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INTERNAL REVENUE SERVICE'S INFORMATION TECHNOLOGY MODERNIZATION EFFORTS

HEARING

BEFORE THE

SUBCOMMITTEE ON OVERSIGHT

OF THE

COMMITTEE ON WAYS AND MEANS
U.S. HOUSE OF REPRESENTATIVES

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IRS REFORM: CHALLENGES TO MODERNIZING IT INFRASTRUCTURE

WEDNESDAY, OCTOBER 4, 2017

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON WAYS AND MEANS,
SUBCOMMITTEE ON OVERSIGHT,
Washington,DC.

The Subcommittee met, pursuant to call, at 9:01 a.m., in Room 2020, Rayburn House Office Building, Hon. Vern Buchanan [Chairman of the Subcommittee] presiding.

[The advisory announcing the hearing follows:]

WAYS AND MEANS
CHAIRMAN KEVIN BRADY

Chairman Buchanan Announces Hearing on the Internal Revenue Service's Information Technology Modernization Efforts

House Ways and Means Oversight Subcommittee Chairman Vern Buchanan (R-FL) announced today that the Subcommittee will hold a hearing on the Internal Revenue Service's (IRS) efforts to modernize its information technology (IT) infrastructure. The hearing is entitled "IRS Reform: Challenges to Modernizing IT Infrastructure." The hearing will focus on the current state of IRS IT, the challenges faced as the IRS seeks to modernize its IT infrastructure, and areas where the IRS could further improve its efforts. **The hearing will take place on Wednesday, October 4, 2017 in 1100 Longworth House Office Building, beginning at 10:00 AM.**

In view of the limited time to hear witnesses, oral testimony at this hearing will be from invited witnesses only. However, any individual or organization may submit a written statement for consideration by the Committee and for inclusion in the printed record of the hearing.

DETAILS FOR SUBMISSION OF WRITTEN COMMENTS:

Please Note: Any person(s) and/or organization(s) wishing to submit written comments for the hearing record must follow the appropriate link on the hearing page of the Committee website and complete the informational forms. From the Committee homepage, http://waysandmeans.house.gov, select "Hearings." Select the hearing for which you would like to make a submission, and click on the link entitled, "Click here to provide a submission for the record." Once you have followed the online instructions, submit all requested information. ATTACH your submission as a Word document, in compliance with the formatting requirements listed below, **by the close of business on Wednesday, October 18, 2017**. For questions, or if you encounter technical problems, please call (202) 225-3625.

FORMATTING REQUIREMENTS:

The Committee relies on electronic submissions for printing the official hearing record. As always, submissions will be included in the record according to the discretion of the Committee. The Committee will not alter the content of your submission, but we reserve

the right to format it according to our guidelines. Any submission provided to the Committee by a witness, any materials submitted for the printed record, and any written comments in response to a request for written comments must conform to the guidelines listed below. Any submission not in compliance with these guidelines will not be printed, but will be maintained in the Committee files for review and use by the Committee.

All submissions and supplementary materials must be submitted in a single document via email, provided in Word format and must not exceed a total of 10 pages. Witnesses and submitters are advised that the Committee relies on electronic submissions for printing the official hearing record.

All submissions must include a list of all clients, persons and/or organizations on whose behalf the witness appears. The name, company, address, telephone, and fax numbers of each witness must be included in the body of the email. Please exclude any personal identifiable information in the attached submission.

Failure to follow the formatting requirements may result in the exclusion of a submission. All submissions for the record are final.

The Committee seeks to make its facilities accessible to persons with disabilities. If you are in need of special accommodations, please call 202-225-1721 or 202-226-3411 TTD/TTY in advance of the event (four business days notice is requested). Questions with regard to special accommodation needs in general (including availability of Committee materials in alternative formats) may be directed to the Committee as noted above.

Note: All Committee advisories and news releases are available at http://www.waysandmeans.house.gov/

Chairman BUCHANAN. The Subcommittee will come to order. We have Members that are running late, but I thought we would get started with this. Welcome to the Ways and Means Oversight Subcommittee hearing on IRS Reform: Challenges to Modernizing IT Infrastructure. Today's hearing will focus on the current state of the IRS IT, the challenges faced as the IRS seeks to modernize itself, and areas where the IRS could improve its efforts. The importance of this topic cannot be understated. A modern, efficient, IT infrastructure is essential to effective tax administration, something that we would all like to see in the near future.

While I am sure today we will hear a lot about the idea of budgetary needs, this is not just simply a budgetary issue. Budget is one aspect of running a successful enterprise. However, as a guy that ran businesses over the years, I don't always have the money for everything I would like to do. Instead, I have to make tough decisions and set priorities in terms of my business moving forward in the future.

Work from both the GAO and the inspector general has shown many instances where the IRS decision-making has led to significant IT problems. For example, in 2010, the IRS was instructed by the USCIO to pursue a cloud-first strategy. However, the IRS did not begin to work on the cloud strategy until 2016, and could not readily produce a full inventory of its clouds. The IRS has also spent millions of dollars procuring an IT system that later determined cannot be used.

Again, examples such as these are not budget failures. They are management failures. But I am first to agree that we need to have a long-term vision in this area. As we examine tax administration

reform, we welcome a discussion on changes to the IRS, its budget. However, changes to the budget must be coupled with better management and governance of its resources the IRS already has.

As I have said before, we would like to see the IRS work to improve how it procures and implements its IT systems. We also want to see the IRS be good stewards of the resources that we have already given them. To that end, I look forward to hearing from the witnesses today on ways we might improve the management, the IRS, and IT investment.

The Ranking Member is not present today, so we will move forward with witness testimony. Without objection, other Members' opening statements will be made part of the record.

Today's witness panel includes four experts: Jeffrey Tribiano, Deputy Commissioner for Operating Support at the IRS; Gina Garza, Chief Information Officer at the IRS; Danny Verneuille, Assistant Inspector General for Audit for Security and Information Technology Services at TIGTA; David Powner Director of IT Management Issues at the GAO.

The Subcommittee will have received your written statements, and they will be made part of the formal hearing record. You each have five minutes to deliver your oral remarks.

We will begin with the gentleman here to the left. You may start when you are ready.

STATEMENT OF JEFFREY J. TRIBIANO, DEPUTY COMMISSIONER FOR OPERATIONS SUPPORT, ACCOMPANIED BY SILVANA GINA GARZA, CHIEF INFORMATION OFFICER, INTERNAL REVENUE SERVICE

Mr. TRIBIANO. Thank you, Mr. Chairman.

Chairman Buchanan, members of the subcommittee, my name is Jeff Tribiano, and I am the Deputy Commissioner for Operations Support at the IRS. I appreciate the opportunity to testify today.

In my position at the IRS, I oversee internal operations and administration, which includes information technology, human capital, finance, privacy, procurement, planning, facilities, security, enterprise risk, and the Office of Equity Diversity and Inclusion. Joining me at the witness table is Ms. Gina Garza, the IRS's Chief Information Officer.

Providing outstanding taxpayer service is an ongoing high priority for the IRS. A safe, secure, and efficient, and up-to-date information technology system plays an increasing important role in our efforts to sustain and improve taxpayer service. The most visible taxpayer service the IRS provides is the delivery of a smooth, problem-free tax filing season, so people can file their returns and receive their refunds as quickly and easily as possible.

Our IT systems process more than 150 million individual income tax returns, and we pay out more than $300 billion in refunds to individuals each year. During the filing season and throughout the year, we provide taxpayer services through a variety of delivery channels to help taxpayers file their returns accurately and on time. Hereto, our IT systems are an essential component of our service efforts.

For example, IT supports our call center operation, which is one of the largest in the country, with which we answer over 60 million

taxpayers' calls in 2016. Our IT systems also support our ability to offer online services, which we continue to expand in response to increasing taxpayer demand.

The agency has been working for several years on longer term improvements to taxpayer experiences, and to tax administration. In this effort, the IRS relies heavily on information technology to help carry out these improvements. A major part of the initiative is developing an online account where taxpayers, or their representatives, can log on securely, get information about their account, and interact with the IRS as needed, including self-correcting some issues.

Last year, we took the first step towards this when we launched an application on IRS.gov that provides information to taxpayers who have straightforward balance inquiries. Since its launch, this new tool has been used by taxpayers more than 1.7 million times.

Providing outstanding taxpayer service also involves ensuring the information taxpayers provide to the IRS will be kept secure. We are constantly working to protect our main computer systems from cyber incidents, intrusions, and attacks. Our core tax processing systems remain secure and currently withstand more than 1 million attempts to maliciously access the system each day.

Another important area that IT supports is our battle against stolen identity refund fraud. Over the past years, we have made steady progress in protecting against this crime. That progress has accelerated since 2015, thanks to the collective efforts of the Security Summit Group and the implementation of the Return Review Program, or what we call RRP. The efforts of this strong, unique partnership between the public and private sectors, combined with RRP's ability to enhance our fraud filters has produced real results. In fact, the number of people reported to us that they are victims of identity theft declined from 698,000 in calendar year 2015 to 376,000 in 2016, a drop of more than 47 percent, and that decline has continued in 2017.

For the IRS to improve, even to maintain all these services, it is critical for our IT systems to be up to date. But they have long been operating with antiquated hardware and software. Approximately 64 percent of the IRS hardware is aged and out of warranty. And 32 percent of the software is two or more releases behind the industry standards, with 15 percent more than four releases behind.

The IRS needs to upgrade its IT infrastructure not only to help ensure reliable and modern taxpayer service, but also to mitigate the risk to the system. This is a high priority for us. We are concerned that the potential for a catastrophic system failure is increasing as our infrastructure continues to age. But in working modernization of our IT systems, the IRS faces a number of challenges. None is more critical than our budget. The IRS budget is currently about $900 million below what it was in 2010. And modernizing at a faster pace will require significant and substantial additional resources in the IT area.

Along with providing adequate funding, Congress can also help us by reauthorizing streamline critical pay authority. The loss of this authority has made it very difficult and time consuming to re-

cruit, retain employees, and expertise in highly technical areas in IT, such as cybersecurity, architecture, engineering, and operation.

Chairman Buchanan and members of the subcommittee, this concludes our opening statement, and we are happy to take your questions.

[The prepared statement of Mr. Tribiano and Ms. Garza follows:]

WRITTEN TESTIMONY OF
JEFFREY J. TRIBIANO
DEPUTY COMMISIONER FOR OPERATIONS SUPPORT
AND
SILVANA GINA GARZA
CHIEF INFORMATION OFFICER
INTERNAL REVENUE SERVICE
BEFORE THE
HOUSE WAYS AND MEANS COMMITTEE
SUBCOMMITTEE ON OVERSIGHT
ON IRS INFORMATION TECHNOLOGY SYSTEMS
OCTOBER 4, 2017

INTRODUCTION

Chairman Buchanan, Ranking Member Lewis and members of the Subcommittee, thank you for the opportunity to appear before you today to discuss the IRS's information technology (IT) systems and their role in delivering taxpayer services.

Providing outstanding taxpayer service is an ongoing, high priority for the IRS. Making it as easy as possible for taxpayers to determine what they owe by providing them prompt answers to the questions they and their preparers have is a fundamental part of our overall mission.

A safe, secure, efficient and up-to-date IT system plays an increasingly important role in our efforts to sustain and improve the taxpayer experience. To deliver the improvements the IRS envisions to taxpayer service, and even to continue maintaining the current level of services we provide, it is critical for the agency's information technology systems to be up-to-date.

But our IT systems have long been operating with antiquated hardware and software. Approximately 64 percent of IRS hardware is aged and out of warranty, and 32 percent of software is two or more releases behind the industry standard, with 15 percent more than four releases behind.

The IRS needs to upgrade its IT infrastructure, not only to help ensure reliable and modern taxpayer services, but also to mitigate risks to the system. We are concerned that the potential for a catastrophic system failure is increasing as our infrastructure continues to age. Thus, replacing this aging IT infrastructure is a high priority for the IRS.

The IRS remains very appreciative of Treasury Secretary Mnuchin's support for the IRS to have appropriate resources, and for upgrading our IT systems. In fact,

a priority in the President's Fiscal Year (FY) 2018 Budget is helping the IRS improve information services by addressing its antiquated IT.

The President's budget request includes $3.9 billion for operations support. Within that total, $2.07 billion is allocated for information services, which is $216.1 million, or 11.6 percent, above the FY 2017 enacted level. This funding will allow the IRS to take the initial steps needed to bring our IT infrastructure up to date.

TAXPAYER SERVICES SUPPORTED BY IT SYSTEMS

Delivering the Tax Filing Season

The most visible taxpayer service the IRS provides is the delivery of a smooth, problem-free tax filing season, so that people can file their returns and receive their refunds as quickly and easily as possible. Our IT systems process approximately 150 million individual income tax returns and more than $300 billion in refunds each year.

Our ability to effectively manage the IRS's IT systems, despite our aged infrastructure, is evidenced by the fact that the IRS continues to deliver smooth filing seasons, amid steady growth both in the number of returns filed and the percentage of electronically filed returns over the past decade.

Today, nearly 90 percent of individual income tax returns are filed electronically. Return processing has gone smoothly, even in years where passage of tax legislation late in the year has required the IRS to move quickly to update our systems to accommodate tax changes enacted by Congress.

During the filing season and throughout the year, the IRS provides taxpayer services through a variety of delivery channels to help taxpayers file their tax returns accurately and on time. Here too, our IT systems are an essential component of our service efforts. For example, IT supports our call center operation, which is one of the largest in the country, and which answered more than 64 million taxpayers calls in 2016, including automated calls and those using a live assistor.

Our IT systems also support our ability to offer online services, which we continue to expand in response to increasing taxpayer demand. We provide a wealth of tax information on our website, IRS.gov, which was visited more than 500 million times during FY 2016, and more than 400 million times so far in FY 2017. The IRS recently completed a revamp of IRS.gov to make the site more user-friendly and to make it easier for taxpayers to view site content on their mobile devices.

Protecting Taxpayer Data

Providing outstanding taxpayer service also involves ensuring that the information taxpayers provide to the IRS will be kept secure. The IRS continues to work to protect our main computer systems from cyber incidents, intrusions and attacks, with our primary focus being on preventing criminals from accessing taxpayer information stored in our databases, as well as identifying fraud. Our core tax processing systems remain secure, and currently withstand more than one million attempts to maliciously access them each day.

We realize the solution we have in place today may be insufficient in the future, as criminal enterprises continue to invest to find ways to penetrate and exploit our systems. They are persistent and have demonstrated their ability to adapt. Their tactics are ever-changing, and so our protections must keep changing as well. We therefore must continue to invest in cybersecurity and find ways to collaborate across government. The supplemental funds that Congress provided over the last two years helped us make great progress, but continued investments are needed.

Protecting Taxpayers against Identity Theft and Refund Fraud

Along with protecting the taxpayer data we have, the IRS is also focused on protecting taxpayers who may have had their personal information stolen from outside the tax system by identity thieves, who use this information to file false returns and claim fraudulent refunds. In recent years, we have made steady progress in protecting against identity thieves, by employing information technology to assist in fraud detection.

An important advance that has helped us in the fight against identity theft has been the implementation of the Return Review Program (RRP). RRP is an integrated and unified system that enhances our ability to detect and potentially prevent tax non-compliance. During the 2016 filing season, RRP replaced the legacy Electronic Fraud Detection System (EFDS) as the government's primary line of defense against tax noncompliance in general and stolen identity refund fraud in particular. Continued investment in RRP will allow the IRS to retire EFDS and thereby address more sophisticated instances of identity theft more quickly.

Over the past two years, our progress against stolen identity refund fraud has accelerated, thanks to the collaborative efforts of the Security Summit Group, a unique partnership launched in March 2015 that includes the IRS, industry leaders and state tax commissioners. Our collaborative efforts have put in place many new safeguards beginning in the 2016 filing season that produced real results.

Since 2015 we have had fewer fraudulent returns entering our systems, fewer bad refunds going out the door, and fewer tax-related identity theft victims than in

previous years. To illustrate, the number of people who reported to the IRS that they were victims of identity theft declined from 698,700 in Calendar Year (CY) 2015 to 376,500 in 2016 – a drop of nearly half.

The decline has continued during 2017. In the first five months of this year, about 107,400 taxpayers reported they were victims of identity theft, compared to the same period in 2016 when 204,000 filed victim reports. That amounts to 96,000 fewer victims and represents a drop of about 47 percent. Taken together, the number of taxpayers over the last two years who reported being victims of tax-related identity theft has dropped by about two-thirds.

Providing for the Future of Taxpayer Service

In addition to ensuring that the basic taxpayer experience with the IRS is safe, secure and functional, the agency has been working for several years on longer-term improvements to the taxpayer experience and tax administration. In this effort, the IRS relies heavily on our information technology systems to help carry out these improvements.

