

How Agencies Can Overcome the Chaos of Connectivity

MARKET TRENDS REPORT



Executive Summary

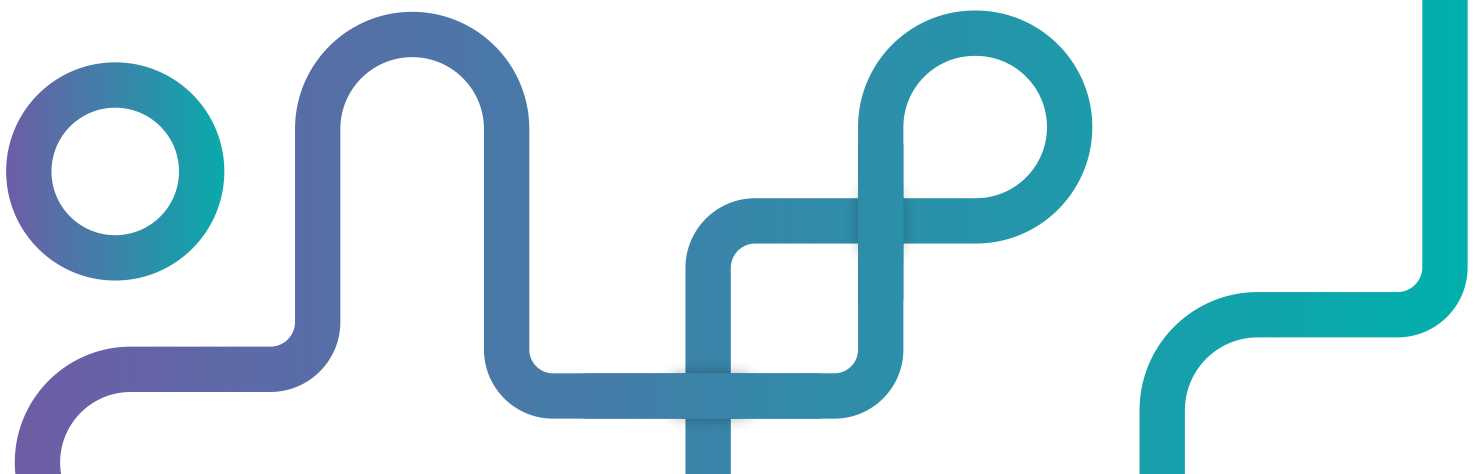
Government agencies, like organizations in every sector, run on data. But despite massive amounts of data being generated every day, the right data at the right time, ironically, can be hard to come by.

Amid the growth of computing platforms, mobile devices and cloud environments, agencies have steadily added new systems and capabilities, but they've often integrated those systems on an ad hoc basis — as point solutions to address specific needs. Meanwhile, agencies still rely heavily on legacy systems that are costly and time-consuming to maintain.

The result is that some data an agency needs may be tucked away in silos, difficult and time-consuming to access or kept in formats that don't work with modern systems. Meanwhile, agencies are on the cusp of integrating powerful new technology such as generative AI, which can add a lot of insights to help in real-time decision-making when there is a need for additional data to work with.

Modernization efforts, including the deployment of integration platform as a service (iPaaS), fall short in fully addressing the problem. Agencies need a platform that unifies integrations, unlocking data held throughout the enterprise, from mainframes to the edge. The concept of Super iPaaS provides that unification.

To learn more, GovLoop partnered with Enterprise Integration company and Super iPaaS provider [Software AG Government Solutions](#) on this market trends report. We'll describe what Super iPaaS is, how it improves on traditional iPaaS and how it solves many of the problems agencies face with modernization and integrating systems. We'll also offer best practices and examples of what Super iPaaS provides.



By The Numbers

Applications, Data Are Growing Rapidly

Recent surveys paint a picture of just how rapidly applications and data sources are growing, presenting organizations with potentially overwhelming integration challenges.

A [survey](#) by Matillion and IDG found organizations are handling hundreds or even thousands of data sources, combining computers, mobile devices, internet of things devices, websites and other platforms.

1000+

The number of data sources being used by 20% of organizations.

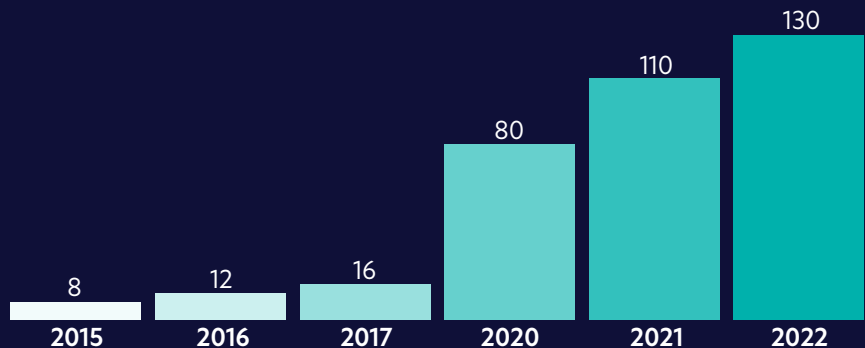
99%

The percentage of organizations that will be storing data in the cloud by 2024.

