

IT-as-a-Service 101: Breaking Down What You Need to Know

**It's a technology-delivery
method that treats
information technology
(IT) as a commodity**



Foreword from ViON and Hitachi Data Systems Federal

"IT-as-a-Service (ITaaS) holds the promise of delivering on both demands by providing immediate and direct access to advanced IT, while only paying for what's actually consumed on an operational basis."

By now, nearly everyone has heard the phrase "as-a-Service" (aaS) in some capacity. Yet, few truly understand exactly what an aaS model is and what it can deliver, in terms of capabilities, cost savings and operational efficiencies, particularly when it comes to information technology for government.

The fact is, today's government agencies are facing unprecedented pressure to compress budgets while rapidly expanding IT capacity and capabilities. Put simply, IT-as-a-Service (ITaaS) holds the promise of delivering on both demands by providing immediate and direct access to advanced IT, while only paying for what's actually consumed on an operational basis. Far from a passing phase or silver bullet, ITaaS is a strategic

and proven business model that is already changing the way government agencies access and utilize IT. This GovLoop Pocket Guide is designed to help you determine if ITaaS could help you do the same.

An increasing number of government agencies are now leveraging ITaaS to do more with the operational dollars they do have available to spend, effectively stretching their budgets to keep up the evolution of IT and rapidly advance their own mission objectives. Moreover, ITaaS is helping many agencies successfully meet cloud mandates and overcome the barriers impeding cloud progress, including security concerns, compliance and a lack of readily available cloud expertise. Making the move to cloud

is no easy feat, but ITaaS can streamline the transition and we've included specific requirements that should influence cloud-buying decisions within this guide.

It's impossible to make substantial and sustainable forward progress without first establishing a strong foundation. With this new Pocket Guide, we provide a clear explanation of everything you need to know about ITaaS, from basic definitions to the cultural reasons propelling this dramatic shift in IT delivery to real-world applications and success stories. We'll explore why so many government agencies are abandoning the long-held practice of procuring, owning, and managing on-prem hardware and software – and see just what they can do when

freed from the complexities and ongoing challenges of maintaining legacy systems. Furthermore, you'll learn how to make a sound operational and business case should you wish to pursue ITaaS for your agency.

As always, this Pocket Guide packs in a ton of valuable information and takeaways within just a few pages. You'll learn from the experts at ViON, who are not only at the forefront of ITaaS but have also been integrating IT for government agencies for more than 35 years, why and how ITaaS is changing the way IT is accessed and delivered across the government – and whether or not ITaaS is the right choice for your agency. Read on to learn more.



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and manage costs.

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Executive Summary

Information Technology (IT) delivered via the cloud in an as-a-service model (aaS) is the future. So what is it?

The most important thing to realize is that IT-as-a-service (ITaaS) really isn't so much about the technology as it is a strategy for improving operations and reducing costs; it's a business strategy for acquiring IT and IT services.

The technology that sustains cloud delivery models is, of course, interesting – but with a very short half-life, it is not nearly as relevant as the shift in business approach from acquiring equipment to acquiring outcomes.

In fact, the very principle of ITaaS is that the technology used must be transparent to the user. Think of it this way: When one buys a book from Amazon via traditional means or a Kindle, we really don't care what is on the other side of the screen. All we care about is timely delivery of the content, as well as protecting identity and credit card information.

The same should hold true for IT we acquire as a service in the public-sector workplace. The service is what's important, and the service should be governed by service-level agreements (SLAs) – not the flavor of the technologies used.

If you're involved in discussions about cloud procurement or deployment, in any department – from IT to business – this guide is for you. In it, we will explore how to best assess your agency's cloud needs, discuss best practices for procuring cloud resources and review case studies of successful cloud deployments in government, as well as make the case for why ITaaS is the future for cloud adoption.

As the government continues to adopt IT-as-a-Service strategies, challenges can arise. But they can be dealt with, and the ways in which you can acquire IT-as-a-Service can be much smoother. So, let's get started. First up: an overview of ITaaS, and more details about what it entails.

An Overview of IT-as-a- Service

Get ready, in this section,
we'll teach you:

- The definition of IT-as-a-Service
- Current examples and brief use cases for it
- Why ITaaS in government matters today more than ever

The pace of IT change taking place in government is remarkably fast. There are new priorities and technologies offered as services: mobility, cloud computing, social media, consumerization, big data and analytics are all very much interwoven within today's enterprise. **The result? A massive shift in the way organizations use and consume IT resources. That shift has resulted in the rise of the IT-as-a-Service model.**

What is ITaaS?

