

boomi

Achieving a Digital Economy

**5 Best Practices to Speed Government
Digital Transformation With Integration
Platform as a Service**

Cloud-native integration lets agencies connect data and systems with speed and agility. This ebook outlines five best practices to modernise with cloud integration.



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Focus on Data and Cloud Modernisation

Across Australian and New Zealand (ANZ) jurisdictions, modernisation of agencies' information and communications technology (ICT) through cloud adoption is well underway and never before have governments put such pronounced focus on using data to achieve policy objectives.

This epic shift is reflected in a variety of policies and strategies:

The Focus on Data

Data is regarded as so important to the future of Australia's digital economy that the Ministers responsible for ICT and digital initiatives in each jurisdiction meet as a sub-group of the National Cabinet. This **Data and Digital Meeting** helps ensure cross-jurisdictional collaboration on key data issues, including data sharing, security, and privacy.

Chief Data Officer Appointments

At both the Whole-of-Government (WofG) and agency levels, the role of **chief data officer** (CDO) has been created to lead efforts to improve data collection and analysis.

Cloud Policies

Cloud adoption is widely recognised by governments across Australia as being vital to achieving more cost-effective and responsive ICT infrastructure and applications, and most jurisdictions have 'cloud-first' policies, which drive agency adoption of cloud by requiring them to implement cloud solutions wherever they are fit for purpose.

The Federal Government released its Secure Cloud Strategy in 2017 to provide agencies with a framework for transitioning their on-premises, legacy systems to the cloud.

In a more recent development, NSW government agencies have been mandated to utilise public cloud services as the default option under the government's "public cloud first" policy.

IRAP

To help ensure security, IRAP (Information Security Registered Assessors Program) requires that cloud vendors submit their technology for lengthy evaluations. It is extremely difficult (and rare) for agencies to select cloud solutions from a non-IRAP assessed supplier.

“
Data needs processing, just as oil needs refining. Data will power much of the transformative technology of the future, like artificial intelligence, machine learning, and predictive analytics. Data doesn't need huge refineries, but it does need smart people and businesses and digital infrastructure.
”

Prime Minister Scott Morrison,
Addressing the Australian Financial Review Business Summit,
9 March 2021

The Weak Link of Legacy Integration

For decades, agencies have connected systems and exchanged information using custom coding, FTP and flat file integrations, as well as legacy on-premises middleware.

These outdated integration approaches are difficult, time consuming, and costly. They don't provide the scale that agencies need in the faster and more agile digital era. Nor do they provide flexibility to tap into new data sources (such as Internet of Things (IoT) or the ability to use the rapidly expanding capabilities of artificial intelligence.

Programing for legacy systems often requires specialized and increasingly scarce skills and can't be readily extended to additional systems. Maintenance and troubleshooting chews into IT productivity. Traditional middleware such as an enterprise service bus (ESB) is engineered for on-premises systems — not today's best-of-breed cloud applications.

Despite such shortcomings, many mission-critical legacy applications will need to remain in place for some time yet. As agencies move to hybrid IT such legacy systems will need to interoperate with new cloud applications that exist in both public and private clouds.

Currently, vast volumes of government data remain in agency application silos. Because these applications aren't connected, administrative and IT personnel spend untold hours manually looking up and aggregating data.

In the USA, a [Johns Hopkins University study](#) found that federal agencies spend three times more time gathering data than they do analyzing it.

Government ICT leaders recognise that if they wish to succeed with cloud-based modernisation and unlock data to streamline operations, reduce costs, support evidence-based policy-making, and better serve citizens, they need to be innovative.

“
Federal agencies spend 3X more time gathering data than they do analysing it.
”

[Johns Hopkins University study](#)

iPaaS Is Rewriting the Rules of Integration

Integration platform as a service (iPaaS) has grown exponentially in recent years to replace traditional integration at thousands of private sector companies, as well as universities and nonprofit organisations.

According to [IT research firm Ovum](#), that growth will continue at a 60 percent compound annual growth rate (CAGR) to 2023. This growth far outpaces spending on new deployments of conventional on-premises middleware.

iPaaS offers government agencies a faster, more agile way to connect data, applications, processes, people, and devices. Characteristics of a true iPaaS include:

Cloud-Native

A platform architected for the cloud from inception readily provides scalability, high availability, and built-in redundancy.

