

Written Testimony of

**Casey Coleman
Senior Vice President for Digital Transformation,
Salesforce Global Public Sector**

Before the

**Emerging Threats and Spending Oversight Subcommittee
of the
Committee on Homeland Security and Governmental Affairs**

U.S. Senate

***Controlling Federal Legacy IT Costs and Crafting 21st Century IT
Management Solutions***

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Good morning Chairman Hassan, Ranking Member Paul, and distinguished members of the subcommittee. Thank you for inviting me to testify today; it is a privilege to discuss federal Information Technology (IT) modernization issues with you. My name is Casey Coleman, and I am the Senior Vice President for Digital Transformation at Salesforce Global Public Sector. I have been in my current role for four years. I previously served for almost twelve years at the U.S. General Services Administration, including six and a half years as the agency's Chief Information Officer (CIO). Additionally, I have served in leadership roles at AT&T Government Solutions and Unisys Federal, and have also held consulting and engineering roles at several technology startups. I began my career as a

software engineer with a division of Lockheed Martin. The compilation of those experiences has made me acutely aware of the challenges and opportunities confronting federal IT.

Today's hearing on this important topic is very timely. Modernizing federal IT has been a priority for a long time, but the prospects for progress have been significantly improved with the emergence of modern cloud-based digital platforms. The world's largest banks, manufacturers, healthcare companies and retailers are already transforming their operations and customer service by embracing the cloud. The federal government can do the same.

Over \$92 Billion annually is spent on federal IT systems. All functions of government depend on their successful operation, including our nation's defense, public health, service to citizens, economic stability and much more. In an increasingly all-digital world, the demands and expectations on this infrastructure is growing but the government is increasingly unable to meet the demand. The result is a disruption in the public trust and vulnerability to emerging threats such as we have seen with the outbreak of COVID-19.

There are many factors that contribute to the difficulty of modernizing legacy IT systems. These systems often rely on increasingly obsolete technologies and scarce expertise to manage them, so they become brittle and prone to failure. The IT team often is hesitant to make any but the most critical changes for fear of system failure and program outages. Organizational structures and processes are developed to accommodate system limitations, which serves to inhibit innovation. And while the commercial world has moved to mobile and digital services across every industry, these innovations can be difficult and slow for the government to procure. Modern, agile IT practices require different technologies, and design skills that often are in short supply for departments and agencies.

The result is that the government becomes cut off from the rapid evolution of commercial and consumer innovation. Most importantly, the situation creates a very vulnerable cybersecurity situation. Our IT systems are under constant attack and yet we are always playing catch up, not taking advantage of best in class commercial platforms that are constantly upgraded and hardened.

Despite these challenges, there are many notable modernization success stories. I'm especially passionate about this because I've seen it firsthand. As the CIO for GSA through much of the Bush 43 and Obama Administrations, I had the privilege of leading a multi-year modernization program to move GSA to the cloud, improve security, and improve service delivery for our employees and customers.

Our first step was to consolidate all infrastructure, from 40 different contracts and 15 helpdesks, into a single agency-wide program. We cut costs by 30% and improved security patching from over a month to near real time. We modernized employee tools and remote access so that employees could work from anywhere and be closer to their customers. GSA was the first agency to migrate to cloud platforms, and we developed the FedRAMP cloud cybersecurity program. We also moved to a zero-baseline budget, so that we could understand the incumbent costs, and identify targets for modernization and cost-cutting with greater effectiveness.

When the Obama Administration announced the Cloud First policy, we led the way, becoming the first to move the entire agency to cloud platforms (Google Apps and Salesforce) for email, collaboration, productivity and low-code rapid application development tools.

Our previous system was on really old hardware. We didn't know when it went down. I used to send myself emails at night and on weekends just so I would know if it was still working. By making this shift, all of our employees had critical systems available anytime, anywhere, on any device. We vastly improved our cybersecurity and records management, and the investment paid for itself in a year. But more importantly, we were

better at our mission and more resilient. When weather emergencies like the Snowmageddon and SuperStorm Sandy hit the East Coast a few years ago, all federal offices were shut down but GSA kept right on going, working remotely. This resiliency has continued to serve them well even through the pandemic.