Our goal is to have a more proactive and interactive relationship with taxpayers and tax professionals by offering them the services, tools and support they want, in ways that are both innovative and secure. We are effectively trying to catch up with the kinds of online and virtual interactions people already use in their daily lives to communicate with banks, retailers, medical providers and many others.

A major part of our initiative is developing an online account where taxpayers, or their representatives, can log in securely, get information about their account, and interact with the IRS as needed, including self-correcting some issues.

In December 2016, we took the first step toward this with the launch of an application on IRS.gov that provides information to taxpayers who have straightforward balance inquiries. Since its launch, this new tool has been used by taxpayers more than 1.7 million times. We recently added another feature that lets taxpayers see recent payments posted to their account. These balance-due and recent-payment features, when paired with existing online payment options, have increased the availability of secure, self-service interactions with the IRS through IRS.gov.

These are important steps, and over time, we will be adding other features to this platform as they are developed and tested with taxpayers and tax professionals. One of these features which is now in testing is Taxpayer Digital Communications. Taxpayer Digital Communications is intended to provide a secure online messaging capability so that taxpayers, their authorized representatives and IRS employees can correspond electronically and resolve issues more quickly than through traditional mail while maintaining security.

Providing the Taxpayer an Effective Point of Contact

Along the way, the IRS has come to realize that our efforts to move toward the future need to involve more than just online interactions between the IRS and taxpayers and their representatives. Therefore, our efforts to use technology more efficiently has evolved to cover the entire scope of the taxpayer experience, whether on-line or in person, and poses considerable opportunities for us and for taxpayers.

Our present case management system treats each issue involving a taxpayer as a separate case. And those cases are handled throughout the agency by more than 60 aging case management systems that often don't communicate with each other. So, when taxpayers with more than one pending issue calls the IRS, they have to be transferred from one area to another to get the assistance they need.

We are in the process of developing an Enterprise Case Management (ECM) system that will modernize, upgrade and consolidate our existing separate case management systems and give any authorized IRS employee the ability to see the entire range of issues and communications with an individual taxpayer.

This will be a major improvement for taxpayers who call or visit us to resolve an issue, because it means that any IRS employee they go to for help can easily access the history of their dealings with the agency, including previous paper or verbal communications. In that way, our employees can more quickly and easily answer taxpayer questions and resolve issues.

When completed, ECM will also increase our internal efficiency by giving us the ability to easily transfer cases between IRS divisions, since the basic information will be in a readily accessible database that does not require us to physically move a case from one system to another. This often involves printing, packaging and mailing hard copies from office to office.

Another initiative that will help the IRS improve the taxpayer experience is the Event Driven Architecture (EDA) framework, which will allow us to process tax returns in near-real time. Once in place, the EDA framework will allow the IRS to, for example, notify taxpayers of potential errors on a return as soon as it is filed, and let taxpayers quickly correct return errors online – a major advance over the current system, in which the IRS corresponds with taxpayers by mail regarding potential problems in their returns.

These and other improvements depend upon our continued development of the Customer Account Data Engine (CADE 2), which is our centralized database for all individual taxpayer accounts and allows IRS employees who are helping resolve taxpayer issues to easily access the taxpayer's information.

When fully implemented, CADE2 will replace the legacy Individual Master File (IMF), which historically has been the primary data source for individual taxpayer accounts. CADE2 is replacing the IMF in three major steps. It is important to note that this is a complex, multistep process – not a single, easily accomplished action. The steps we have undertaken thus far have already provided important improvements to our ability to interact with taxpayers efficiently and effectively.

CHALLENGES TO MODERNIZING IRS IT SYSTEMS

In recent years, Congress has tasked the IRS with implementing several legislative requirements. Satisfying these requirements has involved significant IT investments, diverting staff and resources that otherwise could have been used to continue modernizing our major IT systems and aging IT infrastructure.

These legislative requirements include those stemming from: the Affordable Care Act (ACA); the Foreign Account Tax Compliance Act (FATCA); the Achieving a Better Life Experience (ABLE) Act, which includes a new certification requirement for professional employer organizations; reauthorization of the Health Coverage Tax Credit (HCTC); a private debt-collection program; and a registration requirement for newly created 501(c)(4) organizations.

Loss of Streamlined Critical Pay Authority

The IRS also needs to be able to attract individuals from the private sector with highly specialized IT skills and expertise, particularly for our leadership positions in IT. In the past, the IRS has successfully recruited such individuals using streamlined critical pay authority that was enacted in 1998.

In fact, TIGTA noted in a 2014 report that the IRS had appropriately used this authority, by adequately justifying the positions, demonstrating the need to recruit or retain exceptionally well-qualified individuals, and adhering to pay limitations. This authority expired at the end of FY 2013 and has not yet been renewed.

The loss of streamlined critical pay authority has created major challenges to our ability to retain employees with the necessary high-caliber expertise in IT and other specialized areas. In fact, there are no longer any expert leaders or IT executives under streamlined critical pay authority at the IRS. The President's FY 2018 Budget proposes reinstating this authority, and we urge Congress to approve this proposal.

Chairman Buchanan, Ranking Member Lewis, and Members of the Subcommittee, this concludes our statement, and we would be happy to take your questions.

Chairman BUCHANAN. Thank you.

Ms. Garza, you are recognized.

Ms. GARZA. I have no opening statement. It was with Jeff.

Chairman BUCHANAN. Okay. Let's see. Mr. Verneuille, you are recognized.

STATEMENT OF DANNY VERNEUILLE, ASSISTANT INSPECTOR GENERAL FOR AUDIT, TREASURY INSPECTOR GENERAL FOR TAX ADMINISTRATION (TIGTA)

Mr. VERNEUILLE. Chairman Buchanan, members of the subcommittee, thank you for the opportunity to discuss challenges to modernizing the IRS infrastructure. The IRS will spend about $2.9 billion, or 26 percent of its fiscal year 2017 appropriations on information technology. About $500 million of this was allocated to business systems modernization. The IRS has faced significant challenges in modernizing its legacy systems.

For example, the Customer Account Data Engine 2, referred to as CADE 2, is to plan replacement of the Individual Master File that is based on a 50-year-old program and architecture. Although CADE 2 has been under development since 2009, the previous CADE initiative dates back to the late 1990s. IRS has attributed the problems with developing CADE 2 to annual filing season, resources being provided for other system development projects, and the lack of key subject matter experts. Currently, there is no planned completion date for CADE 2 development.

For the 2017 filing season, the IRS replaced the fraud detection capabilities of its legacy systems with the Return Review Program, which enhanced its capabilities to prevent, detect, and resolve criminal and civil noncompliance. However, the enterprise case management solution being developed to provide case management functions for the Return Review Program has stopped development efforts due to technical limitations in the commercial off-the-shelf product. We have an ongoing audit that will evaluate the IRS development of an enterprise case management solution and expect to issue the report in February 2018.

The IRS has been slow to modernize its operations and deploy online applications. Our audit of the IRS's implementation and use of cloud technologies and services found that the IRS does not have an enterprise-wide cloud strategy. In July 2016, the IRS created an integrated planning team with an overall goal of developing a cloud strategy. However, there is no timetable for implementation of a cloud strategy.

We also recently reported that the IRS successfully deployed four web applications as part of its future-state initiative. However, the deployments were delayed because of inconsistent governance, and lack of project funding, and incompatible workflow processes.

In addition to challenges in modernizing legacy systems, the IRS's current hardware architecture is getting older and is in need of upgrading. At the beginning of fiscal year 2017, 64 percent of the hardware is aged. This level far exceeds the acceptable level of aged hardware of 20, 25 percent. IRS management explained that its budget, over the past 5 years, has impacted their ability to reduce the aged hardware.

In conclusion, TIGTA believes the IRS needs to improve its project planning prior to starting development activities. This should include more clearly defined requirements and scope, and a well-designed architecture and comprehensive assessments of commercial off-the-shelf products to be used. The IRS also needs to ensure that it follows established methodologies to guide project development.

In addition, the IRS has more information technology demands that can be addressed with the skilled resources it has available. The IRS should focus on fewer projects and provide sufficient resources to ensure the completion of its highest priority projects. From a budget perspective, we have seen the IRS have success when appropriations are designated for specific programs such as when additional fiscal year 2016 funding was provided for cybersecurity enhancements and identity theft prevention.

In addition, we agree with the IRS's request in the fiscal year 2018 President's budget submission for additional operation support account funds to be available for 2 years. Given the length of the information technology life cycle process, 2-year funding will provide the IRS an opportunity to utilize appropriated funds before they expire.

Chairman Buchanan, that ends my statement. I look forward to your questions.

[The prepared statement of Mr. Verneuille follows:]

HEARING BEFORE THE
COMMITTEE ON WAYS AND MEANS
SUBCOMMITTEE ON OVERSIGHT
U.S. HOUSE OF REPRESENTATIVES

"IRS Reform: Challenges to Modernizing IT Infrastructure"

Testimony of
Danny Verneuille
Assistant Inspector General for Audit
Treasury Inspector General for Tax Administration
October 4, 2017
Washington, D.C.

TESTIMONY
OF
DANNY VERNEUILLE
ASSISTANT INSPECTOR GENERAL FOR AUDIT
TREASURY INSPECTOR GENERAL FOR TAX ADMINISTRATION
before the
COMMITTEE ON WAYS AND MEANS
SUBCOMMITTEE ON OVERSIGHT
U.S. HOUSE OF REPRESENTATIVES

"IRS Reform: Challenges to Modernizing IT Infrastructure"
October 4, 2017

Chairman Buchanan, Ranking Member Lewis, and Members of the Subcommittee, thank you for the opportunity to testify on the topic of challenges to modernizing information technology infrastructure at the Internal Revenue Service (IRS).

The Treasury Inspector General for Tax Administration (TIGTA) was created by Congress in 1998 to ensure integrity in America's tax system. It provides independent audit and investigative services to improve the economy, efficiency, and effectiveness of IRS operations. TIGTA's oversight activities are designed to identify high-risk systemic inefficiencies in IRS operations and to investigate exploited weaknesses in tax administration. TIGTA plays the key role of ensuring that the approximately 85,000 IRS employees[1] who collected more than $3.3 trillion in tax revenue, processed more than 244 million tax returns, and issued more than $400 billion in tax refunds during Fiscal Year (FY)[2] 2016,[3] have done so in an effective and efficient manner while minimizing the risk of waste, fraud, and abuse.

TIGTA's Office of Audit (OA) reviews all aspects of the Federal tax administration system and provides recommendations to: improve IRS systems and operations; ensure the fair and equitable treatment of taxpayers; and detect and prevent waste, fraud, and abuse in tax administration. The Office of Audit places an emphasis on statutory audit coverage required by the IRS Restructuring and Reform Act of 1998 (RRA 98)[4] and other laws, as well as on areas of concern raised by Congress, the

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[1] In Fiscal Year 2016, the IRS employed, on average, approximately 85,000 people, including more than 16,000 temporary and seasonal staff.
[2] The Federal Government's fiscal year begins on October 1 and ends on September 30.
[3] IRS, *Management's Discussion & Analysis, Fiscal Year 2016*.
[4] Pub. L. No. 105-206, 112 Stat. 685.

Secretary of the Treasury, the Commissioner of Internal Revenue, and other key stakeholders. The specific high-risk issues examined by the OA include identity theft, refund fraud, improper payments, information technology, security vulnerabilities, complex modernized computer systems, tax collection and revenue, and waste and abuse in IRS operations.

MODERNIZATION EFFORTS TO REPLACE LEGACY SYSTEMS

Successful modernization of IRS systems and the development and implementation of new information technology applications are critical to meeting the IRS's evolving business needs and to enhancing services provided to taxpayers. The IRS's reliance on legacy (*i.e.,* older) systems, aged hardware, and its use of outdated programming languages pose significant risks to the IRS's ability to deliver its mission. Modernizing the IRS's computer systems has been a persistent challenge for many years and will likely remain a challenge for the foreseeable future.

One of the IRS's top-priority information technology investments is the Customer Account Data Engine 2 (CADE 2). The IRS has been using the Individual Master File (IMF), which uses an outdated assembly language code, for more than 50 years. The IMF is the source for individual taxpayer accounts. Within the IMF, accounts are updated, taxes are assessed, and refunds are generated. Most of the IRS's information systems and processes depend on the IMF, either directly or indirectly.

In 2009, the IRS began developing CADE 2 to address the issues regarding tax processing and to eventually replace the IMF. CADE 2 is the data-driven foundation for future state-of-the-art individual taxpayer account processing and data-centric technologies designed to improve service to taxpayers, enhance IRS tax administration, and ensure fiscal responsibility.

In September 2013, TIGTA reported that the CADE 2 database could not be used as a trusted source for downstream systems due to the 2.4 million data corrections that had to be applied to the database, and to the IRS's inability to evaluate 431 CADE 2 database columns of data for accuracy.[5] To address these issues, the IRS developed additional tools and implemented a new data validation testing methodology intended to ensure CADE 2's timeliness, accuracy, integrity, validity, reasonableness, completeness, and uniqueness. The IRS requested that TIGTA evaluate the new data validation testing methodology.

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[5] TIGTA, Ref. No. 2013-20-125, *Customer Account Data Engine 2 Database Deployment Is Experiencing Delays and Increased Costs* (Sept. 2013).

In a September 2014 follow-up audit, TIGTA reported that the IRS had appropriately completed its data validation efforts.[6] According to the IRS, the CADE 2 release plan is currently being adjusted to reflect impacts of staffing challenges and various possible budget scenarios. The loss of key IMF expertise is causing the reprioritization of CADE 2 goals to focus on IMF reengineering, the suspension of projects, and the potential deferral of planned functionality to be delivered. There are several reasons for the delays in implementing CADE 2, including other organizational priorities such as the annual filing season, other major information technology investments, contracting delays, aging architecture, lack of key subject matter experts on institutionalized processes, and outdated programming languages. There is no scheduled or planned completion date for CADE 2 development.

In FY 2018, TIGTA will be initiating an audit to assess the effect of legacy systems on the IRS's ability to deliver modernized tax administration. TIGTA also plans to conduct an audit to determine the progress made on completing the CADE 2 project, including the IRS's retirement strategy for the IMF and a comparison of estimated costs to actual expenditures.

In addition to CADE 2, the IRS replaced its Electronic Fraud Detection System (EFDS) with the Return Review Program (RRP), which enhanced its capabilities to prevent, detect, and resolve criminal and civil non-compliance. The RRP is an important development in the IRS's efforts to keep pace with increasing levels of fraud and in serving the organization's evolving compliance needs.

In a September 2017 report, TIGTA reviewed the RRP to determine if the system could identify all fraud currently identified by other existing fraud detection systems, and assessed the EFDS retirement plans.[7] TIGTA concluded that the RRP better meets the IRS business objectives of delivering greater fraud detection at a lower false detection rate than the EFDS.

Results from recent tax filing seasons support the IRS's decision to retire the EFDS models. TIGTA believes that the RRP is better positioned than the EFDS to address the changing nature of identity theft. Specifically, the EFDS uses models to generate one fraud score for each return. In contrast, RRP models generate a set of

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[6] TIGTA, Ref. No. 2014-20-063, *Customer Account Data Engine 2 Database Validation Is Progressing; However, Data Coverage, Data Defect Reporting, and Documentation Need Improvement* (Sept. 2014).
[7] TIGTA, Ref. No. 2017-20-080, *The Return Review Program Increases Fraud Detection but Full Retirement of the Electronic Fraud Detection System Will Be Delayed* (Sept. 2017).

predictive scores for every return. This enables the RRP to individually assess tax returns. In addition, the RRP fraud detection models provide greater flexibility in adjusting to new emerging fraud trends than the EFDS.

The IRS retired the EFDS identity theft models for the 2016 Filing Season. The EFDS identified tax returns involving identity theft totaling $60 million (1.5 percent of the total $3.92 billion in returns involving identity theft) that were not identified by any other fraud detection system. In contrast, the RRP identified tax returns involving identity theft totaling $1.88 billion (47.8 percent of the $3.92 billion in returns involving identity theft) that were not selected by any other fraud detection system.

In addition, when the IRS ran the EFDS and the RRP non-identity theft models in parallel for the 2016 Filing Season, the RRP selected 41,710 fraudulent tax returns not selected by the EFDS, representing $328 million in revenue protection. By comparison, the EFDS selected 6,824 fraudulent tax returns not selected by the RRP, representing $17 million in revenue protected. TIGTA does not believe the relatively small amount of non-identity theft tax returns selected by the EFDS warranted delaying the retirement of the EFDS non-identity theft models after the 2016 Filing Season.

