.</p>
<p>2. Leverage international standards wherever possible</p>	<p>Public-sector organizations should leverage international standards, wherever possible when assessing a CSP's suitability. Public-sector organizations should avoid adopting country-specific regimes as these can greatly impact the efficiencies associated with cloud computing and create burdensome processes and duplicative workflows. Adopting global standards and avoiding country-specific certification and accreditation regimes helps ensure that CSPs are held to high security and compliance standards, without creating unnecessary duplication and expense for both your organization and the CSP.</p>
<p>3. Recognize procurement model may have to be different than for traditional IT products</p>	<p>Public-sector organizations should realise that the nature of cloud services is inherently different in some ways to other goods and services procurement, including IT procurement. The consumption-based pricing model of most cloud services also requires differences in how expenditures for them are accounted for.</p> <p>While none of this means that standard procurement processes will be invalid, it does mean that these differences need to be taken into account when planning to procure cloud-based solutions.</p> <p>Traditional IT solutions require capital investment in hardware and relatively static software platforms and applications. This investment is then amortized over several years. Cloud-based services on the other hand do not involve significant capital expenditures, can be spun up or spun down as needed, and are priced based on consumption. These types of consumables are usually accounted for as operating expenses. Procurement models for capital projects are thus not often well-tailored for cloud solutions.</p> <p>On the other hand, cloud services are different than many services that public-sector organizations often procure. Unlike staffing and consulting services, there is less scope for customising cloud services. This is because the efficiencies offered by cloud services often mean that cloud infrastructure cannot be customised for every customer. But nor are they entirely commoditized because the offerings of one CSP will differ in meaningful ways from those of another.</p> <p>Still, standard models for procuring operating expenditure line items can usually be used for procuring cloud-based solutions, either unmodified or with minimal adaptations to account for their unique attributes.</p>

4. Allow for responsible data offshoring

Cloud services may process and store data in a different legal jurisdiction from the cloud customer. Public-sector organizations are understandably careful about government data being moved offshore. There are legal implications with some categories of data being transferred overseas. Also, where data resides risks changing an organization's legal rights over that data because of the effect of the law of the place where the data is located. Those implications can be managed and addressed to enable cloud adoption in those situations. But it will require transparency and information from the CSP to allow procuring agencies to make that assessment and discuss the necessary measures to take.

How Microsoft helps

We bring more than 30 years of enterprise-grade experience and capability to our products and services, having successfully delivered IT solutions for even the most complex projects and customers. Our cloud customers span all levels of the public sector at the local, regional, national and supranational levels. Our broad suite of cloud products and services are all built from the ground up to address the most rigorous security and privacy demands. We have global, hyper-scale, enterprise grade infrastructure that is secure by design, with robust financially-backed reliability commitments and our personnel have no standing access to customer data.

Microsoft provides unparalleled transparency for public-sector organisations. Each of our cloud services is supported with a range of materials, including product fact sheets, online trust centres, checklists and tools, to help public-sector organizations make an informed decision. In addition, we have subject-matter experts available to meet with you and your core stakeholders. They'll provide specific and detailed information on the technical, contractual and practical aspects of your proposed cloud project. Our Reports Hub also includes regularly updated information on numerous topics, including our accessibility and environmental sustainability activities.

Our understanding of the regulatory environment is market-leading, with a proven track record of successful cloud deployments that comply with regulatory and procurement requirements and global security and risk standards. Microsoft has large dedicated teams consisting of hundreds of lawyers, software engineers and policy experts whose sole mission is to identify and implement new cloud security and privacy standards across Microsoft's portfolio of cloud services.

We have a long and consistent history of being one of the first CSPs to implement major new cloud standards, including ISO/IEC 27018, and have the largest portfolio of compliance certifications in the industry. We provide our customers access to the audit reports from independent, third-party auditors who have certified our services against those standards.

A relatively new standard, ISO/IEC 19086-1, provides a structure for organizations to identify their own performance, service, data management, and governance objectives and requirements as they consider cloud adoption and to compare those criteria across potential CSPs. As with many cloud computing standards, Microsoft participated in the development of ISO/IEC 19086-1 and based on that involvement developed a Cloud Services Due Diligence Checklist that organizations can use to systematically consider requirements for cloud projects and structure cloud service agreements that meet their business objectives. The full checklist can be found here: aka.ms/cloudchecklist.download.