“Cloud-washed” solutions (those which were not originally cloud-based and which now have a ‘vener’ of cloud) just cannot match the efficiencies and agility of a true cloud-native integration platform.

Open

To effectively connect the myriad current and emerging applications, data sources, and devices, iPaaS needs to be application- and endpoint-agnostic. Your iPaaS should not lock you into using applications or cloud platforms from specific vendors.

Low Code

ICT teams are under pressure to do more, faster, to support never-ending requests. Speed has always been expected (and even more so post the experience of COVID 19), but code-heavy legacy approaches can't support speed. Low-code development slashes the time needed to integrate applications and data, helping deliver projects quickly and cost-effectively.

Unified

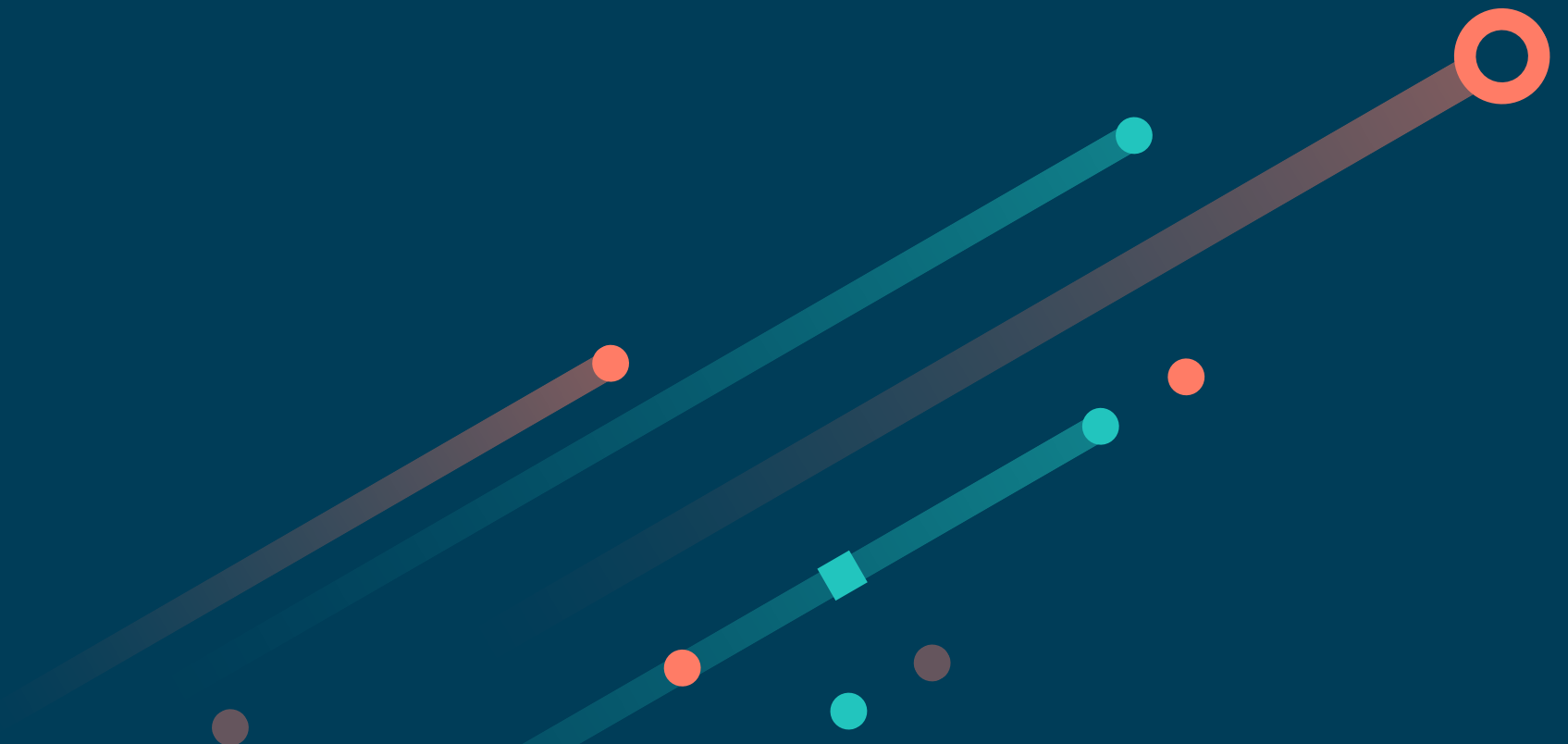
At the core is application integration — any iPaaS should support the gamut of integration patterns, both within an organization and across its partner network.