In September 2015,[8] TIGTA recommended that the IRS develop a system retirement plan for the EFDS and retire the system after validating that the RRP effectively identifies, at a minimum, all issues currently identified in the EFDS. The IRS agreed with the recommendation, and in December 2015, the IRS Executive Steering Committee unanimously approved the EFDS Retirement Strategy. However, our review of the EFDS Retirement Strategy showed that the IRS cannot shut down EFDS until all 19 system components have been decommissioned. Eleven of the 19 components are related to the Enterprise Case Management project and have retirement dates as late as December 2018. With the Enterprise Case Management project starting over with software selection, the IRS will likely miss the December 2018 target date for retiring the remaining 11 EFDS components. As a result, the IRS will continue to incur annual costs to operate and maintain the EFDS system in each filing season for which it remains in operation beyond the 2018 Filing Season. The IRS estimated that the annual operating and maintenance cost for the EFDS for the 2018 Filing Season is $13.9 million.

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[8] TIGTA, Ref. No. 2015-20-093, *Review of the Electronic Fraud Detection System* (Sept. 2015).

INFORMATION TECHNOLOGY INITIATIVES TO MODERNIZE OPERATIONS, APPLICATIONS, AND THE E-MAIL SYSTEM

In addition to modernization efforts to replace legacy systems, the IRS is developing and implementing new information technology to modernize its operations, applications, and e-mail system to provide more sophisticated tools to taxpayers and IRS employees. TIGTA has identified several areas where the IRS can improve its efforts to upgrade or enhance its information technology systems.

TIGTA conducted an audit to review the implementation and use of cloud technologies and services.[9] In July 2016, the IRS created an Integrated Planning Team with an overall goal of developing an enterprise-wide cloud strategy for implementation within the IRS. The Integrated Planning Team's mission is to help the IRS define a "cloud" and to provide some specific guidance to assist in the selection and deployment of cloud services within the IRS. However, TIGTA reported that the IRS does not have an enterprise-wide cloud strategy and also that the IRS did not follow Federal and agency cloud service guidelines for the Form 990 Cloud Project.[10] The IRS stated that there is no current timetable for adoption and implementation of the enterprise-wide cloud strategy. Not having a documented enterprise-wide cloud strategy creates a significant risk that organizations outside of the IRS Chief Information Officer and Information Technology (IT) organization may deploy systems and potentially expose Federal tax information with no reasonable assurance that the systems meet applicable Federal security guidelines. The IRS may also miss the opportunity to deliver value by increasing operational efficiency and responding more quickly to stakeholder needs.

The Tax Exempt and Government Entities Division entered into an agreement to utilize a public cloud service with limited involvement from the IRS IT organization. In October 2015, the Tax Exempt and Government Entities Division had discussions with the Associate Chief Information Officer for Enterprise Services regarding the Form 990 Cloud Project. However, the Tax Exempt and Government Entities Division was not instructed to appoint an authorizing official, generate an agency Authority to Operate letter, or ensure that the cloud service complied with Federal Risk and Authorization Management Program requirements.

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[9] TIGTA, Ref. No. 2017-20-032, *The Internal Revenue Service Does Not Have a Cloud Strategy and Did Not Adhere to Federal Policy When Deploying a Cloud Service* (Aug. 2017).
[10] A cloud service project initiated by the IRS Tax Exempt and Government Entities Division to allow public access to certain Form 990, *Return of Organization Exempt From Income Tax*, information.

A primary focus for the IRS over the past two decades has been to migrate taxpayers to electronic filing. Outside of filing activities, taxpayers also use the Internet to download forms, view content, and check the status of their refund. These types of online activities will increase as the IRS implements its Future State Initiative.[11]

TIGTA conducted an audit to review the development and implementation of the online Web Applications (Web Apps)[12] designed to deliver an online account for individual taxpayers along with the abilities to see a balance due, see payment status/history, make a payment, and view/download tax transcripts. The audit, released in September, found that the development and deployment of Release 1.0 of the Web Apps system has been significantly delayed. The Web Apps Program Management Office was initially tasked with delivering its four original functionalities for Release 1.0 of the Web Apps system by September 30, 2015. A lack of funding caused a delay in the Web Applications Program Management Office obtaining the necessary staffing resources. Similarly, the IRS's inconsistent governance process contributed to project delays. These delays prevented taxpayers from being able to use any of Release 1.0 of the Web Apps system's planned functionalities for the 2016 Filing Season.

In addition, further delays resulted in taxpayers being unable to use the Web Apps system to see payment status and history or view and download transcripts at the start of the 2017 Filing Season. To acquire this information, taxpayers had to use the separate Get Transcript Online Service or IRS2GO mobile phone app, or had to call, mail, fax, or visit an IRS taxpayer assistance center, which does not achieve the IRS's goals to modernize and increase the efficiency of the taxpayer experience. These requests could have been provided in a timelier and more direct manner by Release 1.0 of the Web Apps system if it had been deployed on schedule.

TIGTA has also evaluated the IRS's efforts to establish information technology capabilities to manage temporary and permanent e-mail records. TIGTA determined that the IRS purchased subscriptions for an enterprise e-mail system it could not use.[13] The purchase was made without first determining project infrastructure needs, integration requirements, business requirements, security and portal bandwidth, and whether the subscriptions were technologically feasible on the IRS Enterprise. IRS executives made a management decision to consider the enterprise e-mail project an

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[11] Preparing the IRS to adapt to the changing needs of taxpayers is described generally as the IRS Future State initiative. A key part of this effort is for taxpayers to have a more complete online experience for their IRS interactions.
[12] TIGTA, Ref. No. 2017-20-057, *While Release 1.0 of the Web Applications System Was Successfully Deployed, Several Factors Contributed to Implementation Delays* (Sept. 2017).
[13] TIGTA, Ref. No. 2016-20-080, *Review of the Enterprise E-mail System Acquisition* (Sept. 2016).

upgrade to existing software instead of a new development project or program. As a result, the IRS did not follow its Enterprise Life Cycle guidance. The IRS authorized the $12 million purchase of subscriptions over a two-year period; however, the software to be used via the purchased subscriptions was never deployed. The IRS violated Federal Acquisition Regulation requirements by not using full and open competition to purchase the subscriptions.

In an audit requested by the Chairman of the House Committee on Ways and Means and the Chairman of the Senate Committee on Finance, TIGTA determined that IRS policies are not in compliance with Federal electronic records requirements and regulations.[14] The IRS's current e-mail system and record retention policies do not ensure that e-mail records are automatically archived for all employees and can be searched and retrieved for as long as needed. The current e-mail system requires users to take manual actions to archive e-mail and results in e-mail records that can be stored in multiple locations, such as a mailbox folder, exchange server, network shared drive, hard drive, or on removable media or backup tape.

According to the IRS, its Future State e-mail system is being developed to potentially allow records to be available and searchable while automatically applying a retention policy. However, until a solution is effectively implemented, these e-mails remain difficult, if not impossible, to retain and search.

TIGTA has also evaluated the readiness of the IRS to establish an upgraded e-mail solution with the information technology capabilities to manage e-mail records in compliance with the directive of the Office of Management and Budget and the National Archives and Records Administration, which requires that agencies eliminate paper records and use electronic recordkeeping to the fullest extent possible.[15] TIGTA found that more effort is needed by the IRS to meet the National Archives and Records Administration e-mail management success criteria prior to the deployment of the enterprise e-mail solution. Specifically, TIGTA determined that as of January 31, 2017, 13 of the 32 (41 percent) requirements related to the e-mail management success criteria remained under development. The requirements need to be fully developed and implemented before the IRS can successfully deploy its enterprise e-mail solution. Due to delays in developing and deploying the enterprise e-mail solution, the IRS will most likely not begin receiving any of the expected benefits of Federal records reform until

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[14] TIGTA, Ref. No. 2017-10-034, *Electronic Record Retention Policies Do Not Consistently Ensure That Records Are Retained and Produced When Requested* (July 2017).
[15] TIGTA, Ref. No. 2017-20-039, *Additional Efforts Are Needed to Ensure the Enterprise E-Mail Records Management Solution Meets All Requirements Before Deployment* (Aug. 2017).

the end of Calendar Year 2017, nearly a year after the initially mandated deployment date.

HARDWARE MODERNIZATION

The IRS has a large and increasing amount of aged hardware, some of which is three to four times older than industry standards. In its FY 2016 President's Budget Request, the IRS noted that its information technology infrastructure poses significant risk of failures, although it is unknown when these failures will occur, how severe they will be, or whether they will have material impacts on tax administration during the filing season.

TIGTA conducted an audit to determine and measure the impact of inefficiencies of the IRS's aged information technology hardware. Specifically, TIGTA analyzed all FY 2016 incident tickets[16] from the Knowledge Incident/Problem Service Asset Management system[17] categorized as either "critical" or "high" for all aged information technology hardware (*e.g.,* desktop and laptop computers, servers, and telephone call routers). The aggregate length of time to resolve these incident tickets was 4,541 hours. Aged information technology hardware still in use could result in excessive system downtime due to hardware failures. As information technology hardware ages, it becomes more difficult to obtain adequate support. Aged hardware failures have a negative impact on IRS employee productivity, security of taxpayer information, and customer service.

Additionally, TIGTA reported that the IRS has not yet achieved its stated objective of reducing the percentage of its aged information technology hardware to an acceptable level of 20 to 25 percent. In fact, the IRS's percentage of aged information technology hardware has steadily increased from 40 percent at the beginning of FY 2013 to 64 percent at the beginning of FY 2017.[18] Aged information technology hardware, when combined with the fact that components of the infrastructure and systems are interrelated and interdependent, make outages and failures unpredictable

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[16] Incident tickets are created as part of the IRS's Information Technology Incident Management Process that defines the process and procedures for recording, categorizing, prioritizing, investigating, diagnosing, resolving, dispatching, monitoring, and closing out the incidents.
[17] Maintains the complete inventory of information technology and non-information technology organization assets, computer hardware, and software. It is also the reporting tool for problem management with all IRS-developed applications and shares information with the Enterprise Service Desk.
[18] TIGTA, Ref. No. 2017-20-051, *Sixty-Four Percent of the Internal Revenue Service's Information Technology Hardware Infrastructure Is Beyond Its Useful Life* (Sept. 2017).

and may also introduce security risks to critical taxpayer data that IRS systems must protect.

To provide further perspective on the negative effects that these aged hardware failures may have had on IRS employee productivity, the security of taxpayer information, and customer service, here are some examples of incidents that the IRS reported as having affected its ability to conduct daily operations.

- The existing Contact Recording[19] infrastructure is extremely aged and averages one outage per day, affecting the quality control feedback for more than 200 IRS toll-free call center employees interacting with taxpayers and their representatives.

- The IRS "Web Farm" houses over 500 internal websites, including many internal filing season-specific websites in use by all IRS business units. On October 31, 2016, the Taxpayer Advocate's web page went off-line affecting more than 1,700 employees.

- More than 30 percent of the IRS's installed network equipment had no end of software support[20] and required replacement in order to support deployment of Direct Model Personal Identity Verification. Until the hardware is replaced, no software support means no computer bug fixes, no maintenance releases, and no security patches. This significantly increased the security risk vulnerability of the at risk equipment. According to the IRS, hardware equipment for the proposed permanent solution was scheduled to be installed in August 2017.

TIGTA recommended that the Chief Information Officer conduct additional coordination with the Chief Financial Officer and other business unit executives to identify the availability of additional transfers, reprogramming, and possible carryover funds earlier in the process to maximize their use and develop plans to expeditiously spend any potential surplus funds that might become available to aid in reducing its aged information technology hardware infrastructure.

TIGTA believes the IRS needs to improve its project planning prior to starting development activities. This should include more clearly defined requirements and

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[19] A commercial off-the-shelf software package for recording interactions between IRS customer service personnel and taxpayers or their representatives.
[20] When a company ends support for a previous version of a software product or service. This may include ending support for security patches or upgrades that are used to protect users from viruses, malware, and other types of cyberattacks.

scope, a well-designed architecture, and comprehensive assessments of commercial off-the-shelf products to be used. The IRS also needs to ensure that it maintains its discipline in following established methodologies to guide project development. In addition, the IRS has more information technology demands than can be addressed with the properly skilled resources it has available. The IRS should focus on fewer projects and provide sufficient resources to ensure the completion of its highest priority projects before beginning new projects.

Finally, we have seen the IRS has success when appropriations are designated for specific programs, such as when additional FY 2016 funding was provided for cybersecurity enhancements and identity theft prevention. While the IRS needs to retain information technology funding flexibility to address legislative requirements and priorities, any additional funding should be designated for specific modernization projects with appropriate oversight to ensure timely delivery of the projects. In addition, we agree with the IRS's request in the FY 2018 President's Budget submission for additional Operations Support account funds to be available for two years due to the length of the information technology lifecycle process and because it provides the IRS with an opportunity to utilize appropriated funds before they expire.

We at TIGTA take seriously our mandate to provide independent oversight of the IRS in its administration of our Nation's tax system. As such, we plan to provide continuing audit coverage of the IRS's efforts to operate efficiently and effectively and to investigate any instances of IRS employee misconduct or other threats to tax administration.

Chairman Buchanan, Ranking Member Lewis, and Members of the Subcommittee, thank you for the opportunity to share my views.

Danny Verneuille

Assistant Inspector General for Audit

Treasury Inspector General for Tax Administration

Mr. Verneuille has served as an Auditor in the Treasury Inspector General for Tax Administration and the Internal Revenue Service Inspection Service, TIGTA's predecessor organization, for over 30 years. In July 2017, Mr. Verneuille became a member of the Senior Executive Service and was promoted to the position of Assistant Inspector General for Audit (Security and Information Technology Services). He is responsible for providing guidance and direction to audits of the IRS's information technology that evaluate systems security, systems development, and systems operations.

Prior to his current role, Mr. Verneuille was the Director, Systems Development, for TIGTA where he was responsible for reviews of the IRS's modernization and systems development efforts. He also worked as the Director, Systems Operations, where he was responsible for reviews to assess the effectiveness of IRS's information technology operations.

Mr. Verneuille has a Bachelor of Science Degree in Accounting from the University of New Orleans and is a Certified Internal Auditor.

Chairman BUCHANAN. Thank you.
Mr. Powner.

STATEMENT OF DAVID POWNER, DIRECTOR, IT MANAGEMENT ISSUES, GOVERNMENT ACCOUNTABILITY OFFICE

Mr. POWNER. Chairman Buchanan, members of the subcommittee, thank you for inviting us to testify on IRS's efforts to modernize its antiquated IT systems and infrastructure. IRS spends about $2.7 billion annually on IT. Currently, about 1.9, or 70 percent, of this goes towards operational or legacy systems, and about $800 million, or 30 percent, goes towards new development or modernization. This proportion of spending on modernization is nowhere near ideal, and IRS's situation is a common Federal IT problem, as the Federal Government as a whole spends 80 percent of its IT spend on operational systems.

Recognizing this problem, GAO put IT acquisitions and operations on our high-risk list in 2015, and we are tracking more than 800 recommendations across all agencies related to this area. Several of these are to IRS on how they prioritize and report performance on their IT modernization efforts.

This morning, I would like to discuss, one, IRS's operational systems; two, efforts to modernize these systems; and, three, steps to address this situation.

IRS's legacy, or operational systems, are critical assets that are essential to the annual collection of over $3 trillion in taxes. Some are newer systems, like the fraud detection system, which, this past filing season, prevented over $4 billion in fraudulent payments. But IRS also has some of the oldest systems in the Federal Government, including the Individual Master File, which is over 50 years old.

Our main concern with the Individual Master File is that we don't see a solid plan with realistic costs and milestones to replace it. Overall, IRS maintains over 20 million lines of assembly code. These millions of lines of archaic software and hardware that is no longer supported becomes more difficult and costly to maintain each year, and poses significant cybersecurity risks.

To IRS's credit, it keeps these old systems running during the filing season. But relying on these antiquated systems for our Nation's primary source of revenue is highly risky, meaning that the chance of having a failure during the filing season is continually increasing.

Now turning to IRS's efforts to modernize these systems, I would like to discuss the Fraud Detection System, the Foreign Account Tax Compliance Act known as FATCA, ACA, and CADE 2. CADE 2 is the system plan to replace the Individual Master File. Efforts continue to improve the Fraud Detection System. Congressional mandates like FATCA and ACA once consumed a large portion of IRS's modernization dollars, but that is no longer the case. CADE 2 is the number one modernization investment in terms of dollars. Having spent over $170 million in fiscal year 2016, and 120 in fiscal year 2017, but our ongoing work is showing that IRS is not delivering on this modernization effort as planned, nor is there a solid plan here to eventually deliver CADE 2.