In short, ITaaS is a technology-delivery method that treats information technology (IT) as a commodity, providing an enterprise with exactly the amount of hardware, software and support it needs for an agreed-on monthly fee. In this context, IT encompasses all of the technologies for creating, storing,

exchanging and using business data. It creates an approach to the consumption, organization and delivery of information technology such that all details of the service are abstracted from the business consumer except the services: function, capacity, cost and agreed level of performance.

What's the big deal?

ITaaS gives government agencies a strategy for providing technology when and where their users require it. The service allows organizations to acquire and provision a range of IT hardware and software suited to their needs on a consumption basis (compute, storage, data center networking). This means that agencies will then have the ability to:

1

Use technology on premise to create a private cloud

2

Customize, combine and configure technology to meet their specific needs

3

Scale capacity up or down to meet demand without penalty or minimums

4

Pay for capacity with operations dollars rather than capital expenditure

5

Achieve best-practice, customized service-level agreements (SLAs)

6

Enjoy 24/7 live, secure support

Perhaps most importantly, the expanding roles of ITaaS and cloud computing in government agencies involve more than just the agency's information technology department. Since it is a business strategy, more people realize that employing a cloud or services in a cloud can increase efficiency and collaboration, leading to improved performance and service delivery and reduced cost.

What's happening in ITaaS right now?

With an increased focus on cloud, and understanding the challenges, the General Services Administration (GSA) recently released a request for information to solicit industry and public views on cloud computing services. Furthermore, President Obama's proposed 2016 budget, which calls for \$86 billion in IT spending, charges that 8.5 percent of that target will be spent on provisioned services such as cloud. That means some \$7.3 billion will be available for cloud spending.

Despite this embrace of cloud, misconceptions and challenges remain, as noted in a recent **Government Accountability Office report**. The report found some of the top challenges to implementing cloud in federal government were meeting federal security requirements, overcoming cultural barriers and having appropriate expertise for acquisitions processes.

The decision to shift to an ITaaS model (to include cloud) necessarily involves the business core of an agency. Conversations about ITaaS and cloud, however, tend to revolve around what cannot be done instead of what can. Procurement, budgeting and cultural barriers frequently prevent proper adoption and procurement of cloud technologies. Complex organizational obstacles often stand in the way, but the conversation needs to focus on how the agency will benefit from ITaaS and cloud and adapting the culture and business to ITaaS, and away from what cannot be done. With the right steps up front, ITaaS can give agencies a sound business strategy and a force multiplier for business and operational benefit.

In short, while ITaaS models are gaining in popularity, misconceptions and misunderstandings about what it can do for government remain.

The Current IT-as-a-Service Landscape

Since 2003, the Department of Defense has competitively awarded more than \$2 billion in on-demand contracts to modernize and consolidate a wide variety of server, storage and communication technologies for its data center operations worldwide. Numerous companies have on-demand services on General Services Administration IT Schedule 70. Another government agency recently awarded \$20 billion in contracts to 14 companies for on-demand IT services.

In this evolving marketplace, more and more organizations are abandoning the traditional practice of owning and running hardware and software inside their operations. Moving to a consumption economics model allows an organization to retain full operational and financial control within the constraints of traditional contracting requirements and capital expenditure budgets.

For many agencies today, though, the idea of ITaaS and cloud is still relatively new. So, when it comes to procurement, there is a struggle to map current appropriations models and common interpretations of the Federal Acquisitions Regulation (FAR) with the business model of ITaaS and cloud. Similarly, the current acquisitions mindset lacks the knowledge of the ITaaS business and cloud-specific procurements.

“Procurement officials understand how to acquire 10 servers,” Tarrazzia Martin, Senior Adviser for Enterprise Planning & Change Management, Department of Housing & Urban Development, told GovLoop, **“but approaching combined and shared cloud services becomes problematic.”**

She added that procurement officials are comfortable with the normal methods of procuring IT, such as firm fixed price and time and materials. But the on-demand, consumption-based cloud acquired with operational funds doesn't seem to fit the normal way of doing business.

This complexity also leads to delays and extra costs, with procurement often trailing need by months. This challenge can cause agencies to shy away from the ITaaS or cloud service they initially sought.

There is an associated challenge of dealing with legacy systems as an agency moves to service-based IT.

“Some agencies do a great job of really having pure ITaaS and cloud services, but most are struggling with integrating them with legacy systems,” said Mark Day, Deputy Assistant Commissioner of Integrated Technology Services at GSA's Federal Acquisition Service. **“[Agencies may ask,] ‘How do I keep a cloud service on- or off-premise so that I get the pricing, the elasticity and all the features I want, but still make it work with the rest of my current environment?’”**

When this happens and the agency faces the reality of integrating legacy systems with the service-based IT acquired in the standard fashion, the solution tends to look more like an integrated, costly managed service instead of an economic on-demand service.