Why does this matter? In addition to improvements in cybersecurity, resiliency, records management and cost savings, we were *much more agile*. Modernization cannot be a once-and-done effort, or it will fade in effectiveness as the world evolves. Rather, by embracing commercial cloud platforms GSA was able to leverage commercial innovation and securely deploy new services, fast, when new demands arose.

This success story is far from unique. In 2020, we saw many governments respond almost overnight to COVID-19 challenges, rolling out digital services for contact tracing, quarantine management, unemployment claims, emergency benefits, vaccine management, and much more. We saw years of modernization compressed into a few months. These initiatives weren't on anyone's radar before the pandemic, but things that once took months or years were done in days or weeks.

What made the difference? Moving to the cloud. This rapid pace of response was enabled by innovative digital cloud platforms — commercially-delivered solutions, providing secure, prebuilt components that are nimble enough to accommodate both private and public sector needs. The primary benefit for government agencies is that it allows them to participate in an ecosystem that is regularly updated and constantly evolving to keep pace.

Why does it matter? For a Farmer, they can get their crop loan through a mobile app, get seed in the ground, and not waste a day off the tractor. For a Veteran, seeing their doctor by video means they continue to receive the treatment they need and the benefits they've earned. For all citizens, better experiences with government mean greater public trust.

And this pivot is important for government employees. No one comes into the government to step backward in time and do their work the hard way, with brittle old tools that were state of the art decades ago. They want to serve a mission, make a difference, give back. If we want to recruit and retain talented public servants who could choose to go elsewhere, we have to give them the tools that empower them and make their work effective and rewarding.

To summarize, modern cloud technology platforms are a complete game changer for improving government service delivery and mission execution. I do not mean to suggest that this is a silver bullet, and I have included recommended reforms¹ for procurement, operations and budgeting in the Recommendations below, which I am glad to discuss further. But all of those other factors only click when you add the cloud.

In closing, technology modernization is absolutely essential in order to ensure the federal government is able to deliver its critical missions for the good of our nation. I am confident that this is achievable and have observed first-hand what can be achieved, and the trust dividend that successful modernization delivers. Thank you to the Subcommittee for your focus on this vital matter and I look forward to more detailed conversations.

¹ A thoughtful summary of recommended reforms can be found at <https://alliance4digitalinnovation.org/>, in the downloadable PDF report “Priorities for the Incoming Administration and Congress,” December 2020

I would like to respectfully submit the following suggestions for federal IT modernization:

1. Fix the Way the Government Acquires and Uses Technology Solutions. The Federal government's response to the COVID-19 pandemic has shown what is possible when exigent circumstances arise and immediate challenges require innovative thinking and new technology operating models. Going forward, agencies should build on the bright spots that have surfaced during this difficult time and powerfully embrace disruption in all aspects of the technology, security, and IT acquisition. To ensure this change is lasting, the 117th Congress can pursue legislation that would repeal numerous outdated Federal IT laws (such as [Clinger-Cohen](#) and the [E-Government Act of 2002](#)) and in their place create a new, comprehensive foundation for Federal IT operations, management, acquisition, and oversight.²
2. We are encouraged to see the increased funding for the Technology Modernization Fund (TMF) and participated in a multi-association [letter](#) recommending reforms to help departments and agencies take full advantage of this significant opportunity³. These reforms include improved project selection, more robust program office staffing, and expanded repayment options. Additionally, I believe that prioritizing projects that utilize digital cloud platforms will result in the best and most lasting outcomes.
3. Technology modernization and management agenda recommendations to the new Administration were published by [ACT-IAC](#), an educational nonprofit that brings government and industry together. I participated in the committee that developed the recommendations and would commend these to the Subcommittee as a [framework](#) that supports IT modernization.⁴ Notably, we suggest the creation of an "Agile First" policy, similar to the Cloud First policy of

² More details of this recommendation can be found at <https://alliance4digitalinnovation.org/>, in the downloadable PDF report "Priorities for the Incoming Administration and Congress," December 2020

³

https://alliance4digitalinnovation.org/wp-content/uploads/2021/03/Letter-to-OMB-and-GSA-on-TMF-Implementation_03-24-2021.pdf

⁴ <https://www.actiac.org/content-page/agenda-2021-presidential-election-project>

the Obama Administration, to update the government's policy and process foundation to match the focus on modern IT.