The greatest benefits of the cloud will typically be realized only through public cloud computing deployment models (which is why the statement in Step 1 should advocate 'public cloud' as a preference) rather than other deployment models, such as private or hybrid cloud. Still, our product offerings and features reflect our understanding that this journey will take time and a few public-sector workloads and datasets may never be appropriately deployed to the public cloud. For this reason, unlike some cloud service providers, Microsoft recognizes the value of a hybrid infrastructure. In fact, we help you simplify management across on-premise, hybrid, and public cloud deployments with a single administrator console – giving you the flexibility you need to move to the cloud at your own pace.

Finally, our approach to data center location is calculated to ensure that your data remains protected. We are transparent on where your data will be stored at rest. Our data center locations are selected after undertaking detailed analysis of many factors, including physical infrastructure capacity, seismic and meteorological considerations, political stability and legal environment. We advocate strongly on behalf of our customers and our contracts are drafted with specific terms relating to ownership, control, use and access to customer data to ensure that, regardless of its location, you retain sole control over your data and that all applicable legal protections remain intact, including state immunities.

Visit the Microsoft Trust Center to find out more about how Microsoft implements and supports security, privacy, compliance and transparency in all its cloud products and services.



Step 3: Establish a written project and deployment plan with the selected CSP

Despite being frequently overlooked in the cloud procurement process, establishing a written deployment plan with the selected CSP is important to ensure a successful and seamless adoption of cloud solutions. Unlike traditional shrink-wrapped or downloaded software programs that involve a one-time or infrequent purchase of a particular solution, adopting cloud-based technologies entails embarking on a longer-term journey of shared responsibility between you and your selected CSP. As such, it is helpful to mutually align up front on the roadmap and the rules of the road. Ideally, the procuring agency should start on the activities in this step as soon as permitted under the rules of the procurement process in Step 2 above.

Elements of successful project and deployment plans

1. Ongoing dialogue and clear deliverables

Conducting detailed discussions with your proposed CSP helps them understand your strategic and business objectives. As with any complex project, discussions should begin with the desired outcomes of the project. In other words, start out identifying what the project needs to do, not what it will look like. Once the business objective is identified, then going forward the discussion on outcomes can be balanced with the design of the proposed solution to achieve those outcomes. Clearly understanding how you intend to use a given service to generate value to your operations will be critical to ensuring that you procure the right solutions and services for successful adoption.

The appropriate stakeholders need to be involved in ongoing dialogue with your CSP to refine the solutions and develop an action plan for deployment. In addition to the IT and procurement teams, legal, risk and compliance professionals as well as appropriate end-users and others will likely need to be kept in the loop. This dialogue should start during the diligence and selection process (Step 2) and continue through contract signing and beyond.



2. Robust governance framework

A key component of the deployment plan should be a governance framework that clearly describes how and by whom the project will be managed and how those accountabilities will be monitored. It should require regular participation and dialogue between representatives of both your organization and the CSP. For complex or high-value projects, consider also including input or representation from coordinating ministries and even supreme audit institutions. The more complex the project, the more formalized the governance framework will need to be. Clear governance encourages proper information sharing and efficient problem solving. It facilitates the ongoing dialogue described above and helps drive collaboration.

3. Written document

A project and deployment plan provides a roadmap for the cloud project, including workstreams, timelines, accountabilities and governance. Developing a written deployment plan with the CSP before the contract is signed will also help see that services are deployed quickly after the contract is signed. By focusing on the logistical and practical matters that constitute the fulfilment phase of the relationship, the plan also helps identify matters that are best addressed and resolved prior to signing the contract and maximizes the value you can expect from the solution.

The exact format of a deployment plan is less important than the content. Complex projects often benefit from drawing up one or more term sheets, memorandums of understanding or framework agreements to memorialize understandings and guide further discussions. These plans are often non-binding but where appropriate are also part of definitive binding contracts.

Regardless of the format, it is important that the deployment plan be expressed in a written document. Reducing the plan to writing drives clarity and mutual understanding of the project for all parties.

How Microsoft helps

Our goal at Microsoft is not to try to build every solution on our own or to disrupt businesses by entering new industries. This is even more true in the public sector. Rather, our aim is to provide the building blocks and tools that people and institutions need so that they can go on to solve the most pressing problems of society. This means that we will only succeed to the extent that our customers succeed.