Making the business case for ITaaS

The focus on operational and business imperatives when talking about ITaaS is critical. The first question to be asked when an agency considers moving to service-based IT is, "How will this improve or streamline our operations?" The second question involves consideration of return on investment.

An agency needs to make a sound operational and business case for ITaaS and cloud, conducting rigorous, systematic analysis of the effectiveness and return on investment of variousaaS and cloud solutions. Given the cost, security and cultural challenges, persuading an agency to entrust data in a cloud must include serious conversations with agency stakeholders to get their buy-in. This goes beyond the CIO, and includes the operational owner of the applications, chief technology officer, chief acquisition executive, chief financial officer, budget officer and others who have vested interests.

These are key stakeholders because in the end, ITaaS, cloud and on-demand constitute a business strategy for acquiring IT and IT services. And these stakeholders can make it happen.

What needs should guide your ITaaS procurement?

Government agencies want and need innovative technologies, but they're challenged by tight budgets, complex procurements and high security requirements.

A more flexible approach is to contract for IT capacity on an on-demand basis, allowing for scaling up or down, depending on requirements. This is becoming the preferred method of contracting for and implementing IT capacity.

An agency may need more immediate access to infrastructure to quickly build and deliver better software applications. Or they may need to quickly adjust to rising or decreasing demands for their online services.

It's vital that agencies compare their needs to the cloud services that are available before purchasing them. That way, agencies can ensure what they are buying actually fits their needs.

Let's explore the types of requirements that should be driving your cloud-buying decisions. By no means is this an exhaustive list, but rather a few considerations to get you started:

1

Objectives

Early on, you should consider what you want your organization to achieve through technology. Create an ideal profile of what that looks like. Is it anytime, anywhere access to your digital services? Improved productivity in application development, or maybe you no longer want to own IT assets? These demands should dictate which solution you choose.

2

Security

At the top of the list for most — if not all — government agencies is the need for security. There are many requirements and laws that govern how agencies must secure technology, including cloud products and services. Consider whether the cloud offering meets your security needs. The Federal Risk and Authorization Management Program, or FedRAMP, is a great tool for vetting the security of cloud vendors. (There will be more on security later in this course.)

3

What's cloud-friendly?

If you are moving existing services or applications to the cloud, you must also consider what services can and cannot move to the cloud. Are your applications "cloud-friendly," in terms of latency, sensitivity, file structure and other important considerations?

4

Reliability and access

Who will be accessing your data or services in the cloud, and what requirements do you have for the availability and reliability of that service?

5

Legacy considerations

Will your cloud solutions be connected to legacy systems? Do you have access to the tools to assess your environment for readiness, or will the potential provider administer the process and methodology?

6

Human resources

Do you have the technical talent in-house to manage cloud solutions, or do you need to contract out or hire those experts?

Industry Spotlight

An interview with Ray McCay,
Vice President
Solutions Strategy, ViON

Today almost everyone uses cloud services on a daily basis, from checking email, to accessing work files, to online shopping, most of us are unaware of the technical details that provide us cloud's anytime, anywhere access to data and services. We simply expect it to work.

At its core, this is the value proposition of cloud. Cloud computing in government today is no longer a conversation about technology and IT – it's a cultural and business conversation based on what success looks like both for the purchaser and the end user. GovLoop sat down with Ray McCay, Vice President Solutions Strategy at ViON, to learn more about this approach towards cloud and what it means for government.

Unlike the traditional model of buying hardware and software, cloud offers the IT department the opportunity to broaden technology services and dedicate time for more strategic endeavors. The ease of buying cloud solutions has empowered additional departments, such as finance, operations or even communications to make cloud purchases on their own by simply swiping a credit card.

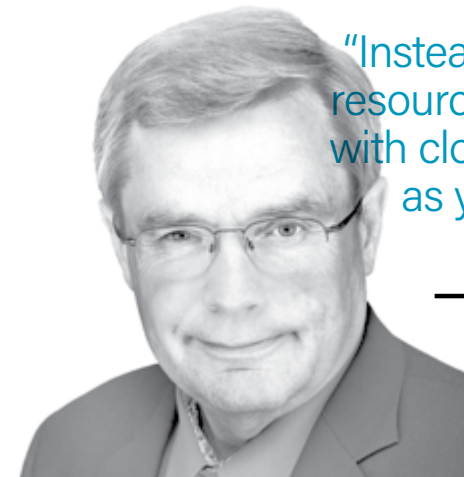
This approach is referred to as "IT-as-a-Service" (ITaaS). Essentially, this method supports customers who want to achieve a particular outcome with their IT on a pay-as-you-go basis. **"Technical resources, employees, and applications all may come and go,"** said McCay. **"But through these inevitable**

transitions, government workers require consistent outputs from their technologies and applications and they want to pay for it via an easy-to-use utility model."