We have made specific recommendations to IRS regarding modernization, but history tells us that congressional administration involvement could greatly help here starting with IRS. IRS needs to deliver on the priority modernization efforts like CADE 2. We are spending significant money here, and we are not delivering at an acceptable rate. IRS also needs to set clear modernization priorities and develop plans with accurate budgets and milestones. So, for instance, on IMF and CADE 2, we need to see exactly what it will take to convert the IMF to modern languages and replace it with CADE 2.

Again, to be clear, we need to know how much money and a date when we expect to be done. No doubt, there will likely be gaps between needs and budget realities, but we need to know how much we are off, discuss it, and get realistic, achievable plans. Congress needs to hold IRS to the plan by receiving quarterly, or at least 6-month progress reports, to make sure they stay on track, and GAO can help with this effort.

Turning to the administration. The administration has established the American Tech Council chaired by the President and the Office of Innovation, aimed at improving and modernizing Federal IT. Recently, these groups have set bold direction for the Department of Veterans Affairs to address tech improvements to better serve our vets. Leveraging these groups and setting similar direction for IRS modernization efforts are needed.

Also, last fall, the comptroller general, Gene Dodaro, held a forum on IT high risk where former and current Federal and agency CIOs told us that one of the things that is important for these large modernization efforts is having the Federal CIO involved in our Nation's most important modernization efforts.

In conclusion, when IRS focuses on priorities, we tend to get good results. Continued attention needs to occur with the filing season, congressional mandates, and fraud detection. But more needs to be done on replacing the Individual Master File. Modernizing these tax processing systems should be a top priority for our country. This concludes my statement. I look forward to your questions.

[The prepared statement of Mr. Powner follows:]

United States Government Accountability Office

GAO

Testimony

Before the Subcommittee on Oversight, Committee on Ways and Means, House of Representatives

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INFORMATION TECHNOLOGY

Management Attention Is Needed to Successfully Modernize Tax Processing Systems

Statement of David A. Powner, Director
Information Technology Management Issues

GAO-18-153T

GAO Highlights

Highlights of GAO-18-153T, a testimony before the Subcommittee on Oversight, Committee on Ways and Means, House of Representatives

October 4, 2017

INFORMATION TECHNOLOGY

Management Attention Is Needed to Successfully Modernize Tax Processing Systems

Why GAO Did This Study

The IRS, a bureau of the Department of the Treasury, relies extensively on IT to annually collect more than $3 trillion in taxes, distribute more than $400 billion in refunds, and carry out its mission of providing service to America's taxpayers in meeting their tax obligations. For fiscal year 2016, IRS expended approximately $2.7 billion for IT investments, 70 percent of which was allocated for operational systems.

GAO has long reported that the effective and efficient management of IT acquisitions and operational investments has been a challenge in the federal government. Accordingly, in February 2015, GAO introduced a new government-wide high-risk area, *Improving the Management of IT Acquisitions and Operations*. GAO has also reported on challenges IRS has faced in managing its IT acquisitions and operations, and identified opportunities for IRS to improve the management of these investments.

In light of these challenges, GAO was asked to testify about IT management at IRS. To do so, GAO summarized its prior work regarding IRS's IT management, including the agency's management of operational, or legacy, IT systems.

What GAO Recommends

GAO has made a number of recommendations to IRS to improve its management of IT acquisitions and operations. IRS has generally agreed with the recommendations.

View GAO-18-153T. For more information, contact David A. Powner at (202) 512-9286 or pownerd@gao.gov.

What GAO Found

GAO has issued a series of reports which have identified numerous opportunities for the Internal Revenue Service (IRS) to improve the management of its major acquisitions and operational, or legacy, information technology (IT) investments. For example,

- In June 2016, GAO reported that IRS had developed a structured process for allocating funding to its operations activities, consistent with best practices; however, GAO found that IRS did not have a similarly structured process for prioritizing modernization activities to which the agency allocated hundreds of millions of dollars for fiscal year 2016. Instead, IRS officials stated that they held discussions to determine the modernization efforts that were of highest priority to meet IRS's future state vision and technology roadmap, and considered staffing resources and lifecycle stage. However, they did not use formal criteria for making final determinations. GAO concluded that establishing a structured process for prioritizing modernization activities would better assist Congress and other decision makers in ensuring that the right priorities are funded.

  In the same report, GAO noted that IRS could improve the accuracy of reported performance information for key development investments to provide Congress and other external parties with pertinent information about the delivery of these investments. This included investments such as Customer Account Data Engine 2, which IRS is developing to replace its 50-year old repository of individual tax account data, and the Return Review Program, IRS's system of record for fraud detection. Accordingly, GAO recommended that IRS establish, document, and implement policies and procedures for prioritizing modernization activities, and take steps to improve reported investment performance information. IRS agreed with GAO's recommendations, and has efforts underway to address them.

- In a May 2016 report on legacy IT systems across the federal government, GAO noted that IRS used assembly language code to program key legacy systems. Assembly language code is a computer language initially used in the 1950s that is typically tied to the hardware for which it was developed; it has become difficult to code and maintain. One investment that used this language is IRS's Individual Master File which serves as the authoritative data source for individual taxpayer accounts. GAO noted that, although IRS has been working to replace the Individual Master File, the bureau did not have time frames for its modernization or replacement. Therefore, GAO recommended that the Department of Treasury identify and plan to modernize and replace this legacy system, consistent with applicable guidance from the Office of Management and Budget. The department had no comments on the recommendation.

Chairman Buchanan, Ranking Member Lewis, and Members of the Subcommittee:

I am pleased to be here today to discuss our recent work related to the Internal Revenue Service's (IRS) management of information technology (IT). IRS relies extensively on IT systems to annually collect more than $3 trillion in taxes, distribute more than $400 billion in refunds, and carry out its mission of providing service to America's taxpayers in meeting their tax obligations. For fiscal year 2016, IRS expended approximately $2.7 billion for IT investments, including $1.9 billion, or 70 percent, for operational systems, and approximately $800 million, or 30 percent, for development and modernization.

As you know, however, the effective and efficient acquisition and management of IT investments has been a long-standing challenge in the federal government. IRS, in particular, has faced challenges in managing its acquisitions and operations, and we have reported on opportunities for the agency to improve the management of its IT investments.

My statement today summarizes our prior reports that have addressed IRS's IT management, including the management of its operational, or legacy, systems.[1] A more detailed discussion of the objectives, scope, and methodology for the work conducted is included in these reports.

We conducted the work on which this statement is based in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

The mission of IRS, a bureau within the Department of the Treasury, is to (1) provide America's taxpayers top quality service by helping them understand and meet their tax responsibilities and (2) enforce the law with integrity and fairness to all. In carrying out its mission, IRS annually

[1]See for example, GAO, *Information Technology: IRS Needs to Improve Its Process for Prioritizing and Reporting Performance of Investments*, GAO-16-545 (Washington, D.C.: June 29, 2016); and *Information Technology: Federal Agencies Need to Address Aging Legacy Systems*, GAO-16-468 (Washington, D.C.: May 25, 2016).

collects over $3 trillion in taxes from millions of individual taxpayers and numerous other types of taxpayers, and manages the distribution of over $400 billion in refunds. To guide its future direction, the agency has two strategic goals: (1) deliver high quality and timely service to reduce taxpayer burden and encourage voluntary compliance; and (2) effectively enforce the law to ensure compliance with tax responsibilities and combat fraud.

IRS Relies on Major IT Investments for Tax Processing

Effective management of IT is critical for agencies to achieve successful outcomes. This is particularly true for IRS, given the role of IT in enabling the agency to carry out its mission and responsibilities. For example, IRS relies on information systems to process tax returns; account for tax revenues collected; send bills for taxes owed; issue refunds; assist in the selection of tax returns for audit; and provide telecommunications services for all business activities, including the public's toll-free access to tax information.

For fiscal year 2016, IRS was pursuing 23 major[2] and 114 non-major IT investments to carry out its mission. According to the agency, it expended approximately $2.7 billion on these investments during fiscal year 2016, including $1.9 billion, or 70 percent, for operations and maintenance activities, and approximately $800 million, or 30 percent, for development, modernization, and enhancement. We have previously reported on a number of the agency's major investments, to include the following investments in development, modernization, and enhancement:

- The Affordable Care Act investment encompasses the planning, development, and implementation of IT systems needed to support tax administration responsibilities associated with key provisions of the Patient Protection and Affordable Care Act. IRS expended $253 million on this investment in fiscal year 2016.
- Customer Account Data Engine 2 is being developed to replace the Individual Master File investment, IRS's authoritative data source for individual tax account data. A major component of the program is a modernized database for all individual taxpayers that is intended to provide the foundation for more efficient and effective tax administration

[2]IRS defines a major investment as one that costs $10 million in either the current year or budget year, or $50 million over the 5-year period extending from the prior year through the budget year +2.

and help address financial material weaknesses for individual taxpayer accounts. Customer Account Data Engine 2 data is also expected to be made available for access by downstream systems, such as the Integrated Data Retrieval System for online transaction processing by IRS customer service representatives. IRS expended $182.6 million on this investment in fiscal year 2016.

- The Return Review Program is IRS's system of record for fraud detection. As such, it is intended to enhance the agency's capabilities to detect, resolve, and prevent criminal and civil tax noncompliance. In addition, it is intended to allow analysis and support of complex case processing requirements for compliance and criminal investigation programs during prosecution, revenue protection, accounts management, and taxpayer communications processes. According to IRS, as of May 2017, the system has helped protect over $4.5 billion in revenue. IRS expended $100.2 million on this investment in fiscal year 2016.

We have also reported on the following investments in operations and maintenance:

- Mainframes and Servers Services and Support provides for the design, development, and deployment of server; middleware; and large systems and enterprise storage infrastructures, including supporting systems software products, databases, and operating systems. This investment has been operational since 1970. IRS expended $499.4 million on this investment in fiscal year 2016.

- Telecommunications Systems and Support provides for IRS's network infrastructure services such as network equipment, video conference service, enterprise fax service, and voice service for over 85,000 employees at about 1,000 locations. According to IRS, the investment supports the delivery of services and products to employees, which translates into service to taxpayers. IRS expended $336.4 million on this investment in fiscal year 2016.

- Individual Master File is the authoritative data source for individual taxpayer accounts. Using this system, accounts are updated, taxes are assessed, and refunds are generated as required during each tax filing period. Virtually all IRS information system applications and processes depend on output, directly or indirectly, from this data source. IRS expended $14.3 million on this investment in fiscal year 2016.

GAO, Congress, and the Administration Have Highlighted the Need for Government-wide Improvements for IT Acquisitions and Operations

In fiscal year 2017, the federal government planned to spend more than $89 billion for IT that is critical to the health, economy, and security of the nation. However, we have reported that prior IT expenditures have often resulted in significant cost overruns, schedule delays, and questionable mission-related achievements. In light of these ongoing challenges, in February 2015, we added improving the management of IT acquisitions and operations to our list of high-risk areas for the federal government.[3] This area highlights several critical IT initiatives in need of additional congressional oversight, including (1) reviews of troubled projects; (2) efforts to increase the use of incremental development; (3) efforts to provide transparency relative to the cost, schedule, and risk levels for major IT investments; (4) reviews of agencies' operational investments; (5) data center consolidation; and (6) efforts to streamline agencies' portfolios of IT investments. We noted that implementation of these initiatives has been inconsistent and more work remains to demonstrate progress in achieving acquisitions and operations outcomes. Between fiscal years 2010 and 2015, we made about 800 recommendations related to this high-risk area to the Office of Management and Budget and agencies. As of September, 2017, about 54 percent of these recommendations had been implemented.

The *Federal Information Technology Acquisition Reform* provisions (commonly referred to as FITARA), enacted as a part of the *Carl Levin and Howard P. 'Buck' McKeon National Defense Authorization Act for Fiscal Year 2015,* aimed to improve federal IT acquisitions and operations and recognized the importance of the initiatives mentioned above by incorporating certain requirements into the law.[4] For example, among other things, the act requires the Office of Management and Budget to publicly display investment performance information and review federal agencies' IT investment portfolios.

The current administration has also initiated additional efforts aimed at improving federal IT. Specifically, in March 2017, the administration

[3]GAO, *High-Risk Series: An Update*, GAO-15-290 (Washington, D.C.: Feb. 11, 2015). GAO maintains a high-risk program to focus attention on government operations that it identifies as high risk due to their greater vulnerabilities to fraud, waste, abuse, and mismanagement or the need for transformation to address economy, efficiency, or effectiveness challenges.

[4] Pub. L. No. 113-291, div. A, title VIII, subtitle D, 128 Stat. 3292, 3438-3450 (Dec. 19, 2014).

established the Office of American Innovation, which has a mission to, among other things, make recommendations to the President on policies and plans aimed at improving federal government operations and services and modernizing federal IT. Further, in May 2017, the administration established the American Technology Council, which has a goal of helping to transform and modernize federal agency IT and how the federal government uses and delivers digital services. Recently this council worked with several agencies to develop a draft report on modernizing IT in the federal government. The council released the draft report for public comment in August 2017.

GAO Reviews Have Identified Weaknesses with IRS's Management of Its Modernization Activities and Legacy Systems

In reviews that we have undertaken over the past several years, we have identified various opportunities for the IRS to improve the management of its IT investments. These reviews have identified a number of weaknesses with the agency's reporting on the performance of its modernization investments to Congress and other stakeholders. In this regard, we have pointed out that information on investments' performance in meeting cost, schedule, and scope goals is critical to determining the agency's progress in completing key IT investments. We have also stressed the importance of the agency addressing weaknesses in its process for prioritizing modernization activities. Accordingly, we have made a number of related recommendations, which IRS is in various stages of implementing.

- In our June 2012 report on IRS's performance in meeting cost, schedule, and scope goals for selected investments, we noted that, while IRS reported on the cost and schedule of its major IT investments, the agency did not have a quantitative measure of scope—a measure that shows whether these investments delivered planned functionality.[5] We stressed that having such a measure is a good practice as it provides information about whether an investment has delivered the functionality that was paid for. Accordingly, we recommended that the agency develop a quantitative measure of scope for its major IT investments, to have more complete information on the performance of these investments. IRS started developing a quantitative measure of scope for selected investments in December 2015 and has been working to gradually expand the measure to other investments.

[5]GAO, *IRS 2013 Budget: Continuing to Improve Information on Program Costs and Results Could Aid in Resource Decision Making*, GAO-12-603 (Washington, D.C.: June 8, 2012).

In April 2013, based on another review of IRS's performance in meeting cost, schedule, and scope goals, we reported that there were weaknesses, to varying degrees, in the reliability of IRS's investment performance information.[6] Specifically, we found that IRS had not updated investment cost and schedule variance information with actual amounts on a timely basis (i.e., within the 60-day time frame required by the Department of Treasury) in about 25 percent of the activities associated with the investments selected in our review. In addition, the agency had not specified how project managers should estimate the cost and schedule performance of ongoing projects.

As a result of these findings, we recommended that IRS ensure that its projects consistently follow guidance for updating performance information 60 days after completion of an activity and develop and implement guidance that specifies best practices to consider when estimating ongoing projects' progress in meeting cost and schedule goals. IRS agreed with, and subsequently addressed, the recommendation related to updating performance information on a timely basis. However, the agency partially disagreed with the recommendation to develop guidance on estimating progress in meeting cost and schedule goals for ongoing projects. In this regard, we had suggested the use of earned value management data as a best practice to determine projected cost and schedule amounts. IRS did not agree with the use of the technique, stating that it was not part of the agency's current program management processes and that the cost and burden to use earned value management would outweigh the value added.

We disagreed with the agency's view of earned value management because best practices have found that its value generally outweighs the cost and burden of its implementation (although we suggested it as one of several examples of practices that could be used to determine projected amounts). We also stressed that implementing our recommendation would help improve the reliability of reported cost and schedule variance information, and that IRS had flexibility in determining which best practices to use to calculate projected amounts. For those reasons, we maintained that our recommendation was warranted. However, IRS has yet to address the recommendation.

[6]GAO, *Information Technology: Consistently Applying Best Practices Could Help IRS Improve the Reliability of Reported Cost and Schedule Information*, GAO-13-401 (Washington, D.C.: Apr. 17, 2013).

- We reported in April 2014, that the cost and schedule performance information that IRS reported for its major investments was for the fiscal year only. We noted that this reporting would be more meaningful if supplemented with cumulative performance information in order to better indicate progress toward meeting goals.[7] In addition, we noted that the reported variances for selected investments were not always reliable because the estimated and actual cost and schedule amounts on which they depended had not been consistently updated in accordance with Department of Treasury reporting requirements as we had previously recommended.