To accelerate results, an iPaaS should also ensure data synchronization and access to high-quality data anytime, anywhere, and on any device.

Distributed and Multi-Tenant

iPaaS can be expected to integrate everything from on-premises and cloud applications to IoT and edge devices, as well as support exponentially growing data volumes. To do this effectively — and deliver on the promise of low-latency, high-performance, and automatic upgrades — an iPaaS needs to have a distributed, multi-tenant architecture.

5 Best Practices for Government iPaaS Adoption



Include Integration in Your Initial Project Design

It pays to think integration first before embarking on application modernisation. Consider this analogy:

Let's say you're remodeling your home —you wouldn't build the walls and then think, "Oh, now we need to rip things apart to add wiring for lights and electronics."

Instead, you'd install your wiring as the new spaces were created so construction could proceed as quickly and easily as possible. The same principle applies to application modernisation — with integration supplying the "wiring."

Yet in some cases, agencies roll out a cloud application for human resources management, procurement or reporting with little forethought to integration. When the need for integration becomes clear, it's a mad scramble to build the necessary connections. Teams often resort to custom coding that's limited in scope and speed of delivery.

Mapping out your integration technology at the start is a proven best practice for application modernisation projects.

It gives you time to fully evaluate the iPaaS market and select the technology best suited for your evolving environment. By prioritizing integration in the initial project design, agencies can:

- Accelerate value from new cloud systems
- Avoid costly delays and rushed decisions on integration strategies
- Gain scalability to easily incorporate new source and target applications
- Reduce technical debt, optimize IT budgets, and deliver applications faster
- Ensure adequate time to test and tune data exchange and process orchestration

Establish an Integration Strategy

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A well-developed strategy for data and application integration needs to go hand in hand with your agency's overall approach to emerging data sharing requirements and mandates data strategy if it is to leverage the full value of government data.

Integration shouldn't be viewed as simply a means to support the replacement of outdated ICT systems with newer ones. Rather, it's part of a holistic approach that fundamentally transforms how agencies accomplish their missions.

Baseline your existing integration approaches.

A deep understanding of your environment lays the groundwork to modernise integration and calculate payback from a move to iPaaS. You should:

- Document the various integration tools and techniques your agency uses
- Quantify the time and resources needed to build or extend connections
- Capture feedback from integration developers and end-users on weaknesses

Understand your data and integration priorities.

Assess your data in terms of location, formats, sensitivity, and ownership. That's a critical step in an overall integration strategy and helps guide technical details (transformation, frequency, security, etc.) of each use case. Start with your most pressing use cases, and build on success and lessons learned in expanding integration across the broader environment.

Engage executive, IT and administrative stakeholders.

Where an agency has appointed a Chief Data Officer, this role is well placed to develop the integration strategy. That strategy is best developed with input from multiple stakeholders, including IT professionals, departmental leaders, data analysts, and process owners. Engaging a broad range of stakeholders helps bridge the gap between high-level strategy and day-to-day execution.

Ensure data security, quality, and governance. Be sure that your selected integration technology can support security, quality, and governance needs across multiple applications and data sources to provide data that's consistent, accurate, and timely across systems.

Capabilities such as master data management (MDM) let you move from fragmented information to a single source of truth.

Ensure Flexibility for Any Integration Use Case

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Not all integration use cases are created equal. It's essential that an iPaaS provide your agency the flexibility to tackle any integration scenario, regardless of the data types, complexity, and endpoints involved, be they on-premises or cloud systems.

Batch processing. The most common form of integration, batch processing efficiently moves data among systems at administrator-defined frequencies — once a minute, twice a day, nightly or every two weeks, for example. It can process large volumes of transactions quickly and is suited for repetitive data jobs without a need for immediacy.