McCay explained that in a traditional IT procurement model, an IT department buys servers, storage, or networking products based on what they forecast they may need near and long term. The ITaaS model changes how IT is acquired.

McCay conceded that this approach can be challenging for many needing to adjust to or migrate to a cloud purchasing model. **"Sometimes, people get confused when talking about cloud computing and they'll struggle to understand what cloud is and how it may impact their organization,"** he said. **"At the end of the day, the technology remains the same, it's just acquired and deployed in a different way. So then the question becomes what business model you're going to use to get to that core technology to the applications."**

Cloud, at the most basic level, is getting people access to technology the way they want to consume it. So wherever it may be, whoever may be running or operating it, however the users are actually getting access to it, or how the infrastructure's being shared, cloud is connecting end users with the resources they need in the manner they want to consume them. McCay advised when taking an ITaaS approach, it is essential to think about business outcomes



"Instead of buying resources up front, with cloud you pay as you need it"

—Ray McCay

first before deciding what kind of cloud solution you want to purchase.

"At ViON, we engage with the agency through our professional services team to identify the critical pain points they are trying to solve," McCay said. **"Through an in-depth advisory process, leveraging our experienced technical and business experts, we provide our clients the cloud model that best fits their requirements."**

"IT departments in agencies today are focused on how to add value for their customers and where they can engage strategically to assist their organizations. They want to drive strategic initiatives to deliver the business outcomes their customers demand" said McCay. **"Moving infrastructure to a cloud model helps IT have the time and resources to dedicate to these new strategic roles. It is still very important, even in cloud, that we define what success looks like, define the service level agreements that need to be in place to ensure mission success."** There are important considerations, such as do they need their application to have zero down time? Do they have applications that are not so critical? When there is a problem, how fast does the service response need to be? What are their user's expectations?

"It's vital for IT departments to understand the needs of their internal and external users and stay in constant communication with them. IT must also work collaboratively with other departments to ensure purchasing is either

streamlined — in order to reduce duplication — or approved as meeting the agency's security and investment standards," McCay noted.

McCay shared that ViON Corporation has provided technology "as a Service" to government agencies since 2003. **"In that time, we've seen customers apply government contracting structures in innovative ways to access the latest technology and services for the best available price/performance,"** he said.

ViON helps agencies develop a business strategy for providing technology when and where their customers require it. TheaaS model allows organizations to acquire and provision a range of IT hardware and software products and solutions suited to their needs on a consumption basis (compute, storage, data center networking).

"Instead of buying resources up front," McCay said, **"with cloud you pay as you need it. A successful cloud implementation will consider:**

- **Where the technology should be located**
- **Who is operating the technology**
- **How users get access to the technology**
- **Whether the technology is shared or dedicated**
- **The appropriate consumption based payment methodology**

In the end, the solution will still contain many of the same technological elements, but structured and acquired via a new business model."

Learning From Others: IT-as-a-Service Case Study

Despite the challenges discussed in this report, many in government have been doing great things with ITaaS, and the rest of us could learn a lot from them. That's the point of this section, where we'll focus on how this organization is learning to adopt ITaaS and what it's meant for them and their citizens.



How California's CalCloud Meets Customers' Needs

The Golden State is one of the few but growing number of states with a cloud-first policy. The policy basically says that agencies need to look at the state's **CalCloud** as an Infrastructure-as-a-Service option, before pursuing other third-party services.

CalCloud provides the state's government agencies with on-demand access to a shared pool of compute resources, and it's key to California's cloud migration. CalCloud serves about a dozen state agencies, but that number is growing.

When agencies are considering new IT investments or system integrations, they have to consider the state's cloud process. Working alongside the state's IT department, customer agencies go through a gap analysis to see if CalCloud is a good fit.

To better meet citizens' growing demands, California is also rolling out new services to provide software and platform services from other third-party vendors. The state's Department of Technology is taking on a new role as broker of cloud services.

The key to providing better services is listening to and understanding the customers' needs. State agencies were concerned that CalCloud rates were too high and did not offer competitive pricing. So the state worked hard to renegotiate its contract and drop the rates.

Now those rates are more in line with current cloud providers, and in some cases cheaper.

Another customer complaint was that CalCloud did not offer enhanced levels of security required to host certain services. The state responded by implementing a security event management system that made CalCloud compliant with FedRAMP requirements and NIST standards.