  We recommended that IRS report more comprehensive and reliable cost and schedule information for its major investments. The agency agreed with our recommendation and said it believed it had addressed the recommendation in its quarterly reports to Congress. We disagreed with IRS's assertion, however, and maintained our recommendation.

- In February 2015, after assessing the status and plans of the Return Review Program and Customer Account Data Engine 2, we reported that these investments had experienced significant variances from initial cost, schedule, and scope plans; yet, IRS did not include these variances in its reports to Congress because the agency had not addressed our prior recommendations.[8] Specifically, IRS had not addressed our recommendation to report on how delivered scope compared to what was planned, and it also did not address guidance for determining projected cost and schedule amounts, or the reporting of cumulative cost and schedule performance information. We stressed that implementing these recommendations would improve the transparency of congressional reporting so that Congress has the appropriate information needed to make informed decisions. We made additional recommendations for the agency to improve the reliability and reporting of investment performance information and management of selected major investments. IRS agreed with the recommendations and has since addressed them.

[7]GAO, *Information Technology: IRS Needs to Improve the Reliability and Transparency of Reported Investment Information*, GAO-14-298 (Washington, D.C.: Apr. 2, 2014).

[8]GAO, *Information Technology: Management Needs to Address Reporting of IRS Investments' Cost, Schedule, and Scope Information*, GAO-15-297 (Washington, D.C.: Feb. 25, 2015).

- In our most recent report in June 2016, we assessed IRS's process for determining its funding priorities for both modernization and operations. We found that the agency had developed a structured process for allocating funding to its operations activities consistent with best practices,[9] which specify that an organization should document policies and procedures for selecting new and reselecting ongoing IT investments, and include criteria for making selection and prioritization decisions.

  However, IRS did not have a similarly structured process for prioritizing its modernization activities, to which the agency allocated hundreds of millions of dollars for fiscal year 2016.[10] Agency officials stated that discussions were held to determine the modernization efforts that were of highest priority to meet IRS's future state vision and technology roadmap. The officials reported that staffing resources and lifecycle stage were considered, but there were no formal criteria for making final determinations. Senior IRS officials said they did not have a structured process for the selection and prioritization of business systems modernization activities because the projects were established; and there were fewer competing activities than for operations support.

  Nevertheless, we stressed that, while there may have been fewer competing activities, a structured, albeit simpler, process that is documented and consistent with best practices would provide transparency into the agency's needs and priorities for appropriated funds. We concluded that such a process would better assist Congress and other decision makers in carrying out their oversight responsibilities. Accordingly, we recommended that IRS develop and document its processes for prioritizing IT funding. The agency agreed with the recommendations and has taken steps to address them.

  Further, we found that IRS had reported complete performance information for two of the six selected investments in our review, to include a measure of progress in delivering scope, which we have been recommending since 2012. However, the agency did not always use best

[9]These best practices are identified in GAO's Information Technology Investment Management Framework. See GAO, *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity (Supersedes AIMD-10.1.23)*, GAO-04-394G (Washington, D.C.: Mar. 1, 2004).

[10]GAO, *Information Technology: IRS Needs to Improve Its Processes for Prioritizing and Reporting Performance of Investments*, GAO-16-545 (Washington, D.C.: June 29, 2016)

practices for determining the amount of work completed by its own staff, resulting in inaccurate reports of work performed. Consequently, we recommended that IRS modify its processes for determining the work performed by its staff. The agency disagreed with the recommendation, stating that the costs involved would outweigh the value provided. Nevertheless, we maintained that the recommendation was still warranted.

IRS Faces Challenges with Managing its Aging Legacy Systems

Our work has also emphasized the importance of IRS more effectively managing its aging legacy systems. For example, in November 2013, we reported on the extent to which 10 of the agency's large investments had undergone operational analyses—a key performance evaluation and oversight mechanism required by the Office of Management and Budget to ensure investments in operations and maintenance continue to meet agency needs.[11] We noted that IRS's Mainframe and Servers Services and Support had not had an operational analysis for fiscal year 2012. As a result, we recommended that the Secretary of Treasury direct appropriate officials to perform an operational analysis for the investment, including ensuring that the analysis addressed the 17 key factors identified in the Office of Management and Budget's guidance for performing operational analyses.[12] The department did not comment on our recommendation but subsequently implemented it.

In addition, we previously reported on legacy IT systems across the federal government, noting that these systems were becoming increasingly obsolete and that many of them used outdated software languages and hardware parts that were unsupported. As part of that work, we noted that the Department of the Treasury used assembly language code—a computer language initially used in the 1950s and typically tied to the hardware for which it was developed—and Common

[11]GAO, *Information Technology: Agencies Need to Strengthen Oversight of Multibillion Dollar Investments in Operations and Maintenance*, GAO-14-66 (Washington, D.C.: Nov. 6, 2013).

[12]These factors are included in OMB's C*apital Programming Guide*, Supplement to OMB Circular A-11, Part 7 (July 2012); OMB Memorandum M-10-27 (June 2010). Examples of the factors are (1) includes a measure of how well the investment contributes to achieving the organization's business needs and strategic goals; (2) compares current performance with a pre-established cost baseline and estimates; and (3) identifies a need to redesign, modify, or terminate the investment.

Business Oriented Language (COBOL)—a programming language developed in the late 1950s and early 1960s—to program its legacy systems.

It is widely known that agencies need to move to more modern, maintainable languages, as appropriate and feasible. For example, the Gartner Group, a leading IT research and advisory company, has reported that organizations using COBOL should consider replacing the language and, in 2010, noted that there should be a shift in focus to using more modern languages for new products.[13] The use of COBOL presents challenges for agencies such as IRS given that procurement and operating costs associated with this language will steadily rise, and because fewer people with the proper skill sets are available to support the language.

Further, we reported that IRS's Individual Master File was over 50 years old and, although IRS was working to modernize it, the agency did not have a time frame for completing the modernization or replacement. Thus, we recommended that the Secretary of the Treasury direct the Chief Information Officer to identify and plan to modernize and replace legacy systems, as needed, and consistent with the Office of Management and Budget's draft guidance on IT modernization, including time frames, activities to be performed, and functions to be replaced or enhanced.[14] The department had no comments on our recommendation. We will continue to follow-up with the agency to determine the extent to which this recommendation has been addressed. In addition, we have ongoing work identifying risks associated with IRS's legacy IT systems, and the agency's management of these risks.

In summary, IRS faces longstanding challenges in managing its IT systems. While effective IT management has been a prevalent issue throughout the federal government, it is especially concerning at IRS given the agency's extensive reliance on IT to carry out its mission of providing service to America's taxpayers in meeting their tax obligations. Thus, it is important that the agency establish, document, and implement policies and procedures for prioritizing its modernization efforts, as we

[13]Gartner, IT Market Clock for Application Development, August 2010.

[14]GAO, *Information Technology: Federal Agencies Need to Address Aging Legacy Systems*, GAO-16-468 (Washington, D.C.: May 25, 2016).

have recently recommended, and provide Congress with accurate information on progress in delivering such modernization efforts. In addition, we have emphasized the need for IRS to address the inherent challenges associated with aging legacy systems so that it does not continue to maintain investments that have outlived their effectiveness and are consuming resources that outweigh their benefits. Continued attention to implementing our recommendations will be vital to helping IRS ensure the effective management of its efforts to modernize its aging IT systems and ensure its multibillion dollar investment in IT is meeting the needs of the agency.

Chairman Buchanan, Ranking Member Lewis, and Members of the Subcommittee, this completes my prepared statement. I would be pleased to respond to any questions that you may have at this time.

GAO Contacts and Staff Acknowledgments

If you or your staffs have any questions about this testimony, please contact me at (202) 512-9286 or at pownerd@gao.gov. Individuals who made key contributions to this testimony are Sabine Paul (Assistant Director), Rebecca Eyler, and Bradley Roach (Analyst in Charge).

Related GAO Products

IRS 2013 Budget: Continuing to Improve Information on Program Costs and Results Could Aid in Resource Decision Making, GAO-12-603 (Washington, D.C.: June 8, 2012)

Information Technology: Consistently Applying Best Practices Could Help IRS Improve the Reliability of Reported Cost and Schedule Information, GAO-13-401 (Washington, D.C.: April 17, 2013)

Information Technology: Agencies Need to Strengthen Oversight of Multibillion Dollar Investments in Operations and Maintenance, GAO-14-66 (Washington, D.C.: Nov. 6, 2013)

Information Technology: IRS Needs to Improve the Reliability and Transparency of Reported Investment Information, GAO-14-298 (Washington, D.C.: April 2, 2014)

Information Technology: Management Needs to Address Reporting of IRS Investments' Cost, Schedule, and Scope Information, GAO-15-297 (Washington, D.C.: February 25, 2015)

Information Technology: Federal Agencies Need to Address Aging Legacy Systems, GAO-16-468 (Washington, D.C.: May 25, 2016)

Information Technology: IRS Needs to Improve Its Processes for Prioritizing and Reporting Performance of Investments, GAO-16-545 (Washington, D.C.: June 29, 2016)

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Chairman BUCHANAN. Thank you for your excellent testimony, all of you. I will now proceed to the question-and-answer session. In keeping with my precedent, I will hold my questions until the end.

I now recognize the lady from Indiana, Mrs. Walorski.

Mrs. WALORSKI. Thank you, Mr. Chairman. Thank you to the panel for being here.

Ms. Garza, on September 7th, nearly a month ago, we learned of the single largest data breach with more than 140 million individuals being impacted. When did the IRS learn of the breach?

Ms. GARZA. So we learned it as part of the news that evening. The very next day, we got together and started to talk about what that impact to the IRS might be.

Mrs. WALORSKI. On September 8th, the next day, you were in contact with Equifax about the scope of the breach, whether it impacted the IRS data——

Ms. GARZA. That is correct.

Mrs. WALORSKI [continuing]. As you just said. In fact, IRS sent a team of IT experts, criminal investigators, and the Treasury Inspector General for Tax Administration to Atlanta, to Equifax, to verify everything that Equifax had told the IRS, correct?

Ms. GARZA. That is correct.

Mrs. WALORSKI. Did you have any reason to doubt Equifax or what they had told you during that process?

Ms. GARZA. I had no reason to doubt them, but it is our protocol to go and do a physical inspection to validate what we are being told.

Mrs. WALORSKI. Did you learn anything that caused concern?

Ms. GARZA. So, in this case there were a couple of things. One, we were able to verify, by looking at the forensics of what the bad actor did and was able to access, that none of the IRS data had been compromised. However, we did find that we had gotten inconsistent information when we had first talked to Equifax. We did find that in their network logs, along with other companies' information, some of our information that we had sent over was maintained. But, as I said, there was no evidence that the bad actors were able to get to the network logs. Their primary area to look at were the databases.

Mrs. WALORSKI. I read last night in the press that the IRS had just signed a $7 million contract to have Equifax provide identity proofing. That contract was just signed on September 29th, correct?

Ms. GARZA. That is what I have learned this morning.

Mrs. WALORSKI. So more than 20 days had passed since we learned of the greatest data breach in history, and you just signed a contract to pay Equifax to have access to IRS data for identity verification purposes. Did you approve and sign that contract?

Ms. GARZA. I did not.

Mrs. WALORSKI. Mr. Tribiano, did you approve and sign that contract?

Mr. TRIBIANO. No, ma'am, I did not.

Mrs. WALORSKI. Who signed the contract?

Mr. TRIBIANO. Our procurement officer would have signed that contract.

Mrs. WALORSKI. And who is that?

Mr. TRIBIANO. Ms. Shanna Webbers.

Mrs. WALORSKI. How many employees at the IRS have the authority to sign a $7 million contract binding the IRS on IT issues?

Mr. TRIBIANO. I would have to get back to you on that, ma'am. I don't have that number.

Mrs. WALORSKI. Can you do that?

Mr. TRIBIANO. Yes, ma'am.

Mrs. WALORSKI. You know, I am floored to sit here this morning. This is an abject failure. And I haven't been on this Committee very long. But I think this is my third or fourth hearing already on this issue of IT and who is responsible. And we sit here this morning, we talk about all these issues we have talked about before with no changes happening. The American people are sitting there this morning saying, this is beyond abject failure. This is a management failure. If nothing, it shows that the IRS structurally needs some reform and needs major change. This is why the American people hold us accountable and we try to hold you accountable. And then we have contracts being signed right in the middle of these investigations of the biggest data breach in the history of this country, exposing a massive amount of Americans now to identity theft.

Frankly, the IRS should not be in the position to have major IT acquisitions happening without you, Ms. Garza, or you, Mr. Tribiano, even knowing that they are happening. I don't think there is anything anybody can say at this point, other than pointing the fingers now to a third person that signed the contract.

Mr. Tribiano, did you want to say anything?

Mr. TRIBIANO. Yes, ma'am, if I can. I just want to clarify a couple of things, if I can, and walk through this. And this is not an excuse. This is just what happens. We had a contract with Equifax. We had two different contracts. We had one that was managed out of our privacy team, and that was for credit monitoring. That contract was competed and awarded to a different vendor. So that happened and went into effect October 1. We had the other contract, which was our eAuthenticated service contract that was competed.

Mrs. WALORSKI. Okay. Excuse me. I know we are going to run out of time here. I see the yellow light. And I know you have got to get back to me the number of people that can sign these contracts, but, obviously, Ms. Garza can, and you can, and the woman that you just explained can. Who else can? That is three right there. But who else has the authority to sign something like a $7 million contract?

Mr. TRIBIANO. I will get back to you on that, ma'am, about the numbers. But I want——

Mrs. WALORSKI. But you have to know the other people in the office that can sign.

Mr. TRIBIANO. Well, there are certain procurement officers that have warrants to be able to do that.

Mrs. WALORSKI. Are we talking 10 people? Are we talking 15 people? Are we talking five people?

Mr. TRIBIANO. The range of what procurement officers' warrants are for are varied. Some procurement officers have warrants up to a certain dollar amount. I have to be able to get you that breakdown and show you who and what category can——

Mrs. WALORSKI. I appreciate it. And I know I am out of time. Thank you, Mr. Chairman. I will yield back.

Chairman BUCHANAN. Thank you.

Mr. Holding, you are recognized.

Mr. HOLDING. Thank you, Mr. Chairman.

Ms. Garza, I think this is a question for you. As we know, the Federal Acquisition Regulation, I think, is 12.101, sets forth the acquisition principles, policies, procedures that govern acquisitions of Federal agencies. And this regulation governs the contracts, orders, and agreements entered into by the IRS, obviously. And among things, the Federal Acquisition Regulation requires prime contractors and subcontractors to incorporate, to the maximum extent possible, practicable, commercial items and components of items supplied to the agency.

So my question to you is, to what extent do you feel you are leveraging the new, more effective, and modern technologies that are currently purchased by the IRS?

Ms. GARZA. So in developing our solutions for—especially in our modernized projects, we look for COTS products that might be available. RRP is a perfect example where we went out and we looked at a suite of products for us to utilize to deliver that capability. So we integrated those products. We look for things best-in-class in order to deliver modernization projects.

Mr. HOLDING. So do you believe that there is anything you have currently purchased that you are underutilizing?

Ms. GARZA. There might be something. I don't have an answer for that. I don't have full knowledge of that answer.

Mr. HOLDING. Is there a way that you could—do you maintain some sort of inventory of products that you purchased, and, you know, measure their effectiveness, measure whether you are using them or not?

Ms. GARZA. We measure whether we are using them or not. We have an inventory of those products to measure utilization. In some cases, there are some products that are underutilized. By that, I mean we don't have a lot of people using them. But some of this is a dialogue between us and our business customers. And there will be, like, groups of people that have unique needs that are using that product. And so it really goes back to, what is the business need? And is that product needed for that need? In some cases, we are trying to consolidate the products. We are trying to simplify our infrastructure, and we are making some progress in that. But it all goes back to, what is the business need? And does that product meet that need?

Mr. HOLDING. So would you be able to provide the Committee with that inventory and with your analysis of what is being utilized or underutilized for our edification?

Ms. GARZA. Sure.

Mr. HOLDING. Good. Thank you.

And, it came to light in a hearing last year, or the year before, the amount of unionization in the IRS. I think the Veterans Administration and the Internal Revenue Service are the two most unionized government agencies. Do you know the percentage of your IT employees that are unionized?

Ms. GARZA. I do not know that answer.

Mr. HOLDING. Mr. Tribiano, you are reaching for the mic there. Do you——

Mr. TRIBIANO. No, sir. I do not know that answer. But those are statistics that we have, and we can deliver that answer to you.

Mr. HOLDING. I think I recall that your contracts provide that you are able to spend something like 500,000 paid hours per year in union activity at the IRS. Does that sound about right?

Mr. TRIBIANO. That could be right.