400

The mean number of data sources per organization.

The number of software as a service (SaaS) applications alone has exploded over a seven-year period:



Source: [Statista](#)

Legacy Systems Persist at Agencies

A study by the Government Accountability Office (GAO) found that agencies still spend the vast majority of their IT budgets on the operation and maintenance of existing IT systems, including legacy systems. And some of those systems have aged past the point of vendor support.

\$80 billion

The amount federal agencies spend collectively to maintain legacy systems each year.

Eight to 51 years

The range in age of 10 critical legacy federal IT systems GAO found were most in need of modernization.

80%

The percentage of federal IT budgets spent on operating and maintaining existing IT.

\$337 million

The average cost (in 2019 dollars) to operate and maintain a federal legacy system.

A Unified Solution to Application Integration

Challenge: The Chaos of Connectivity

Agencies have spent the better part of the last two decades integrating point-to-point solutions to address point-in-time problems. But as computing has evolved — with agencies continually introducing new systems and handling increasingly massive amounts of data while expanding to cloud, mobile and edge environments — they've lost the ability to easily access large swaths of data.

The result is a “chaos of connectivity” — a morass of systems that are integrated to an extent, but don't talk to one another. “Initially, these things were pretty simple and fast to implement,” said Darryn Graham, Solutions Architect with Software AG Government Solutions. “But over time, the complexity became exponential. With the size of the agencies in the federal government, this approach is not scalable.”

The mounting complexity limits agencies' ability to quickly access data, which may be held in siloed systems or kept in unusable formats. “And so, what you end up doing is recreating things, over and over,” said Fabien Sanglier, Chief Solutions Architect at AG Government Solutions. “They've created new silos.”

One way agencies have attempted to work around the issue is to deploy integration platform as a service, a cloud-based platform for managing integration between various SaaS applications. The problem is that iPaaS often is unable to scale mission-critical integrations across geographies, IT environments and complex business ecosystems. Agencies need to take the next step to a platform that offers a unified view of all their integration patterns, including data, applications and application programming interfaces (APIs).

Solution: Super iPaaS

Super iPaaS represents a new approach to integration. Where traditional iPaaS connects SaaS applications, Super iPaaS connects the entire enterprise.

It provides a unified interface of integrations across the enterprise, including hybrid multi-cloud hosting environments, geographies, user identities and teams. Super iPaaS is managed centrally by an integration center of excellence, giving agencies quick access to data to answer requests promptly and the ability to adapt to changing technology.

“That single pane of glass is what the Super iPaaS concept is really about,” Sanglier said. “You can integrate pretty much anything — and everything — everywhere.”

Super iPaaS offers three core benefits:

Agility: The ability to deploy anywhere and enable the seamless flow of information, allowing agencies to react in real time to changing requirements.

Productivity: A centralized interface and real-time access to data allows users to get more done quickly, increasing productivity and lessening the burden on the IT staff. The integrated support for APIs enables rapid cloud adoption, and support for generative AI integration enables automated workflows from description to deployment.

Governance: A centralized view provides end-to-end visibility and observability across transactions throughout the enterprise, which simplifies compliance with the full range of regulatory requirements.

Super iPaaS achieves these benefits by focusing on six enabling capabilities.

Fast flexibility: This allows agencies to meet guidelines and regulations about development and deployment in different areas, such as security zones or the cloud.

Control of the integration landscape: A single pane of glass provides visibility and control into both on-premises and multi-cloud environments.

Working with past, present and future data: Full data integration, such as between ERPs and warehouse systems, enables agencies to access the full range of data.

Instant productivity: Access via one user interface gives users a single set of tools to work with, streamlining productivity.

Dream up, spin up, scale up: Having a unified experience across all iPaaS components enables agencies to be responsive to changing demands and introduce new technologies, such as generative AI.

Automating integration: Automation can eliminate 90% of an IT staff's busy work, increasing productivity and innovation. Generative AI can allow anyone to create integrations simply by asking.

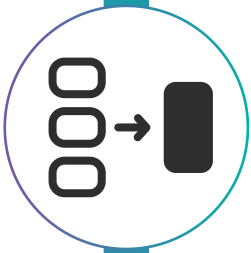
Best Practices in Super iPaaS



Use a common interface across the platform.

“The first step is ensuring that you’re getting unification across all of your data integrations,” Graham said. Agencies need to be able to reach into on-premises systems like mainframes or enterprise resource planning systems, as well as new applications and APIs in the cloud. For example, a means of sharing data, such as an electronic data interchange (EDI), requires a different tool and skillset than when working with APIs. Users need to be able to work with a variety of tools, via a common view, which a centralized interface enables.

“The No. 1 thing is to ensure that your iPaaS is basically a unified offering, so that you have this single pane of glass to be able to see across each of these data integration patterns,” he said.



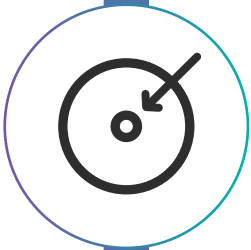
Conduct full integration with applications, data and APIs.

