Maximus

How Agencies Can Focus on Data and Reduce Technical Debt

Federal agencies are in the midst of a technological revolution

Across the federal government, agencies are modernizing their infrastructure, fully embracing the cloud, and implementing a host of emerging technologies such as machine learning and artificial intelligence. These advancements are crucial for enhancing efficiency and driving toward a cloud-based ecosystem.

As agencies undertake these critical projects, they face significant challenges, with technical debt being one of the most significant. Technical debt, as defined by Gartner, is work that is "owed" to an IT system and accrued over time as agencies develop other systems and use workarounds in siloes to keep older technology solvent. At some point the technical debt results in software becoming unusable, which means agencies are paying for unnecessary technology.

The issue of technical debt has been driven by disparate data management practices, as agencies previously approached modernization efforts in siloes. In 2025 and beyond, the goal is to bring systems and data repositories together in cloud-based ecosystems to take advantage of new and emerging technologies.
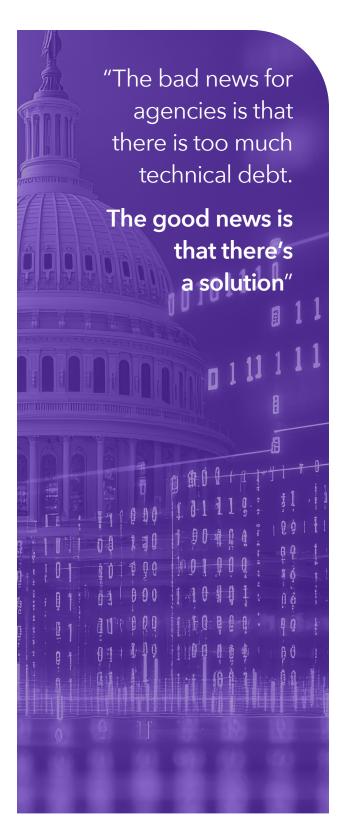
Due to these data management challenges, one of the first steps any agency should take is sanitizing data systems. Most agencies are not going to eliminate technical debt simply by moving to the cloud or implementing artificial intelligence. It takes a broad effort to clean data, retire legacy code and move to no-code or low-code technologies.

> "...agencies are paying for unnecessary technology"

The Impact of Technical Debt

The cost of technical debt across the federal government is challenging to quantify, but it is estimated that nearly half of the annual $100 billion spent on IT across agencies is dedicated to keeping older systems running. The entirety of this spend is not focused on technical debt remediation, but on continued operations and maintenance of IT systems that have been around for decades – possibly in use since the 1960's.

> "The bad news for agencies is that there is too much technical debt.
>
> **The good news is that there's a solution**"

As we look to the future, agencies must consider the decommission of migrated legacy systems while cleaning and evaluating data stores as a deliverable for cloud migration and future cloud-based development policies.

There are many reasons why technical debt has become such a widespread issue for agencies. In the past, agencies were not receiving necessary funding to keep pace with change and were stuck with legacy systems. However, there has been a concerted effort across the federal government to provide more funding for modernization efforts, which allows agencies a better opportunity to balance short-term needs with long-term goals.

It is not enough for an agency to merely acknowledge technical debt; it must be eliminated. If not, technical debt can slow development, increase risk of errors or system failures, and makes future projects more difficult and expensive.

The first step is understanding the impact of technical debt, such as how the Department of Defense provides the DoD Architecture Framework 2.0, which outlines how systems and technologies should be designed and built for each of the military branches.

Each agency should review their infrastructure and data repositories to identify what can be removed, such as legacy code or older systems that have been upgraded and maintained over time but have since become redundant and not yet decommissioned.

Agencies Finding Success

When Allen Hill joined the Federal Communications Commission (FCC) as chief information officer, **he faced the challenge** of moving the agency away from outdated

technologies. One initiative Hill led was the **removal of about 900 servers** of the data center as part of a massive network upgrade. Another agency at the forefront of eliminating technical debt is the Internal Revenue Service (IRS), which has made that aspect a key pillar in its **broader modernization plan** to improve services for American taxpayers.

One example is the agency's effort to modernize the IRS Enterprise Data Platform (EDP), for which the **agency partnered with industry** to transform and transition its current data and business intelligence process to a cloud-based Platform-as-a-Service (PaaS). Through this work, the EDP platform will deliver secure data access for users and systems at the enterprise level across the IRS, facilitating the use of emerging technology and driving cost savings.

This ability to reduce redundancy, streamline processes, and improve cost efficiencies aligns with the goals of the incoming Presidential administration to address government spending. Through the implementation of modern technologies and a robust suite of data management tools, these goals can be achieved by any agency.

Tips for Every Agency

The IRS and FCC are two agencies taking the initiative when it comes to eliminating technical debt, but it is an initiative that cuts across every federal agency.

A first step that every agency should take is a full technical debt audit, considering the totality of an agency's IT infrastructure and identifying where the debt has accumulated the most. From there, agency leaders can focus on prioritizing which legacy systems that can be decommissioned and plan how to do so.

Looking to the future, agencies can eliminate the future accumulation of technical debt through the implementation of agile development practices. Additionally, leaders must make centralized data governance a foundational piece of any modernization project.

The bad news for agencies is that there is too much technical debt.

The good news is that there's a solution. By identifying the issue, focusing on the data layer, and mapping out a path forward, agencies can simultaneously rid themselves of this debt while implementing new technologies that can reimagine how they deliver services to those who need them.

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