Mr. HOLDING. I think Mrs. Walorski covered a couple of these in her questioning. But I want to make sure that we have got an answer for these for the Committee regarding the Equifax contract. Was it approved by the Director of Privacy at the IRS?

Mr. TRIBIANO. No, sir. What I was trying to explain before is we had two contracts. The Director of Privacy had the one for credit monitoring which is different than the contract for eAuthentication. That contract for credit monitoring was recompeted and awarded to a new vendor. The eAuthentication was recompeted and awarded to a new vendor, but Equifax protested the procurement. And that happened in July. So that is under GAO right now for a decision about which way to go. So when we came down to September 29th when the Equifax contract expired, we had to either, one, stop the service, which means millions of taxpayers would not be able to get their transcripts, including those that are in need of it, like in the hurricane disaster areas. They use those tools to get their transcripts, or do a bridge contract with Equifax until GAO decides on the protest, and we move forward.

Mr. HOLDING. All right. Mr. Chairman, I see I have run out of time. Thank you.

Chairman BUCHANAN. Thank you. Mr. Bishop, you are recognized.

Mr. BISHOP. Thank you, Mr. Chairman.

I guess that I am not sure who to direct this to, Mr. Tribiano or Ms. Garza. I am listening to the questions. And, you know, Mrs. Walorski, I guess, I support the questions that she asked and the tone in which she asked them, because that is the tone in which my constituents are concerned about this.

Can you give us some assurances, after this Equifax breach, that you have taken precautions, that there are steps that have been taken, to address what could be one of the biggest breaches in identity theft in the history of our country? Clearly, there is a gap there. And we have got to do something to address it. And I assume that the IRS has done something. What can you tell us today that would provide this Committee and our constituents assurances that we are going to do something about this to ensure that nothing really, really bad happens this tax filing season.

Ms. GARZA. So I can take that. So what we did immediately, once we heard about the Equifax, we not only contacted Equifax, but we sent a team over. The team went over, and we did analysis of their data breach. We identified all of the elements that had been compromised. And then, working with—take the investigations. We went through all of that information. And then we went through, on an application-by-application basis, to determine if that compromise would put our systems at risk. Our evaluation showed that the approach that we have taken at the IRS is to have a mul-

tilayered defense mechanism in our applications. And so, based on that, we determined that we had other mitigating controls in place that would protect the taxpayer information. Furthermore, there was about 209,000 SSNs that we thought were at higher risk. And for those 209,000 SSNs, we are in the process of receiving the SSNs and we are going to protect those accounts specifically.

Mr. BISHOP. Have those SSNs and the owners of those SSNs been informed of this situation?

Ms. GARZA. That would be an Equifax question to be asked. We are going to tag the accounts to make sure that no one can come in and——

Mr. BISHOP. But if my account is tagged, I would like to know why it is tagged. And I would think as a taxpayer I would have the right to know that.

Ms. GARZA. So I think that is a business decision, and we will support whatever the business decision is.

Mr. BISHOP. Okay. A million and one questions to ask here. Great concern. If a person—let me ask, Mr. Powner, did you have something to add to that?

Mr. POWNER. Yeah. I would like to go back to the question of approving IT contracts. There was a law passed December 2014 called the Federal Information Technology Acquisition Reform Act——

Mr. BISHOP. Right.

Mr. POWNER [continuing]. FITARA. I do a lot of work on FITARA at all agencies and departments. And one of the provisions in that law is to strengthen CIO authorities. The CIO should approve the IT budget. They should approve major IT contracts. That is a provision in the law. And I can tell you right now that was put in there because of this stuff that is happening. The procurement shop, and the IT shop, and sometimes the CFO organizations, there are walls between these organizations. And if we would simply approve major IT contracts by CIOs, it would help solve this problem.

Mr. BISHOP. So that is another question that I have.

Mr. Chairman, there has got to be a solution out there. In this great country of ours, with all the great innovation, the private sector has got to have a solution here. I know that the commercial side and the criminal side of the IRS deal with things differently. My understanding is the criminal side works with a 1994 product to address these issues, which is completely unacceptable to me. I may be wrong on that, on the timing, on the name of the product, but it is at EFDS.

Ms. GARZA. So that is the system that RRP is replacing. And, basically, at this point, we have retired the bulk of the EFDS, the old system, and are using now the RRP system to do the pre refront in identity theft.

Mr. BISHOP. How about the LCA system, the lead case analysis?

Ms. GARZA. So that is part of the new RRP system, the link analysis, and it is available to be utilized on that new system. There are still components of the old legacy system, primarily around the case management components, that still need to be modernized. We made a decision in trying to simplify our footprint to develop an enterprise case management system. So rather than

having RRP build its own case management system and other parts of the organization building separate, there is 63 different case management systems that we are going to consolidate into one platform of case management. And so we are waiting for that platform to be developed so that then those components of EFDS can be replaced.

Mr. BISHOP. Mr. Chairman, I see I am out of time. But I would hope that at some point in time, we can get this group together again and talk about what we have done and not what we are going to do. Because this is a 1994 technology, and there is too much technology in this country to not utilize.

Chairman BUCHANAN. Thank you.

Mr. Schweikert.

Mr. SCHWEIKERT. Thank you, Mr. Chairman.

Mr. Powner, and I will tell you, we were going through some of this late last night and early this morning, and there are lots and lots of questions. So let's sort of go a different direction. When you have actually looked over the agency, first off, do you have a sense of how much of legacy systems are still up and running? And when I say legacy, I mean things that are maybe 15, 20, 25 years old, are still running in the background.

Mr. POWNER. Yeah. There is a good portion as legacy spans. There is real old stuff that is over 50 years old, going back to the origination on the Individual Master File that processes our tax returns.

Mr. SCHWEIKERT. And are they just using bolt on, and bolt on, and bolt on——

Mr. POWNER. And I think, as Mr. Tribiano mentioned, I mean, a lot of those versions behind, and we got hardware that there is no longer warranties on. That is the big issue. When you really look at IRS, I think the big problem at IRS is the Individual Master File. Because that is the system that processes our tax returns. And they do a great job getting this old system to work. But you know what is going to happen eventually one filing season? It is going to stop. And what is the plan to replace it? There isn't a good one.

Mr. SCHWEIKERT. Okay. My thoughts, let's do them out of order. In your understanding, why is that master file not running on a cloud-based system?

Mr. POWNER. Well, it is not running on a cloud-base or anything close to modern because there has been other priorities over the years. And it is not to say they don't work on it some, because it is the number one investment. But we are not getting enough return on it.

Mr. SCHWEIKERT. Isn't there translational software that would basically do the migration?

Mr. POWNER. Yes, sir. You can translate those languages. I mean, the issue with IRS now, they are multiple versions behind, so you are going to have multiple layers of translation. It is not an easy thing to do. But we need to focus on it as a priority. And that is why I say——

Mr. SCHWEIKERT. No, no, no. It is a lot easier than running around sticking thumbs in dikes. And I know I am interrupting, but it is partially the time.

When you also looked at the agency and its multiple subdivisions, did they have a commonality of platforms? They were all running on a certain type of software? Or did lots and lots, lots of little subdivisions within the agency, were they purchasing different types of software?

Mr. POWNER. It is all over the board, depending on the mission criticality of the app—and some things are newer there. I think the RRP——

Mr. SCHWEIKERT. I am less concerned about the age of the software. It is the commonality of the platform.

Mr. POWNER. It would not be completely common across. No. There are probably opportunities to improve that.

Mr. SCHWEIKERT. Okay. And I am going to screw up the quote. But I remember a year or two ago reading one of the biographies of Steve Jobs, and within there was a real interesting discussion when they had had a failure, a huge failure, trying to move their accounting systems, and coming back in and saying, we are going to try something new. We are going to change our work methodology to match the software instead of trying to force the software to match our work process.

And everything I am reading, you have lots of subdivisions within the agency that are trying to make the software match how they already do their workflow. Workflow is a lot easier to change.

There is one other on my list that I need—did you see any pattern of IT talent in the agency leaving the agency and turning around and being rehired as a contractor in the agency?

Mr. POWNER. I don't have information on that. I will tell you, though, this. When you—the difference between paying an internal employee and a contractor to maintain that old assembly code, it is a lot more expensive if you hire a contractor.

Mr. SCHWEIKERT. Okay. This may be for a future conversation, but we have someone who claims to be providing information that there is some sort of pattern.

Mr. SCHWEIKERT. In my last—and, I am sorry. I thought I would go faster than this. I apparently haven't had enough coffee. Why such great difficulty moving to the cloud when that was—almost 10 years ago was going to be the major mission of the agency's CIO?

Ms. GARZA. So although we do not have a cloud strategy documented, we have, for the last several years, been taking on elements of the cloud strategy. For example, our entire portal service, which was replaced in 2012 and has been steadily—as an infrastructure, as a service, private cloud strategy. We also did—our enterprise storage capability is a cloud solution that allows us to move data.

Mr. SCHWEIKERT. Are you housing the enterprise servers?

Ms. GARZA. I am sorry, what?

Mr. SCHWEIKERT. Are you housing the enterprise servers?

Ms. GARZA. Enterprise service.

Mr. SCHWEIKERT. The servers. The servers. Do you control——

Ms. GARZA. For storage?

Mr. SCHWEIKERT. Do you control the hardware or is the hardware distributed?

Ms. GARZA. For the enterprise storage capability, the servers are in the cloud, and we move the data back and forth.

Mr. SCHWEIKERT. And those servers in the cloud are owned by someone on the outside or the agency?

Ms. GARZA. I don't have that answer.

Mr. SCHWEIKERT. Okay. Mr. Chairman, I think this is one of those occasions where there is going to be a long letter to follow.

Chairman BUCHANAN. Thank you.

Mr. Rice, you are recognized.

Mr. RICE. Thank you, Mr. Chairman.

Who on the panel thinks that the modernization efforts of the IRS are acceptable? Who on the panel is in charge, or is anybody—any of you all the point person, the person who directs modernization? Is it you?

Ms. GARZA. I am responsible for that.

Mr. RICE. Okay. And if nobody up here thinks it is acceptable and you are the one in charge, how long have you been doing this?

Ms. GARZA. So I became the CIO about 14 months ago.

Mr. RICE. Uh-huh.

Ms. GARZA. But I have been involved in the modernization effort for some time. I will tell you that we have had a lot of success, and I ask that you look at it from the bigger picture. Our current electronic filing system was a huge success. The Integrative Financial System was part of the modernization program. At the same time, we have been delivering very significant——

Mr. RICE. What——

Ms. GARZA [continuing]. Legislative mandates——

Mr. RICE. What is the Individual Master File?

Ms. GARZA. So the Individual Master File is the database, the system, that holds every individual taxpayer's account. It has a record of the account changes, the things that have occurred to that account.

Mr. RICE. The system that holds that, it was designed 50 years ago?

Ms. GARZA. It was first implemented in 1962.

Mr. RICE. Okay. So the hardware that runs—that system runs on, it can't be modern. That system——

Ms. GARZA. It is running on modern. The application, which is the ALC code, was developed in 1962. However, the hardware that it writes on is current technology.

Mr. RICE. All right. So if the code was written that long ago, then you must have folks on your payroll that are continually maintaining that. Is that correct?

Ms. GARZA. Yes. And the number of people that know and understand ALC is dwindling. So we do have a sense of urgency that we need to get the ALC, especially the core components of the master file modernized.

Mr. RICE. It is only 55 years old.

Ms. GARZA. That is correct.

Mr. RICE. That is a heck of a sense of urgency.

Mr. Powner, you said that part of the problem is that Congress needs to set goals and hold people accountable. Is that right?

Mr. POWNER. I think that would be very helpful. And I have just seen it work over the years.

Mr. RICE. We can't go in there ourselves and write code and convert files. That is not our job, and we are not capable. But can you help us come up with a——

Mr. POWNER. Where I think you could help is this: Ask Gina, Ms. Garza, how much money it will take, and how many years to replace the Individual Master File. We need a clear answer on that. Is it 5 years at $100 million each year, whatever it is, we need that——

Mr. RICE. What is the answer, Ms. Garza? What is the answer?

Ms. GARZA. So there are two major components of the IMF that we have developed——

Mr. RICE. How much money and how long will it take?

Ms. GARZA. So we believe that we can deliver a system replacing those core components in 5 years if we can get 50 to 60 FTEs and the funding associated with it, with some direct hire authority so that we can hire the right skills, and about $85 million each year. We——

Mr. RICE. $85 million a year?

Ms. GARZA. Yes, sir.

Mr. RICE. Well, you got $2.9 billion now, right?

Ms. GARZA. So a lot of that fund, those funds, are going to do the unfunded legislative mandates, to do tax filing season, to run all of our current operations.

Mr. RICE. But this $2.9 billion is for IT, right?

Ms. GARZA. Yes.

Mr. RICE. Isn't it more expensive, at some point, to maintain 55-year-old software than it is to just buy new and convert it over? I mean, wouldn't it be cheaper?

Ms. GARZA. Actually, the IMF is very efficient.

Mr. RICE. Mr. Powner, wouldn't it be cheaper?

Mr. POWNER. Yes, I think over time it would be cheaper, and I think it is efficient. The issue is, I think, the human capital scenario where we are running out of programmers that know this stuff. You know, we are training young programmers who know modern languages this old assembly code to keep it running. I just think it is highly risky, and I think what we heard here is they need $85 million over a 5-year period——

Mr. RICE. So if your programmer has a heart attack, nobody is going to be able to get their tax refund. Is that what you are saying?

Mr. POWNER. You know what, we have had examples like this. Last year I highlighted all the old systems in the government. This is right up there along with the 8-inch floppy discs that DoD is using on our nuclear command system. So we got problems, but this is one of the top five.

Mr. RICE. Mr. Chairman, I sure would like to keep going, but I see my time is up.

Chairman BUCHANAN. Thank you. You know, our goal in this Committee, we are trying to do the overall Committee tax reform sometime this year ideally. We are hopeful. And then IRS reform we would like to do, it has been 20 years. But I guess my question, and a lot of us—at least I was motivated, to think that we have equipment out there—I got out of college in the mid 1970's, we would sell many computers. I mean, just to think that we have got

equipment from 1970s and 1980s out there is mind-boggling. But I guess the question I would have initially as a business guy over the years, is do you have an IT plan in terms of going forward? Because I think one of the things is when we do IRS reform, we have to take a look at the whole thing on IT, and identity theft, and there are a lot of different things. But do you have a plan? Has that plan ever been presented to a committee? Because if someone came in to me—and we had this situation—what I would do is I would have the best and brightest, present a plan, and then get some sense of the return that we would get as shareholders or whatever. So let me just ask all of you. Do you feel like you have a plan? Is there a buy-in to the plan? We will start with the gentleman there.

Mr. TRIBIANO. Yes, sir. We do have a digital roadmap on how we would get from where we are now to where we want to be. I don't know if we shared it with the committee. I have to go back and take a look.

Chairman BUCHANAN. How long is that plan? Is that a five-year, 10-year plan?

Mr. TRIBIANO. It depends on what—there is a lot of components to it, and there are certain milestones that you have to reach. One of the major things we have to get to is stabilizing the infrastructure as we see it now so we can continue at least delivering filing season as we modernize from that point. So my concerns have been focused on the delivery of the filing season part of it. So we can have that——

Chairman BUCHANAN. The thing is, you have got to have a vision. You have got to have a sense of the future, because, you know, otherwise, I think that is probably why we are in the situation we are in. We are just trying to react instead of being proactive.

Mr. TRIBIANO. Absolutely. And we would love to sit down and go through that plan with the committee, with your staff, whatever you deem necessary, roundtable discussion, and have that back and forth and explain where we are going and how we think we can get there and get the input. I mean, as our partners at GAO are stating, we want congressional engagement on this. We want you to understand the concerns and issues and how we need to get to where we need to go.

Chairman BUCHANAN. What is your thought on that? Do you feel like we have got a workable plan going forward? I mean, you know, it is not just about throwing a lot of money at it. It just seems that we can be a lot more efficient going forward in terms of personnel costs and everything else. And I will get into that in a minute. But do you feel like there is a plan? I mean, you are the one that is kind of heading this up.

Ms. GARZA. We have what we have called a technology roadmap. And that technology roadmap was developed in concert with a future-state vision for the IRS. And so as part of that document, you will see the evolution and the migration of current-state IT to future-state IT.

A- subset of that is the digital roadmap, which is what we are really focused and have prioritized right now. We want to be able to get out and provide services to taxpayers. But those documents

are in place. We do utilize them. And as we talked earlier, the enterprise case management system is one of those things that came out of the technology roadmap where we are trying to consolidate 63 legacy systems that have been around forever into a single COTS platform in the cloud so that we can provide case management capabilities across the board.