A unified solution, as opposed to traditional iPaaS, allows agencies to launch new applications and services without making substantial changes to their tech stacks or introducing new security risks. Integrating all of the enterprises systems into a single-pane-of-glass interface offers the ability to tap into current and historical data, regardless of where it resides, and immediately put insights into action.



Implement cloud-first, hybrid integrations and mainframe to the cloud.

During modernizations, it’s important to be thorough, but migrating systems is not always easy — an enterprise won’t become all-digital from one day to the next, Sanglier said. “Thanks to Super iPaaS, you can take a piece-by-piece approach,” Sanglier said. Because Super iPaaS integrates on-premises assets with cloud systems and everything in between, agencies can modernize older systems and then move toward a full cloud approach. A steady integration also helps avoid duplicating processes or systems, which can happen with traditional iPaaS. Sanglier said a good piece of modernization advice is simply: “Don’t recreate new silos.”



Centralize management to ensure governance and enable innovation.

The unified approach of Super iPaaS gives agencies the centralized control they need to maintain governance, ensuring they comply with security, privacy and data sovereignty requirements.

Tight governance also allows agencies to incorporate innovative technologies such as generative AI, which offers extraordinary possibilities but needs to be implemented within strict guardrails, Graham noted. Generative AI needs to be trained on reliable data to avoid missteps like bias and hallucinations, resulting in inaccuracies. Centralized control and governance can help ensure responsible use.

Full visibility of the enterprise along with governance can also help agencies tighten cybersecurity controls. “The No. 1 risk of not doing something like this is going to be related to security,” Graham said.

Use Case: Speeding Up Integration With Super iPaaS and AI

In addition to giving agencies full visibility and access to its integrations, Super iPaaS can help them save a lot of time and manual effort in creating more. One way the company is developing to greatly accelerate integrations is by using generative AI.

“We’ve been kind of forging a path around incorporating generative AI into the problem set of gaining access to these systems, and allowing data-sharing between them,” Graham said. “We’ve been able to train an AI model to allow a customer to task it with building these kinds of integrations.” A benefit of generative AI is that a user wouldn’t need significant programming skills in order to build an integration.

When a new calendar entry is created, the AI model would send notifications — via email, text message, chat channel or other means — to the people and resources that need to respond, Graham said. AI then picks up on various requirements and creates a connector for the calendaring system in real time, as well as connectors to, for instance, an API or a Slack channel as needed. It also could create and implement the logic flow for that action, including mapping data formats.

“It provides almost 90% of what has to be done in order to facilitate that integration,” Graham said. It gives the other 10% to an engineer to review and make whatever minor modifications are needed. When properly trained, the AI model becomes a super accelerator of the time to implementation, while saving the IT team significant time and effort.

HOW SOFTWARE AG GOVERNMENT SOLUTIONS HELPS

Software AG Government Solutions is an established leader in integration, with experience handling integrations for public sector agencies, including federal, state and local agencies, as well as the aerospace and defense sectors. It invented Super iPaaS to address the need that organizations in multiple sectors, including government, were having with the chaos that results from multiple integrations.

The purpose of a Super iPaaS is to unify integrations across the enterprise, including application and data integrations, giving agencies fast access to all their data. It also sets the foundation for moving forward with new technologies, such as generative AI.

Super iPaaS finally brings together application, data, APIs, B2B and events integrations in the same unified platform, allowing you to integrate anything, anywhere, any way you want. “Using a Super iPaaS finally liberates the data sitting in existing systems,” Graham said.

Conclusion

It can seem that agencies these days have more data than they know what to do with. But it's not really that they don't know what to do with the data, it's more that they can't always get to the data in a seamless, efficient way. As agencies have added new systems and capabilities while also extending their enterprises into the cloud, those integrations on top of integrations have left too much data inaccessible.

Super iPaaS can solve that problem. It goes beyond traditional iPaaS by unifying integrations throughout the enterprise, whether they involve legacy on-premises systems or applications at the far reaches of the cloud. The visibility resulting from a unified view, and the quick access to data regardless of where it resides or in what format, helps agencies improve performance, while automation saves on the costs of manual operations. It also allows for the incorporation of AI models and other innovations that can make digital government a reality.



ABOUT SOFTWARE AG GOVERNMENT SOLUTIONS

Software AG helps you create incredibly connected experiences for your constituents, employees and partners with an enterprise grade Super iPaaS that integrates anything, anywhere, any way you want.

To learn more, visit www.softwareaggov.com



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GovLoop's mission is to "connect government to improve government." We aim to inspire public-sector professionals by serving as the knowledge network for government. GovLoop connects more than 300,000 members, fostering cross-government collaboration, solving common problems and advancing government careers. GovLoop is headquartered in Washington, D.C., with a team of dedicated professionals who share a commitment to connect and improve government.

For more information about this report, please reach out to info@govloop.com.



1152 15th St. NW Suite 800
Washington, DC 20005

P: (202) 407-7421 | F: (202) 407-7501

www.govloop.com
@GovLoop