4. Our team and I would be delighted to visit with Subcommittee Members and staff to share more details of government modernization successes and challenges, to help with greater context and understanding.

ADDENDUM

As a final observation, one of the most complex and costly IT challenges for the federal government is its multitude of Enterprise Resource Planning (ERP) systems. Salesforce has developed a white paper on a way forward for the government and especially for the Department of Defense. We would like to submit this as an attachment for consideration by the Subcommittee.



Salesforce Global Public Sector Government Affairs IT Reform Objectives for the Department of Defense

Problem Statement

Over the last several decades, the Department of Defense has implemented a tremendous number of Enterprise Resource Planning Systems (ERPs) that were developed by independent system integrators; each one being highly customized to reflect the as-is business processes for each business domain. This has resulted in a DoD business mission area saturated with monolithic, inflexible business systems which require incredible cost and time to implement change requests or add capabilities. Without proper governance and systems oversight, the department now has an enterprise architecture that is sub-optimized and unaffordable in the out years due to the significant resources required to upgrade which involve reengineering of the customizations, business processes, databases, workflows, and a seemingly endless amount of data migration activity. Customization more often results in a negative user experience, and impedes required collaboration and coordination - limiting the ability to operate at the speed of conflict and relevance, aside from the impact to employee (both civilian and military) retention rates. An additional effect of the rigidity and time consuming scalability of ERPs is the expanded system and application development outside of the ERP with no common portfolio rationalization approach. With the rise in system development, the department is now confined by legacy systems and applications with a great deal of technical debt, cyber and IT audit challenges, and end of life software.

In our dynamic environment, it is critical that the DoD's business systems represent the best of the commercial private sector, and allow for timely, accurate, and secure data for decision making.

Recommendation

Through a collaborative and transparent set of discussions and meetings with the Professional Staff and the Members, Salesforce would recommend that the US Congress - the committees of jurisdiction for the Department of Defense - engage one another to ensure future IT solutions are as military as necessary, and as commercial as possible. As mentioned by Senator Jack Reed, Chairman of the Senate Armed Services Committee, at the Emerging Technologies and Their Impact on National Security hearing on 23 February 2021, *"We need to make sure we are looking at the right technologies, have the processes in place to take advantage of them and to deliver new capabilities to war fighters at the speed of technological change. Overlaying this is the competition with China in both the national security and economic sectors."*

We believe that the DoD needs to change the way it looks at software development and acquisition, as well as the underlying technology to avoid perpetuation of an environment that consistently eats away at the services O&M appropriation by creating technical debt. This can be solved by forming a committee of private sector professionals and government experts to provide a report on how to reform the DoDI 5000.75 - Business Capability Acquisition Cycle to provide for the ability to quickly acquire best-in-class technology such as SaaS and PaaS solutions. We also believe that the Department of Defense is predisposed to acquiring monolithic ERPs and customizing the modules to fit as-is business processes, vice utilizing a SaaS solution to digitally transform enterprise operations by providing a Post-Modern ERP solution that puts the Service Member at the center of every transaction. This post-modern ERP and multi-cloud approach provides fit for purpose architecture that enforces speed, agility, transparency, and mobile solutions.

Solutions

We are eager to see the Department continue to work on implementing these innovative practices and measures and believe additional steps would improve the Department's ability to access the most innovate, secure software available to support the Business Mission Area with speed, agility to provide rapid deployment of capabilities and incremental improvements:

- **Reform the Business Capability Acquisition Lifecycle (DoD 5000.75):** DoD should embrace agile software development, incremental delivery, cloud migration, Software as a Service adoption, and Human Centered Design User Experience. DoD has often experienced cost overruns and schedule delays to defense business system investments, while delivering capabilities that no longer align to the current need and requirement of business leaders. BCAC was implemented inefficiently and modified by many in the department to a series of waterfall, milestone driven steps that hamper any

opportunity to implement with speed and agility. The committee should mandate that current and future business domains be assessed as a fit for purpose Platform as a Service (PaaS) or Software as a Service (SaaS) solution with current or emerging platforms. The committee should enforce and mandate the use of PaaS or SaaS and require a justification be presented otherwise.