One of the things that we did with RRP, we did not let them create their own case management system. That was a conscious decision on our part because we needed to stop creating stovepipe solutions.

Mr. RICE. Mr. Chairman, can I make a suggestion?

Chairman BUCHANAN. Yeah.

Mr. RICE. Why don't we ask Mrs. Garza, the CIO, to give us a plan from here to modern——

Chairman BUCHANAN. Uh-huh.

Mr. RICE [continuing]. And have regular meetings, you know, quarterly, or whatever, and ask what the progress is on those.

Chairman BUCHANAN. That is a good point. Do you feel like—is this a plan you have shared with anybody in terms of Members of Congress or anywhere else?

Ms. GARZA. I don't know if we have shared the technology roadmap and the digital roadmap, is certainly something that we can do. And we would be happy—I remember—and Dave Powner and I go back to when we used to come up and brief, on a quarterly basis, congressional staff on the progress against——

Chairman BUCHANAN. This is going to be an area where I think all of us are going to be interested going forward because it is not acceptable.

But, Mr. Verneuille, I want to run through all of these. What is your sense? Is there a plan? Or is there a vision? What are your thoughts on it?

Mr. VERNEUILLE. Like Ms. Garza mentioned, there is a technology roadmap, and we have seen it. The challenge we see is that the priorities change every year. So there is a strategy and a roadmap, but the details of what they deliver every year, the requirements that are going to be developed and delivered every year change annually based on priorities, resources, and other requirements coming in for that year. So it is a plan, but what they deliver is going to change every year.

Chairman BUCHANAN. Mr. Powner, would you want to comment on it?

Mr. POWNER. So to be balanced, I think there is a roadmap they have used to deliver on some aspects of the technology at IRS, but—and it is a big "but"—there is not a workable, achievable plan to replace the IMF.

Chairman BUCHANAN. The second follow-up question for all of you is this: I have a gentleman who has run a good-sized business, a lot of restaurants all over. He said to me, he said, Vern, you know, if I hire a manager, $50,000, in one of his stores—and then the cost today of supporting an individual is another 42 percent, so it is $70,000. He said, I have gone to much more automation, and as people retired out, I have just been able—not even had to cut head count, but, he said, we have been able to get a good return on our technology.

And I guess the question is, is that, you know, as a part of a plan, I would like someone to tell me, here is what we need to invest, but here is the efficiency coming out of the system. Because if we are dealing with software back in the 1970s and 1980s, and hardware, there has got to be a lot of deficiencies as a result of that. And I think that is the concern a lot of us have, just throwing more money at it. The question is, is to have a plan, what is the return on that plan in terms of the technology dollars being spent? We should have a way of being able to get to those numbers, because there has got to be an enormous savings.

I went into a facility the other day with robots and everything. They have cut a lot of personnel out of this plant, a big plant, Amazon. It is one of our new facilities in our area. I was just shocked about it. They probably have three times as many folks working there because of today's capability. And that is something we need to think about. That is why I am big on planning, personally, as a business guy. Because if you don't have a vision, you perish. But we need to have a vision, a plan, in terms of this space, in terms of the IRS in general, before I would be willing to commit any dollars, because I would like to see what the return on that investment would be.

So I will give you a chance, all of you, just to make a comment.

Mr. TRIBIANO. Yes, sir.

Chairman BUCHANAN. That is just my feeling. I am more of a big picture guy.

Mr. TRIBIANO. Chairman, you are absolutely right. I mean, we have a plan. We have to do a better job of articulating what the results of that and the outcomes of those are. Now, there are some measurements with that that are not as easy as dollars versus costs.

Chairman BUCHANAN. Uh-huh.

Mr. TRIBIANO. But some of them is outcomes, meaning better taxpayer service, less lines at our walk-in centers, less calls to our call centers. But there are measurements that we can articulate.

Chairman BUCHANAN. But my point is, is that it should also have some savings in terms of personnel costs, I would think. Because there is much more capability in terms of computing power and everything else.

Would you like to add something, Ms. Garza?

Ms. GARZA. I agree with you. And, actually, as we spoke earlier, we are looking to robotics ourselves. We believe that there are a lot of business processes that can be automated, and, therefore, decreasing the number of FTEs that the IRS might need. There is also areas in testing and other areas where automation would be very, very helpful. We keep looking for places where we can be more efficient. Moving to cloud is one of the strategies that we are pursuing. We believe that we can either have a managed service or a cloud service, that then we won't need to have the people in order to maintain those systems, and then we can rely on them to make sure that all of the hardware/software is being maintained. So this is part of the conversation that we are having and the plans that we are doing.

Chairman BUCHANAN. Well, one thing we are going to want to do is get whatever plan that you do have, just talk about that, where we are at and where we are going.

Mr. Verneuille?

Mr. VERNEUILLE. Yes, sir. Part of the return on investment also involves retirement of systems that you are replacing. So the issue with IMF not being completed or converted to CADE 2, they cannot retire IMF until CADE 2 is completed. So that is a loss of efficiency. They are spending millions of dollars a year maintaining IMF. And if they complete CADE 2, that is more savings. As well as on the RRP case management process, they are currently spending millions of dollars maintaining the EFDS case management until they get the enterprise case management solution implemented. So there is more savings by retiring legacy systems.

Chairman BUCHANAN. Mr. Powner.

Mr. POWNER. I would agree that there are huge efficiencies with modernization. I think another key aspect, though, that comes with the efficiencies is the improved security, cybersecurity, with the modern technology.

Chairman BUCHANAN. Huge issue, obviously.

Mr. POWNER. Absolutely. So that is extremely important going forward.

Chairman BUCHANAN. Mr. Bishop, did anybody else have a comment or a question? I think we have a couple of minutes.

Mr. BISHOP. Mr. Chairman, I appreciate this hearing, and I think it is very helpful. This is not a shot at the IRS. But I think it would also be helpful for this Committee to bring in a panel from the private sector to hear their solutions for this issue. Because we have ample ingenuity out there, entrepreneurs out there, who are working in this space every day of the week. And when the IRS needs 35 FTEs, or $85 million a year, I think before we do anything like that, we spend taxpayer dollars in that way, we ought to be talking to the private sector to see what their solutions are. And I know that Palantir, for example, out in California, is one of the companies that has provided the technology on the—I believe it is on the civil side.

Chairman BUCHANAN. Yeah.

Mr. BISHOP. So it would be very helpful to be able to have them come in as well.

Chairman BUCHANAN. Okay. I would like to thank our witnesses for appearing today before us. Please be advised that Members have two weeks to submit written questions, to answer later in writing. Those questions and answers will be a part of the formal record. And with that, the Subcommittee is adjourned.

[Whereupon, at 9:57 a.m., the Subcommittee was adjourned.]

[Member Questions for the Record follow:]

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BRANDON CASEY,
MINORITY CHIEF OF STAFF

November 15, 2017

Mr. Jeffrey Tribiano
Deputy Commissioner for Operations Support
Internal Revenue Service
1111 Constitution Avenue, NW
Washington, DC 20224

Dear Mr. Tribiano:

Thank you for your testimony before the Committee on Ways and Means at the October 4, 2017 Oversight Subcommittee hearing entitled "IRS Reform: Challenges to Modernizing IT Infrastructure." In order to complete our hearing record, we would appreciate your responses to the following questions:

1. In the Internal Revenue Service's (IRS) oral testimony, IRS witnesses referenced the "Digital Roadmap" as a component of the IRS Technology Roadmap.
    a. Please explain the relationship between these two documents.
    b. How often are the IRS Technology Roadmap and Digital Roadmap updated?
    c. Please describe the process for proposing changes needed to one or both of these documents and the process for approving such changes.
    d. Please provide a list of the individuals who must approve changes made to these documents.
    e. How does the IRS measure the usefulness of these documents?
2. In Fiscal Year (FY) 2016, the IRS spent $800 million on modernization efforts. Please explain how this money was spent and what additional functionality or progress was achieved in FY 2016 using these funds.
    a. The IRS information technology (IT) Development, Modernization, and Enhancement budget is expected to decline from 30 percent of total IT spending in FY 2016 to 14 percent in FY 2018, while the total IT budget is expected to remain relatively stable. What led to this change and why has modernization funding declined so significantly?
    b. What efforts has the IRS made to reduce the percentage of funding spent on operations and maintenance, which is set to be over 80 percent of the IT budget in the coming year?

c. Does the IRS expect this trend to continue in future years?

3. The Government Accountability Office (GAO) has reported that the IRS does not have a process for prioritizing its modernization activities, which it spent $800 million on in FY 2016.
   a. Without a process, how does the IRS decide which modernization projects to dedicate resources to?
   b. Who ultimately makes these decisions?
   c. What is the role of the IRS Chief Information Officer (CIO) in this process?
   d. The IRS told GAO there is no documented formal process because there are less competing interests so it is not necessary. However, the IRS has also argued that it does not have enough funding for its modernization efforts. Given the limited resources, why has the IRS not had an institutionalized process to ensure funds go to the agency's priorities?
   e. If adequately funded, does the IRS have an estimate for how long it would take and at what cost to modernize all IRS IT systems?
   f. Since GAO's report was released last year, what steps has the IRS taken to institute a process for its modernization efforts?
   g. The Treasury Inspector General for Tax Administration (TIGTA) testified the IRS needs to improve its project planning prior to starting development activities. What actions has the IRS taken to address these concerns?
4. *Customer Account Data Engine (CADE 2)* –
   a. What year did the IRS determine the Individual Master File (IMF) would need to be replaced?
   b. What year did the IRS begin developing a strategy for CADE 2?
   c. What was the initial cost estimate for the project?
   d. What is the total cost, to date, of CADE 2?
   e. What is the annual cost of running and maintaining the IMF?
   f. When was the initially planned completion date for CADE 2?
   g. What is the planned completion date of CADE 2?
   h. When will the IMF be taken offline?
   i. What functionality has been achieved through CADE 2 thus far?
   j. What functionality has yet to be completed?
   k. Is the IRS still committed to replacing IMF via CADE 2, and if so, why is the planned FY 2018 spending for CADE 2 significantly lower than prior years?
   l. CADE 2 is considered to be one of the IRS's most significant modernization efforts and yet it is currently under a strategic pause while its release plan is being revised.
      i. What is the current status of CADE 2?
      ii. What date did the strategic pause being?
      iii. When is the strategic pause scheduled to end?

iv. Why is the release plan being revised?
v. When will the revised release plan be completed?
vi. Please describe any anticipated changes to the CADE 2 release plan.

m. The IRS CIO testified that CADE 2 could be completed in five years if the IRS receives an additional $85 million per year and an additional 50 to 60 full-time equivalents. Please describe how the IRS determined this estimate.
n. Is there a strategy to address IT workforce gaps, especially as it relates to the IMF? If so, please describe.

5. *Enterprise Case Management (ECM) Program* - The ECM Program is reported to have paused all development activities. While the Committee understands the need to consolidate the number of ECM systems that the IRS maintains, please provide acquisition timeline(s) for the one or more ECM systems that the IRS anticipates acquiring and a list of the business units or divisions that each ECM system will be used for.
   a. The ECM stopped development due to "technical limitations" of the commercial off-the-shelf product according to TIGTA's testimony. Please describe these technical limitations in detail.
   b. When was this ECM solution procured?
   c. When did the IRS become aware of these technical limitations and how did the IRS become aware of them?
   d. When did the IRS stop development of this ECM?
   e. What is the current date for completion?
   f. Why were these technical limitations not identified prior to the procurement of the ECM?
   g. What steps has the IRS taken and what safeguards has it put in place to ensure this situation does not occur again?
6. In December of 2010, the U.S. CIO directed agencies to shift to a cloud first policy.
   a. What steps has the IRS taken to move its systems to the cloud?
   b. And when did the IRS deploy its first cloud?
   c. What are the security implications of failing to implement an IRS cloud strategy?
   d. Why was there a six-year delay before the IRS began to consider a cloud-first strategy, as mandated by the U.S. CIO?
7. What is the IRS's process for determining and prioritizing which online account features or functionalities will be added next to existing online services?
8. While the IRS has reported a significant decline in self-reported cases of identity theft, how does the IRS address individuals who may be unaware of having had their identities stolen?
   a. Does the IRS have an estimate of how many taxpayers are victims of identity theft and are unaware of it?
   b. If so, please describe the methodology for this estimate.

9. What substantial IT cost savings have been achieved by the IRS in the last three years?
10. What is the IRS's plan and timeline for replacing the 64 percent of the IRS's hardware that TIGTA determined is past the end of its useful life?

Questions from Rep. Jackie Walorski (IN-02)

The Return Review Program, or RRP, was designed to replace a legacy fraud detection system from the 1990s, but it came in hundreds of millions of dollars over original estimates and years behind schedule. My concern is that after spending over $300 million and seven years on the RRP, there doesn't seem to have been an accompanying investment in analysis. As I understand it, IRS analysts are still using a program called Discoverer to analyze potential fraud cases flagged by RRP.

1. Is that correct?
2. If yes, how old is Discoverer?
3. Is it true that analysts need to run complex queries on Discoverer overnight in order to prevent the whole system from crashing?
4. How does this lag affect the ability to update RRP filters?
5. Is there a plan to retire Discoverer? If so, what is the timeline?
6. With the recent Equifax hack, what is the IRS doing to combat what will likely be more sophisticated fraud attempts?
7. How many IRS employees have the ability to sign a $7 million contract? Please provide a breakdown of which employees can sign which types of contracts.

Questions from Rep. Mike Bishop (MI-08)

1. I understand that the IRS has identified the cost of consolidating case management systems through an internal process, I believe at the hearing you said $84 million annually for the next five years, to do it internally. Have you identified the cost of using a commercial product, or contracting with a data services company to utilize its expertise, for the purpose of consolidating the various case management systems?
2. When did the IRS begin using the Lead Case Analysis (LCA) system? How many times has it been utilized by a case worker in the criminal division in each filing season since its acquisition? And how many times has Electronic Fraud Detection System (EFDS) been used by that same population of case workers?
3. In the time since the Criminal Investigations Division has begun using LCA, how many times has the civil division used EFDS to analyze a flagged return? And have they been able to use LCA at all?
4. If civil division case workers have not had access to LCA, why can case workers in the criminal division use it?

Sincerely,

VERN BUCHANAN
Chairman
Subcommittee on Oversight

Internal Revenue Service
Response to Questions for the Record
Ways and Means Subcommittee on Oversight
Hearing on IRS Reform: Challenges to Modernizating IT Infrastructure
October 4, 2017

Buchanan:

1. In the Internal Revenue Service's (IRS) oral testimony, IRS witnesses referenced the "Digital Roadmap" as a component of the IRS Technology Roadmap.

    a. Please explain the relationship between these two documents.

    The Technology Roadmap and Digital Roadmap were initially created separately and evolved with distinct communication needs. The Technology Roadmap, developed and maintained by the IRS Enterprise Architecture (EA) office, is a broad, long-range view of the IRS IT direction originally published in January 2015. It is intended to "translate" the future state business vision into needed IT capabilities and services, and guide investment planning and architecture development. The IRS Technology Roadmap describes a vision for harnessing modern technology paradigms (e.g., Service Oriented Architecture, Application Program Interfaces, Analytics, DevOps, Cloud) to enable key business priorities, such as the move toward online taxpayer accounts and on-arrival tax processing. The Technology Roadmap also identifies the envisioned architecture and plans for ensuring the security of IRS data and information assets. The Technology Roadmap is used to facilitate a conversation between IRS business and IT leaders around the future direction, priorities, and alignment of investments and resources to achieve a common vision.

    The Digital Roadmap was initially created in early 2015 as a crosswalk document between the Technology Roadmap and six (6) key initiatives that were identified by the Digital Subcommittee. The Digital Subcommittee is comprised of the two IRS Deputy Commissioners, Wage and Investment Division Commissioner, Small Business/Self-Employed Division Commissioner, Chief Information Officer and Director, Online Services, and plays a critical role in governance and oversight of the digital initiatives. The Digital Roadmap was effectively a realization of the IRS Digital Strategy. Today, the Digital Roadmap is shown as a subset of Digital Strategies which are aligned within the overall Technology Roadmap. The original crosswalk document is now maintained as a summary of the Digital Strategies, with implication and cross linking maintained within the Technology Roadmap. The Digital Strategies represent IRS's prioritized set of digital and modernization initiatives or programs that enable the digital taxpayer experience (e.g., Online Account, Authentication, Authorization, IRS.gov, Taxpayer Digital Communication (TDC) solutions, third party services). The Digital Strategies provide greater detail into the specific projects and plans in the priority areas. As the vision and plans evolve under the direction of the Digital Subcommittee, the Technology Roadmap is updated as appropriate.

b. How often are the IRS Technology Roadmap and Digital Roadmap updated?