That's not all.

The state has a user group of early adopters that recommends how it can improve cloud services.

One of the ways California hopes to expand CalCloud services is by offering increased storage as part of its renegotiated contract, as well as disaster recovery and tape backups for security reasons.

Service-level agreements, or SLAs, are also a concern. California is working to modify its SLAs for CalCloud Infrastructure-as-a-Service to ultimately meet its customer's needs. These SLAs will shape future Software-as-a-Service and Platform-as-a-Service cloud offerings.

In short, by first evaluating its current and future needs and collaborating with end users, California now has cloud solutions that are adaptable, efficient and secure.

IT-as-a-Service Cheat Sheet

This takeaway section will give you steps for understanding ITaaS as well as tips and best practices for adopting and implementing it.

Setting strong Service-Level Agreements

One of the struggles governments at all levels face is articulating the level of service they expect from their cloud providers and, in turn, understanding the limitations of what can be provided.

Part of the problem is that SLAs vary widely across cloud providers, and sometimes different divisions within the same company offer the government very different SLAs. Here are some of the key issues that should be addressed in your contract SLAs:

1

Identify the cloud services the SLA covers.

2

Provide a description of the roles and responsibilities for the stakeholders (typically the cloud provider and you, the customer).

3

You also need to make clear in the contract the amount — or percentage of time in a given period — that the cloud service is accessible or usable. These are often expressed in percentages, such as 99.99 percent. The more nines after the decimal, the better.

4

The service provider needs to assure protections of personally identifiable information. Examples include the time periods for erasing temporary files, the length of time data logs are kept and the time period notification for data breaches.

5

Termination of services is big issue that must be addressed. This deals with the orderly exit process if a cloud service is terminated. Elements would include notification of service termination, acceptable methods of returning assets and the length of time the vendor retains data at the end of the service.

Ten questions to ask yourself

1

How does the cloud support current operations? Is cloud able to support and run current applications?

2

What is the pricing model that is appropriate for your agency to deploy cloud? Can you anticipate costs based on the various cloud models you may deploy? Can you scale usage and pay for what you use?

3

What problem are we trying to solve, and why is cloud an appropriate option?

4

Have you explored the current service and deployment models? Which model, public or private, fits your agency needs?

5

How have you engaged with your end users and business units across the agency? Will the cloud meet the needs of each stakeholder?

6

Can you leverage existing cloud applications across your agency?

7

How can you speed up procurement and deploy solutions?

8

How will you measure success and define your return on investments from the cloud?

9

Will the cloud create proprietary data formats or vendor lock-in?

10

Do you fully understand, and can you accurately describe, the service levels required to support the applications you want to move to the cloud?

ITaaS resources

Here are some links to get you up to speed on IT-as-a-Service.

Information Technology “as-a Service” Considerations for Contact Administration [ViON]

Flexible IT: An Overview of Infrastructure as-a-Service [ViON]

Creating Effective Cloud Computing Contracts for the Federal Government Best Practices for Acquiring IT as a Service [CIO.gov]

Changing the Conversation: The Case for “as a Service” [GovLoop]

Federal CIO Calls for Government-Wide ‘IT as a Service’ [CIO.com]

5 of the Latest Cloud Computing Trends [GovLoop]

Making Smarter Investments [GovLoop]

Thanks to ViON and Hitachi Data Systems Federal for their support of this valuable resource for government professionals.



About ViON

Designing and implementing innovative solutions that meet dramatically changing IT requirements is ViON's mission. Founded in 1980, we've grown from a small product reseller into a leading systems integrator delivering customized solutions and best of breed offerings from the world's premier OEMs to large public and private organizations.

Known for our engineering expertise and exacting standards, ViON ensures that only those with the highest level of training, experience and industry certifications design, install, maintain and support our breadth of solutions.

We focus on data management, so you can focus on your organization's success. We're on the leading edge of Big Data and Cyber Analytics, Cloud, Video Surveillance and Storage. ViON's cloud-based "as a Service" Program Management Office delivers direct access to the technology you need for today and tomorrow.

From the data center to the cloud, let ViON's passion for innovative solutions secure the competitive advantage required for your enterprise. Learn more at www.ViON.com



About GovLoop

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

The increasing requirements of organizations and their stakeholders are changing the way information technology is procured, developed and delivered. Advances in technology and access to new "as-a-service" consumption models offer dynamic and efficient ways for government to consume IT resources. In this era of tighter budgets and limited resources, using an "on- demand" service will enable government IT staff to better meet increasing expectations to create and operate new technology, services and capabilities.



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