Real-time synchronisation. Some time-sensitive use cases in areas such as security or employee termination demand real-time or event-based synchronization. An integration server will “listen” for changes in a source application and synchronize data when a change occurs, rather than at a set interval. The real-time approach can involve additional complexity in development and implementation.

API-driven integration. In some use cases, agencies need to synchronise and expose small amounts of legacy data for business units to use. API-driven integration, allows users to create, publish, and manage APIs to access specific slices of data they need. With many legacy systems in place across all levels of government,, API capabilities can help in certain modernisation use cases.

Use cases dictate what integration method should be used:

- An event-driven architecture needs real-time integration
- Data payloads of moderate or larger size are suited to batch integration

Arcane legacy systems may not have an API layer, so a direct database integration style may be best.

Very small and specific data call use cases are good candidates for an API approach.

It's also critical to have flexibility in where you deploy your iPaaS runtime engine for integrations — in various private clouds or on an on-premises server.

Ability to run integrations on multiple servers for load balancing, fault tolerance, and high availability is valuable for high-volume or mission-critical processes.

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The National API Design Standards (NAPIDS) were endorsed by the Data and Digital Ministers' Meeting in December 2019. In their communique, the Ministers stated NAPIDS 'will allow all levels of government and trusted third parties to securely share, re-use and enhance data in real time'. They said NAPIDS creates a common method of API development that all governments can adopt to create 'consistency between governments and promote interoperability between jurisdictions' IT systems.

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Create an Integration Center of Excellence



Ad hoc approaches to integration using multiple tools are a recipe for failure. Developers are forced to start from scratch each time applications need to be connected, meaning delays and high costs.

And it's becoming more difficult to find integration developers with specialized skills.

An integration center of excellence (ICoE) helps eliminate the problem of reinventing the wheel for every new integration. An ICoE brings together information and communications technology (ICT) teams and business users to foster best practices, standards, requirements, documentation, and reusable code that can be shared across integration projects.

Establishing an ICoE as you roll out an iPaaS can jump-start your results and lead to sustainable success with consistently rapid project delivery:

- Build repeatable processes that accelerate development and results
- Reduce costs with faster timelines and less maintenance and troubleshooting

- Improve collaboration and knowledge sharing across development, architecture, and operational teams
- Document requirements for software development lifecycle (SDLC), security, and testing
- Standardise shareable, reusable best practices and methodologies
- Ensure consistency, compliance, and rapid development

An ICoE also supports a model for “citizen integrators” — non-technical subject matter experts who can build their own integrations using the low-code, self-service capabilities in an iPaaS. Best practices and integration patterns from an ICoE provide essential guidance to engage citizen integrators, with oversight from ICT.

Getting Started: Start Small, Think Big

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Data and integration are central to use cases, such as:

- Creating a single view of the customer
- Reducing homelessness and suicides
- Combating drug abuse
- Advancing smart meter usage
- Using IoT data to improve transportation safety
- Better identifying waste, fraud, and abuse
- Strengthening food and drug protections and safety

Selecting initial use cases for iPaaS is a critical step that can influence results for months and years to come.

Successful early projects gain stakeholder support, win buy-in and attention, validate iPaaS viability, and can prompt additional funding.

In contrast, a setback in early stages can undermine future initiatives and your overall iPaaS strategy. The most successful iPaaS customers follow several key principles to get off on the right foot:

Begin with high-value quick wins. It's important to start small and think big. Don't try to "boil the ocean" with an overly ambitious project that may be beyond the capabilities of your integration developers as they develop skills through training and hands-on experience. Soon, they'll be able to build on success and tackle "think big" projects.

Coordinate from the top. An agency is well positioned to bring together IT teams and subject matter experts with deep domain knowledge to map out initial use cases. Collaboration is key to identifying readily achievable use cases. And you ensure that stakeholders aren't caught off guard with unwelcome surprises.

Map integration strategies to processes. Integrating applications almost always means a change in processes. Be sure to map out what processes and which stakeholders would be affected, and how. You'll minimise resistance and accelerate adoption when IT and end-users are on the same page.