Because of this, Microsoft's expert team is on hand to support you throughout your transformation project. Our in-house teams include digital advisors, engineers, consultants, and support professionals that are exclusively focused on helping our customers successfully adopt our products and services and to solve, envision, and understand new possibilities. We can help you build your adoption plan according to established frameworks that include identifying stakeholders, prioritizing scenarios, building awareness and conducting end-user training. This process can help you to execute the best strategies for your organization across the

business, people, and technology aspects of your transformation.

As part of our commitment to your success, we also give you access to a wealth of content and resources, without additional cost, that you can tailor to your specific needs. These range from budgeting tools, sample adoption plans and guides to playbooks and internal awareness campaign collaterals that you can use to help you roll out solutions in your organization.

In addition, our vast partner network of thousands of systems integrators is unmatched in the industry. These in-house and third-party organizations include professionals who work only with public-sector organizations, so they are familiar with the types of issues that you might encounter and can help you anticipate and avoid unnecessary complications. They are experienced in working collaboratively with customers on cloud deployments and have developed proven engagement models to facilitate fast value-realization.

Step 4: Enter into a compliant contract

Microsoft understands that assurances made in response to selection criteria in public tenders and other selection processes are worth little if they are not backed up by appropriate contractual commitments.

The following terms are those that Microsoft believes are important for public-sector organizations to put in place in their cloud contracts. In practice, a CSP should help by demonstrating how their cloud contract meets these requirements. The following elements correspond to the due diligence points found in ISO 19086-1 and support the priorities described under the ACCA principles (referred to above).

Privacy and Data Protection	The contract must contain appropriate requirements to enable the public-sector organization to meet its own primary obligations over personal data (e.g. ensure that all personal information is dealt with in accordance with applicable privacy and data protection laws).
Security and Data Breach Protocols	The contract should contain appropriate commitments from the CSP to help ensure that information and data are kept secure. The cloud contract should also address what happens in the event of a data breach incident – including the applicable notification procedures.
Data Ownership	The public-sector organization's data should continue to be owned by the organization and not the CSP.
Data Use	The contract should be clear that data will be used only for purposes related to providing the cloud services and not for secondary purposes, such as advertising.
Data Access	The public-sector organization must have the right to directly access the data at any time on-demand and otherwise control who has access to their data and under what conditions.
Monitoring and Control	The contract should include commitments from the CSP regarding monitoring and control of the services and associated reporting.
Availability	As a matter of good operational practice and to ensure requirements regarding business continuity and resilience are addressed, public-sector organizations will want to ensure that the CSP makes binding commitments as to service availability, with specified remedies in the event of an unscheduled service disruption.
Subcontractors	The contract should include provisions to ensure that any CSP subcontractor is bound by the key contractual commitments. Ultimate responsibility for performance should rest with the CSP.
Business Continuity	In the interest of ensuring that underlying business continuity requirements are met, the contract should provide for a disaster recovery/business continuity plan together with appropriate testing processes.



Confidentiality

Public-sector organizations will want to ensure that the CSP makes binding commitments about the confidentiality of information stored in the cloud service.

Termination and Exit

Public-sector organizations will want to have rights to terminate the cloud services in agreed circumstances, the ability to transfer data to another CSP or on-premise location and commitments from the CSP to delete their information after termination.

How Microsoft helps

Microsoft's cloud service contracts have been developed based on feedback from thousands of customers. They are being used to deploy cloud solutions around the world across all levels of government and in the most heavily regulated industries. They include detailed commitments that address each of the above points.

Specifically, our cloud contracts commit, by default, that you can control who your data is shared with. Microsoft will not share data with third parties without consent or use it for any advertising or similar commercial purposes. Nobody other than you has unfettered access to your data and we do not give any third parties access to encryption keys. You keep all rights, including intellectual property rights, in and to your data and you own any patents and industrial design rights that result from shared innovation work with us. In short, your data remains your data and our contracts, in addition to our technical systems, are designed to make sure you keep control over it.

We understand that some cloud customers have specific regulatory requirements so our contracts include terms that automatically extend necessary terms to cover the most common regulations. For example, while GDPR is a European regulation we recognize that it has far-reaching extraterritorial application, so we applied our GDPR commitments to all of our customers globally. Similarly, many of our worldwide customers that handle healthcare information need to comply with HIPAA, a US regulation, so we automatically include the necessary terms for those customers.