- **Embrace best-in-class commercial solutions:** DoD continues to maintain and sustain a business domain portfolio of primarily antiquated, legacy systems and applications with cyber security vulnerabilities, technical debt, out of date and unsupported software and hardware, and financial audit findings. To alleviate this grave situation across the entire department, the single path to Enterprise Resource Planning (ERP) solutions will not work as we have seen over the past two decades. DoD must take a leap to current technology through digital transformation and not ERP modernization alone. ERP modernization is a must and should be the priority of the department to reduce, consolidate and focus on core functionality of the ERP (HR core, FM General Ledger, Logistics). The committee should mandate and enforce compliance of digital transformation and a future state architecture of multi-cloud solutions complementing the ERP. Multi-cloud solutions allow efficiency, speed and agility to deliver and scale with Software as a Service solutions that are secure, scalable and available. This platform approach to portfolio management greatly reduces the complexities of the legacy environment, reduces the system inventory and challenges, increases capacity and capability and enforces improved warfighter readiness.

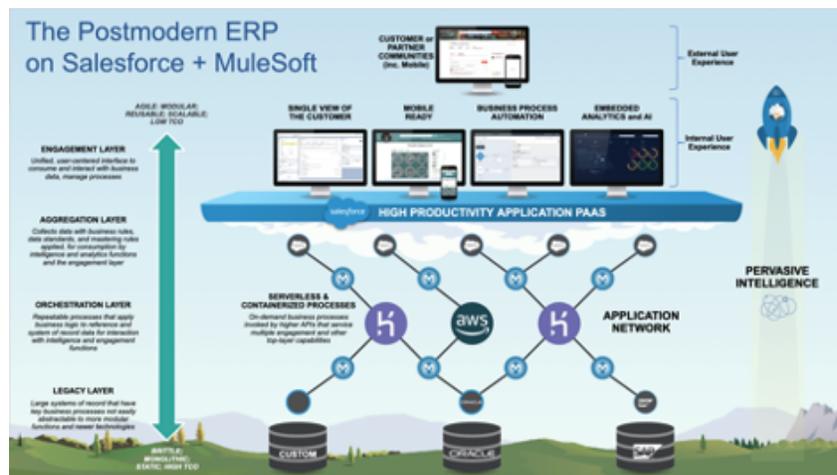
- **Embrace Business Process Automation (BPA), Business Process Reengineering (BPR) and Workflow Automation through the adoption and utilization of SaaS:** DoD is plagued with manual, repetitive and redundant business processes across the business mission area. These antiquated processes deliver untimely and out of date business services to all servicemembers and their families – the DoD’s top priority should be best practices and services to the warfighter and families. The lack of business process automation makes any department wide business service standardization impossible as we have seen over the many years and attempts to design and deliver joint solutions. With the adoption of SaaS, the services and agencies can reimagine business processes and workflows in a completely automated, transparent and efficient manner. The committee should mandate the establishment of a business reform council and governance body within OSD that evaluates the services and agencies in the adoption of business reform that enforces business process automation, standardization and a community of practice across the department to share best practices and streamline services delivered to warfighters and their families globally.

- **Human Centered Design and Mobile:** DoD has often experienced a poor user experience through the lack of focus in designing services and solutions that are personalized like servicemembers’ personal lives. Historically, the user experience or user interface has been an afterthought when fielding business systems and applications. The committee should mandate the use of Human Centered design

principles in the ideation phase of new solutions to meet current and emerging needs. The committee should manage compliance through the reformed BCAC process to require user input, ethnography and incorporation of modern user interfaces, consistently found in SaaS platforms. Further, the committee should mandate a mobile strategy across the department and track service and agency progress toward fielding business solutions and services that offer mobile apps without the use of the Common Access Card. There are many emerging Identify, Credentiaally, and Access Management tools in the Gov Cloud marketplace that offer multi-factor authentication.