Boomi: A IRAP Assessed iPaaS Leader

Boomi pioneered the iPaaS market in 2007. Today, we have more than 17,000 customers and nearly 800 partners around the world.

Boomi's capabilities for fast, agile modernisation and transformation helps:

Speed up Cloud Smart adoption. Boomi makes it fast and easy to connect application and data sources wherever they reside: on-premises or in a private or public cloud. Pre-built connectors and a low-code environment accelerates integration development two to five times so agencies can make cloud use a reality, faster.

Innovate for citizens and partners. Integration is key to delivering innovative products and services for constituents, from citizen portals to mobile applications. Boomi lets agencies connect with other government agencies and suppliers, for new digital services, efficiencies and productivity.

Make application migration effortless.

Consolidating applications requires reconnecting new applications and databases to exchange data with the original application. Boomi streamlines the process, eliminates the complexity, and securely handles data exchange during the transition phase.

Expedite delivery of new government services.

Boomi will help agencies redeploy existing services or assets in web-friendly architectures to enhance agency capabilities at a reduced cost. That's essential to transforming functions such as case, service, and health systems management through best-of-breed applications.

ROI, Quickly and Sustainably

A Forrester study finds that Boomi enterprise customers realise these benefits:

- 410% return on investment (ROI) over three years
- \$10 million in net present value payback
- 65% gain on integration development projects
- \$568,000 in reduced IT integration staff costs
- \$2.3 million in reduced infrastructure and legacy costs
- \$3.2 million in business acceleration and incremental gross revenue

Forrester,
"The Total Economic Impact™ Of The Boomi AtomSphere Platform",
a commissioned study conducted by
Forrester Consulting on behalf of Boomi.

Boomi's Built-in Intelligence and Security

Boomi's comprehensive set of capabilities make it ideal for just about any IT modernization or transformation need in government. The platform's intuitive user interface, drag- and-drop mapping tools, and AI-powered configurations let IT deliver integrations far faster than custom coding or legacy middleware.

Developers also work faster with crowd-sourced intelligence and machine learning that power unique Boomi capabilities. Less time configuring mappings and resolving routine errors frees developers to deliver results faster.

Automated data mappings through Boomi Suggest draw on millions of indexed mappings to automatically recommend data flows for new integrations based on successful configurations that have been built by other users.

Simplified error resolution through Boomi Resolve draws on contributions to the Boomi knowledge base from our ecosystem of developers and architects to suggest resolution to common error messages.

Trusted Security and Proven Compliance

The Boomi AtomSphere Platform is inherently designed for security as we are keenly aware that our platform manages the integration of your most critical and sensitive information and business processes. We are deeply committed to compliance and security for all Boomi customers in every industry.

Boomi adheres to the US Federal Information Processing Standard (FIPS 140-2) encryption standards at every level of the platform — from login credentials to data in transit, data at rest, and all platform communications. But what makes Boomi ideal for government agencies is the decoupling of integration design from runtime execution.

With that decoupling, integration processes are designed on the platform via the intuitive drag-and-drop UI, and then are deployed to the Boomi "Atom" — a patented lightweight runtime engine. The Atom allows integrations to be executed securely behind the firewall, whether on-premises or in a private cloud. It stores detailed logs and processed documents locally, thus no customer data is stored in or touches the platform.

Modernizing Government With Speed and Agility

Investing in cloud infrastructure and applications alone won't digitally transform how the government functions. Data and application integration needs to be a fundamental element as agencies work to create a more seamless and connected government experience for citizens, partners, and federal employees.

Agency ICT teams aren't well equipped to take on modernisation and integration initiatives with custom coding and on-premises middleware.

That's especially true in hybrid IT environments, with data scattered across incompatible legacy systems and new best-of-breed cloud apps.

By adopting iPaaS, agencies gain distinct advantages in speed, agility, and scale. ICT can start quickly, build efficiently, and confidently tackle data-centric innovations. Ultimately, ICT can say "yes" to digitizing the federal government for greater efficiency and effectiveness, improved analytics and decisions, and higher levels of service to the public.

To learn more about how the Boomi AtomSphere Platform can help your federal agency move faster and with greater agility, visit www.boomi.com/federal

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