Another key point is that, from the moment you sign a contract with us, your terms are locked and we will not change them during the term of the agreement. This gives you certainty that the agreement you sign with us on Day 1 remains stable and you will not have to monitor whether the contract terms change midstream. We work with thousands of legal and policy experts, auditors, and privacy specialists across the globe to help you with your regulatory challenges. Our expert team will be available throughout the contracting process to answer any questions you have about how our contract terms can give you confidence that you can comply with the requirements, standards and guidelines applicable to you as you help your public-sector organization transform.

CUSTOMER CASE STUDY

City of Auckland

Auckland, New Zealand, is home to 1.4 million people, with its population expected to double in the next 25 years. Auckland Transport, the regional transportation authority, estimates that roughly 800 cars are added to the city's roadways every week. To keep up with explosive growth, Auckland Transport is embracing technology to help residents efficiently move around the city. As it undergoes a digital transformation, the authority is turning to advanced technology, including the Internet of Things, predictive analytics, and social listening—all while working with Microsoft Services to develop a world-class transportation system for its community.

Over the past six years, Microsoft Services has helped Auckland Transport create a strategic roadmap that includes a robust cloud infrastructure and world-class citizen services. The authority moved its website to a hybrid cloud solution on Microsoft Azure to meet its scalability needs of more than 1 million visits per week. It built a MyStreet app that tracks passengers' favourite routes, notifies them of street repairs, and suggests detours. And it partnered with Microsoft CityNext partner LeapThought to build solutions that can better manage its large roster of public transportation projects and performance analysis of its public transport bus network.

As it continues to go digital, the authority's partnership with Microsoft Services continues to grow. Together, they're working on projects that take advantage of the Internet of Things (IoT), predictive analytics, social listening, and other cutting-edge technology, all with one goal in mind: to build one of the most advanced transportation systems in the world. "I value our partnership with Microsoft Services because of their capability, depth of experience, and support," says Roger Jones, Chief Technology Officer at Auckland Transport. "They also bring innovation and the advanced solutions we need to build a livable city."

Working with Microsoft Services, Auckland Transport is analyzing data from a variety of sources, including its HOP card ticketing system, weather and route timetables, and performance history, to ensure smooth connections for passengers. Using the AT Mobile app on their smartphones, customers can learn the current location of their bus, train and, soon, their ferry and its estimated time of arrival. They can also see what incidents are happening in the transportation network and obtain suggestions for alternate routes. "We have a vision that when you wake up in the morning, you should know what mode of transport is best to get you to your appointment," Jones says. "We want to let you know whether there

are delays—say, that the motorway is blocked—and the alternative options available to you."

At the same time, Auckland Transport is tapping into data to optimize its services. With detailed information about how buses are moving compared to their actual schedules, for example, the authority can quickly adapt to ensure buses are on time and maintaining a 10-minute service frequency. The authority is also using predictive analytics to ensure smooth connections between different modes of transportation, including buses, trains, and ferries. Combining historical patterns with real-time weather data, the authority can predict whether a ferry will be delayed—and then hold the bus until it arrives. "If you're riding a ferry home in the evening, we will know if you're likely to catch the bus at the other end, or whether we need to tell the bus to wait based on weather conditions such as high winds and tides," Jones says.

The authority is also using Microsoft cloud-based technologies in other ways. They are using IoT and predictive analytics to help drivers find parking—while at the same time alleviating traffic congestion. To help it continually improve, it plans to use Microsoft Social Engagement to automatically monitor customer comments on Facebook, Twitter, and other social media sites—aggregating these comments into visual dashboards via Microsoft Dynamics 365. Auckland Transport also plans to use social listening to identify traffic incidents reported by residents so it can take immediate action.

With more growth expected in the future, Auckland Transport is always looking for new ways to improve its services. For example, the authority is starting a pilot project that combines bot technology and natural language processing to respond to callers' questions in their native languages. Moreover, as autonomous cars go mainstream, the transportation authority is exploring edge computing to deliver traffic light information in real time to self-driving vehicles so they can move with the traffic signals.