- **Planning, Programming, Budgeting, Execution (PPBE) Reform:** The Department of Defense utilizes a decades old governance model and process for the building of the Program Objective Memorandum, and its Budget. The Senate Armed Services Committee should require a report on how this process could be modernized and optimized along with an implementation plan. The current PPBE system does not allow for agility when responding to fact of life changes in defense and national security strategy, and requirements can take 2+ years to reach the President’s Budget submission. To move at the speed of relevance and implement modern technology that will enable our ability to maintain overmatch with our peer adversaries, a thorough review of the entire PPBE process is overdue.
- **Post Modern ERP:** We recommend that the DoD adopt a new approach, which Gartner characterizes as “Postmodern ERP Enterprise” ensuring the existing DoD ERPs, and their feeder systems, are integrated with an agile SaaS/PaaS platform, like Salesforce, in an effort to orchestrate new systems (both on premise and cloud) to create a new “System of Service Member Engagement.”

Salesforce proposes the DoD assess all the thousands of existing scripted and coded customizations in the ERP environments that are causing massive ERP upgrade issues and determine which defense business processes are logical candidates to be moved to the agile



Salesforce PaaS platform, thus relegating ERP back to its core functionality. This would reduce the complexity and cost of the current DoD ERP environment, and result in an agile, low-code/no-code solution to solve challenges quickly and affordably. Further, Salesforce proposed the DoD evaluate the business mission area domain and plethora

of legacy systems that can easily be roadmapped to the Salesforce platform and sunset/decommissioned.

The key to streamlining the process without sacrificing the user experience is to separate the user interaction layer from the transactional data hub. When you provide a powerful user layer (Customer Relationship Management or “CRM” solution) for your processes everyone benefits by having a 360-degree view into its customers (the Service Member), the users and all interactions, automating the business life-cycle processes, and collaborating with the stakeholders in a single user experience. Transactional records can be stored in the on-prem ERP, but made visible in Salesforce through our flexible data integration options. This can be configured easily and quickly through rapid application development and be based on current use cases and data guidelines.

We believe that using separate platforms for these functions would facilitate a significantly improved user experience, improve data quality, increase agility, and significantly lower costs. Please refer to the following diagram and our recommendations for Salesforce as the user layer.

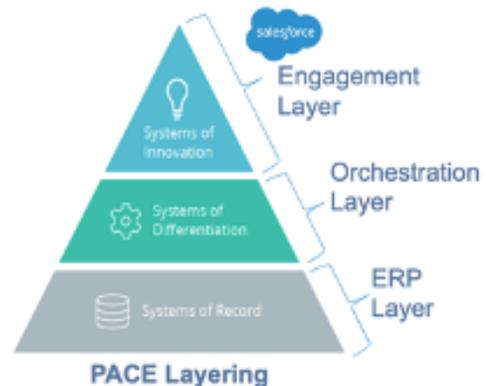
Gartner PACE Layered Application Model



Gartner's Pace-Layered Application Strategy is a new methodology for categorizing applications and developing a differentiated management and governance process that reflects how they are used and their rate of change.

- **Systems of Innovation** — New applications that are built on an ad hoc basis to address new business requirements or opportunities. These are typically short life cycle projects (zero to 12 months) using departmental or outside resources and consumer-grade technologies.
- **Systems of Differentiation** — Applications that enable unique company processes or industry-specific capabilities. They have a medium life cycle (one to three years), but need to be reconfigured frequently to accommodate changing business practices or customer requirements.
- **Systems of Record** — Established packaged applications or legacy homegrown systems that support core transaction processing and manage the organization's critical master data. The rate of change is low, because the processes are well-established and common to most organizations, and often are subject to regulatory requirements.

Source: Gartner, Inc. (NYSE: IT), the world's leading research and advisory company



Conclusion

These recommendations support congressional interest in expanding and solidifying the use of agile software development methodologies, cloud infrastructure hosting, SaaS adoption, and a focus on streamlined/modern business processes and services supporting servicemembers and their families. Further, these recommendations will drive three major outcomes: transformed, personalized user experience, significantly enhanced business process and workflow automation, and system and application rationalization. By pursuing the recommendations outlined above, the DoD can achieve digital transformation and a common business services model across the department, meeting efficiency and effectiveness goals while preserving the

precious resources appropriated to the department and providing for a “back office business function” that supports our ability to maintain overmatch with our near-peer adversaries.