"In Auckland, the digital city vision is about transport choices and how to get people from one place to another—whether that's through our assets or by other means such as driving, walking, cycling, or carpooling," says Jones. "In the future, we'll also integrate transportation options like Uber taxi fleets and autonomous vehicles, making it all work seamlessly together."

As Auckland Transport moves along its digital path, Jones says the transportation authority will continue to turn to Microsoft Services for the team's expertise and support. "We're betting our business on Microsoft," he says. "We've worked with Microsoft Services for a long time, and they've been engaged with us from day one. It's a true partnership, which is a rare find in this industry."

For more information, see: [City of Auckland embarks on a digital journey to transform citywide transportation](https://customers.microsoft.com/en-US/story/auckland-transport-government-consulting-services), available at <https://customers.microsoft.com/en-US/story/auckland-transport-government-consulting-services>.



CUSTOMER CASE STUDY

Australian Department of Health

There are 24.6 million people in Australia – and the Department of Health is focussed on keeping each of them well, and supporting them when they are not. The vision of the Department of Health (DoH) is simple; “Better health and wellbeing for all Australians, now and for future generations.”

The challenges associated with that, especially with a rapidly ageing demographic, are significant. Australia already spends more than A\$170 billion a year on health care – the most recent statistics show a 3.6 per cent year-on-year increase.

To ensure that the funds are well spent the DoH shapes Australia's health and aged care system through evidence-based policy, well targeted programmes and best practice regulation. For that it needs access to accurate, timely data and information systems able to inject efficiency and effectiveness into operations.

The DoH is undertaking a digital transformation that will provide just that while reducing its reliance on legacy systems with a transition to modern cloud-based computing. Using Microsoft's Dynamics 365 platform, the DoH remedies the problem of fragmented data sources which historically made it difficult for them to develop a holistic view of citizens and risked impacting the quality of service delivery.

The digital transformation now underway is helping to break down silos and provides on demand access to data, insight and materials that are essential to improved outcomes. It's also making processes more efficient, mitigating the risk of duplicate data entry, and providing a trusted and authoritative data source for reporting and compliance tasks.

One of the first areas being transformed is case management. Traditionally case management at the DoH was a largely manual process, with relatively poor workflow management, reporting, compliance and audit capabilities.

Working with Microsoft partner, Veritec, using Microsoft Dynamics 365, and employing an agile approach the DoH is rolling out new case management solutions that:

- establish a baseline enterprise case management capability enabling the ongoing delivery and support of case, complaint and investigations management solutions;
- deliver a core case management solution supporting the needs of one priority business area (the People Management business solution); and
- undertake analysis and planning for subsequent priority business area needs, and deliver a plan for the next phase of case management solution delivery.

Critically the case management solution is secure and ensures that there is a transparent audit trail of activity.

Beyond this solution, DoH is also looking to leverage the efficiency, transparency and compliance benefits of Dynamics 365 for its People Management systems, its Investigations and Fraud operations and the enforcement activities of its Tobacco Control branch.

Using Dynamics as the basis for case management supports all the steps in the work process such as capture, triage and resolution of issues, including referral and/or escalation as required. As a result DoH's workflow is improved with better and more efficient management and traceability of cases. Reporting has also been enhanced thanks to the accurate and timely responses which can be generated in response to Ministerials, Senate Estimate, media inquiries or mandatory and administrative reporting requirements.

The case management solution also provides robust foundations for the future. Legislative or regulatory change can be swiftly accommodated. The uniform platform also helps reduce risk; for example, it would allow employees to quickly confirm that a grant applicant in one area is not currently subject to a fraud investigation in another. This is because the solution reduces the likelihood of new data silos emerging as data captured in the system can easily be shared

For DoH's IT team, the single platform approach also reduces complexity while allowing rapid response to changing needs and health policy requirements. Already the success of the transformation project has enhanced the stature of the IT team within DoH.

For more information, see: Department of Health injects more clarity with Dynamics 365, available at <https://news.microsoft.com/en-au/features/departments-of-health-injects-more-clarity-with-dynamics-365/>.



Further Information

Useful links

Microsoft for Government

www.microsoft.com/government

Microsoft Trust Center

www.microsoft.com/trustcenter

Service Trust Portal

servicetrust.microsoft.com

Microsoft Reports Hub

www.microsoft.com/corporate-responsibility/reports-hub

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