The Technology Roadmap is planned for an updated release (i.e., new content, significant updates) 3-4 times per year, with any additional "maintenance" releases as needed (i.e., in the case of minor but important changes to the IRS business or technology direction, or identification of errors needing correction). Changes to the Technology Roadmap are periodically (usually annually) reviewed by executives of IT/Enterprise Services (ES) and major changes are reviewed by CIO. The Digital Subcommittee reviews and monitors progress to the Digital Strategies and resultant changes are maintained and updated with concurrence from the Digital Subcommittee.

c. Please describe the process for proposing changes needed to one or both of these documents and the process for approving such changes.

The Enterprise Architecture (EA) office within IRS IT is responsible for developing and maintaining the IRS Technology Roadmap. The EA team continuously assesses the IRS business and technology landscape and plans (e.g., strategic planning documentation, program/project plans, and investment information) as inputs and proactively identifies and validates needed changes. In addition, the roadmap is available online for all IRS employees with access to the intranet, and anyone may contact the EA team with proposed changes, which the EA team evaluates, prioritizes and incorporates as appropriate. Finally, the Technology Roadmap is regularly socialized through briefings, and these sessions provide a forum for stakeholders to provide feedback. For the Digital Strategic Initiatives, the Digital Subcommittee periodically reviews the business and IT landscape (e.g., strategy and operational plans, the Technology Roadmap, architecture plans, investment proposals) and identifies any required changes to the Digital Strategic Initiatives (e.g., capabilities, funding posture, timelines), which is maintained by the office of Online Services (OLS) and IT Enterprise Services (IT/ES). The Digital Strategic Initiatives are frequently socialized with key IRS stakeholders, and feedback obtained is reviewed and approved by the subcommittee. Changes are then evaluated by the IRS EA team and reflected within the IRS Technology Roadmap.

d. Please provide a list of the individuals who must approve changes made to these documents.

The development of the Technology Roadmap is led by the EA office within the IT division, and the EA Director approves each new release/update. In addition, for major changes and releases changes, it is reviewed and approved by the Associate CIO for Enterprise Services and the CIO. The Digital Strategic Initiatives are approved by the Digital Subcommittee of the Services and Enforcement Executive Steering Committee (ESC).

e. How does the IRS measure the usefulness of these documents?

The IRS continuously assesses the usefulness of the Technology Roadmap qualitatively through conversation and collaboration with stakeholders across the enterprise. The IRS EA office team defines usefulness for the Technology Roadmap on several dimensions: (1) quality and accuracy of information in reflecting a long-range vision and plans for IRS IT, in alignment with the enterprise business direction; (2) ability for readers to understand and apply the information; (3) support for evaluation of IT investments and priority setting; and (4) informing program/project solution architectures (i.e., providing a broader framework of technology direction into which those solutions must fit). Through a continuous socialization process and feedback loop, IRS EA has consistently evolved the Technology Roadmap with new views and content, refinements, and improvements to usability. The usefulness of the Technology Roadmap and the Digital Strategies is measured by actual program deliverables, e.g. WebApps, IRS.gov, third party services, and other programs that are delivering capabilities into production. In addition, the Technology Roadmap helps stakeholders understand how IT investment priorities impact delivery of the future state capabilities.

2. In Fiscal Year (FY) 2016, the IRS spent $800 million on modernization efforts. Please explain how this money was spent and what additional functionality or progress was achieved in FY 2016 using these funds.

In FY 2016, the IRS spent $789 million on development, modernization and enhancements (DME) across the IT enterprise. Significant development addressed major areas such as support to taxpayers, compliance and enforcement, identity theft/ refund fraud/ cyber and other security, legislative mandates and operational upgrades. The following are key new functionalities and/or progress for each area.

Support to Taxpayers:

- Launched website to support the voluntary registration of Certified Professional Employer Organizations (CPEO) and 501(c)(4) organizations, mandated by Congress in the Tax Increase Prevention Act of 2014.
- Deployed a new telephone delivery system in 4 of 33 planned taxpayer contact center call sites that is enabling better service to taxpayers. This replacement of legacy automated call distributors used to route taxpayers on the call center platform improves security and stability, increasing customer satisfaction with new call center agent functionality.
- Deployed penalty and interest adjusted refundable credit capabilities that correct 8 million tax modules with inaccurate failure to pay penalty computations for adjusted refundable credits.
- Improved accuracy of financial reports by including pending payment transactions in the unpaid assessment balance.
- Implemented financial/utility verification and two-factor authentication for the web applications Get Transcript and IPPIN (Identity Protection PIN).

Compliance and Enforcement:

- Deployed the International Compliance Management Model (ICMM) Cryptography update, increasing the security of all incoming and outgoing Foreign Account Tax Compliance Act data.
- Deployed multiple Financial Institution Registration maintenance releases improving the user experience for all Foreign Financial Institution users as well as Host Country Tax Authorities.
- Developed the Withholding and Refund project, which establishes streamlined methods to conduct compliance activities; compares forms filed by the withholding agent with forms filed by the recipient and deposit information from the withholding agent; and uses that information to allow or deny the credits claimed by taxpayers.

Identity Theft/ Refund Fraud/Cyber and Other Security:

- Sponsored the first Bureau-led Cybersecurity Community of Practice forum to enhance information sharing of Cybersecurity best practices. The interest garnered from this meeting has led to two additional forums sponsored subsequently by the Mint and the Alcohol and Tobacco Tax and Trade Bureau (TTB).
- Implemented network protection capability that blocked transmission of over 16,000 un-encrypted emails from leaving the IRS network, preventing the possible disclosure of sensitive data such as social security numbers and passwords.
- Implemented two cybersecurity threat countermeasures to prevent malware being installed on .gov networks and facilitate malicious email filtering. IT detected and mitigated phishing and malware sites, and conducted a phishing pilot to train employees to properly identify and react to this threat.
- Implemented software capability and process to track contractor security training completion/timeliness relative to eligibility for IRS system access. With this capability, IRS can quickly disable the account of any contractor who fails to complete minimum security awareness training.
- Deployed Unified Network Access Phase One to five Initial Operating Capability (IOC) sites, allowing IRS to view network connections and ensuring only authorized users and devices can connect to the IRS network.
- Expanded the Integrated Enterprise Portal (IEP) environment security protections and tools that significantly improved the detection and remediation of attempted external attacks aimed at IRS.gov via automated scripts, bots, and suspicious and malicious Internet Protocol addresses. The layered security tools protect taxpayer facing applications at the earliest entry point of the IRS infrastructure, which is the edge security and portal environment.

- Implemented advanced analytics and fraud detection capabilities within the IRS IEP and eAuthentication environments to better protect access to the Get Transcript application.
- Enhanced monitoring and analytic capabilities through investments in infrastructure, tools, and development expertise to accelerate continuous data monitoring.

Legislative Mandates:

- Developed the Affordable Care Act Information Returns (AIR) system, which processed over 200 million Forms 1095-B and over 100 million Forms 1095-C between January 20, 2016, and September 3, 2016. These forms provide information to the IRS from health care coverage providers on individuals with minimum essential coverage (as defined by law), and allow the IRS to determine whether employers are offering health insurance coverage to their full-time employees, and , if so, information about the coverage offered.
- Implemented the modification to the Health Coverage Tax Credit (HCTC). Previously, those eligible for the HCTC could claim the credit based on premiums they paid for certain health insurance coverage through 2013. This change allowed claims for coverage through 2019.
- Implemented the Achieving a Better Life Experience (ABLE) Act, which was included in the Tax Increase Prevention Act of 2014 (Public Law 113-295) and included two components impacting the IRS. The first component enacted new Section 529A of the Internal Revenue Code of 1986 to create tax-free savings accounts for individuals with disabilities to cover qualified disability expenses such as education, housing and transportation. The second component established a Certified Professional Employer Organization (CPEO) certification program that provides authority for CPEOs to collect and remit federal employment taxes under a CPEO Employer Identification Number for wages paid to individuals covered by a service contract.
- Implemented capabilities related to the Foreign Account Tax Compliance Act (FATCA) to improve tax compliance for U.S. taxpayers holding financial accounts at Foreign Financial Institutions (FFIs) and to promote and facilitate international tax information sharing. FATCA requires certain FFIs with U.S. accounts to register with the IRS, report U.S. accounts annually to the IRS, and withhold 30 percent of selected U.S. source payments made to recalcitrant account holders and nonparticipating FFIs. FFIs that do not comply with their obligations are subject to 30 percent withholding on certain U.S. source payments. The FATCA program updated existing and prior year FATCA forms (paper and electronic). These form changes include Modernized E-File (MeF) updates to Form 1042-S data including updates to Business Objects reporting, Withholding and Refund Credit Freeze changes for Forms 1040NR and 1120-F filings, and processing and storage of existing and prior year FATCA forms in the International Compliance Management Model (ICMM) system. Additional capabilities included the reciprocal exchange with certain jurisdictions of information on payments to accounts at U.S. financial institutions held by residents of such jurisdictions.

Operational Upgrades:

- Reduced operations and support costs for over 10,000 servers with successful implementation of new Server Administration strategy, with increased number of servers managed by a single Systems Administrator to 258—a 342% increase over 2015.

- Upgraded the IBM Enterprise Server and achieved new efficiencies in data encryption resulting in enhanced security of taxpayer data and improved processing performance.

- Began the multi-year effort related to eRecords Management (Microsoft Strategic Initiatives-Enterprise Exchange/SharePoint upgrade), to provide an enterprise solution that will upgrade the information technology infrastructure with foundational electronic records management capabilities which will store, preserve, and retire email records, and which will allow the IRS to meet federal records management mandates.

a. The IRS information technology (IT) Development, Modernization, and Enhancement budget is expected to decline from 30 percent of total IT spending in FY 2016 to 14 percent in FY 2018, while the total IT budget is expected to remain relatively stable. What led to this change and why has modernization funding declined so significantly?

There are several drivers that are causing the decrease in funding spent on DME. First, over the past several years the IRS had to implement costly legislative mandates such as the ACA, FATCA and the ABLE Act. This required development of new systems capabilities, which once deployed move into production and require ongoing operations and maintenance (O&M) costs. Second, as we developed and deployed capabilities that support taxpayer services and enforcement programs such as Web Applications and Return Review Program, these new capabilities also require O&M funds to sustain. Third, the impact of diverting funds to implement these and other legislative mandates, and the associated O&M cost to support them and the modernization projects, increase our aged infrastructure to unacceptable levels. The IRS has focused its resources on addressing that aged infrastructure.

b. What efforts has the IRS made to reduce the percentage of funding spent on operations and maintenance, which is set to be over 80 percent of the IT budget in the coming year?

The IRS is constantly exploring options for reducing the operations and maintenance (O&M) costs as new technological solutions emerge that could replace more costly legacy methods. In addition, the IRS evaluates work processes for efficiencies, including redundancies of capabilities in systems that could be eliminated. Some IRS successes in reducing O&M costs are as follows:

- Implemented Convergence Unified Communications, which combines multiple services – such as voice, video and data – through a single provider to deliver greater functionality and capabilities and annual savings of $25-$30 million.
- Integrated Enterprise Portal (IEP). IRS has been able to maintain 100% availability for its IRS.gov offering while reducing its annual Infrastructure Operations and Maintenance cost on its IEP by approximately $1M in FY 2015, $2M in FY 2016 and $7M in FY 2017 through innovation and contract negotiation. Support for this time period was covered by two different contracts.

- Implemented an Enterprise Storage Service rather than the legacy method of procuring/owning the storage solutions. This saved the IRS $34 million from 2013 through 2016.
- Improved systems administration from 2015 – 2017, increasing the number of servers that are administered by a single administrator from 50:1 to 376:1. The resulting efficiencies allowed system administration resources to be reassigned to provide targeted support to other operations work rather than hiring new staff.

In addition, three significant efforts underway that will reduce O&M costs over time include:

1. Migration to cloud technologies, which can simplify business operations by centralizing services while minimizing operational costs by enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services). Migration to cloud technologies will also facilitate a reduction to our aged asset inventory and out-of-date software.
2. Development and implementation of an Enterprise Case Management (ECM) solution, which would consolidate multiple case management systems. Once the ECM solution is developed and fully implemented, it will provide an enterprise platform with common infrastructure and common IRS business functions and services. We expect cost reduction over time, as well as improved ease of interactions for taxpayers with the IRS with simplified and improved digital communications.
3. The IRS is exploring the implementation of bot technologies, which are designed to automate the kinds of tasks normally performed by a human. Typically, bots perform tasks that are both simple and structurally repetitive, at a much higher rate than would be possible for a human alone. When implemented, this would allow us to use our labor more efficiently.

c. Does the IRS expect this trend to continue in future years?

This trend is expected to continue in the near term while IRS seeks to reduce the backlog of obsolete hardware, reprogram dozens of processing systems to account for tax reform, and continue the transition away from legacy platforms. Completing the transition to modern systems will eventually yield long-term O&M savings and efficiencies by allowing IRS to retire inefficient, manual platforms and processes. The timing of these savings and the future distribution of funding between O&M and DME will be determined by a number of factors including new tax legislation, taxpayer demand for online services, trends in cybersecurity, and other constraints. Even so, we are making progress. We use the technology roadmap to guide all solution design work, including implementation of legislative mandates. As a result, we are advancing toward the vision we set for how IT will operate in the future, both directly and indirectly.

3. The Government Accountability Office (GAO) has reported that the IRS does not have a process for prioritizing its modernization activities, which it spent $800 million on in FY 2016.

a. Without a process, how does the IRS decide which modernization projects to dedicate resources to?

To clarify, GAO report 16-545, ***IRS Needs to Improve Its Processes for Prioritizing and***

Reporting Performance of Investments, states the following:

> While IRS has developed a structured process for allocating funding to its operations activities ***consistent with best practices***, it has not fully documented this process. IRS officials stated this is because the process is relatively new and not yet stabilized. In addition, IRS does not have a structured process for its modernization activities, because, according to officials, there are fewer competing activities than for operations activities.

Since the GAO report was issued, the IRS has documented the process for the Operations Support appropriation, and provided a copy to GAO (see attached). The process is the IRS's IT annual Portfolio Investment Plan (PIP) process. Through the PIP process, IT categorizes and prioritizes all IT demand related to the Operations Support appropriation into eight repeatable groups and within each group further classifies the requirement by operations/maintenance (O&M) or development /modernization /enhancement (DME), plus the filing season relationship or other internal priority designations. With limited resources and IT demand far exceeding available funding, this level of transparency facilitates leadership decision-making about where to apply funding based on priorities. Approximately 60% of our DME spend is covered as part of this process. To address the second part of the GAO recommendation, the IRS is in the process of documenting the prioritization process ***of the remaining modernization activities*** that are funded from the Business Systems Modernization appropriation. The IRS does have a process to ensure resources are aligned to the highest priorities including modernization. However, as stated above, at the time of the GAO report that process had not been documented. In a memorandum dated November 2, 2017, the IRS Commissioner established the foundational enterprise requirements that are the Service's highest priorities. These priorities are critical staffing (i.e. building redundancy in key areas, ensuring attrition does not put critical operating systems at risk, and closing skills gaps), Cyber and data security, refreshing aged technology infrastructure, and modernization/Reform Plan projects such as Web Applications, Return Review Program, Enterprise Case Management, etc. The IT priorities are aligned with IRS and Treasury priorities.

b. Who ultimately makes these decisions?

As stated in response to question 3a, the IRS Commissioner, with input from the IRS Senior Executive Team (SET), establishes the overall priorities for the IRS. The IRS's Chief Information Officer is responsible for approving the IT resource allocation, including modernization projects, to ensure they support the IRS corporate priorities and vision.

c. What is the role of the IRS Chief Information Officer (CIO) in this process?

The CIO is a member of the IRS SET and plays a role in determining the priorities for the organization. See response 3b above. The CIO has added responsibility for approving IT resource allocation, including modernization projects, to ensure they support the IRS corporate priorities and vision.

d. The IRS told GAO there is no documented formal process because there are less

competing interests so it is not necessary. However, the IRS has also argued that it does not have enough funding for its modernization efforts. Given the limited resources, why has the IRS not had an institutionalized process to ensure funds go to the agency's priorities?

IT has a process for prioritizing all IT demand and, in fact, the IRS SET prioritizes all major investments. As stated in the response to question 3a, the IRS documented the process for the Operations Support activities and is in the process of documenting the process for prioritizing the activities in the Business Systems Modernization appropriation. These processes, in conjunction with the IRS Commissioner's corporate priorities, provide a comprehensive framework that brings a long-term, repeatable, and rigorous process to all facets of IRS strategic planning – including project planning, programming, budgeting, and performance management.

e. If adequately funded, does the IRS have an estimate for how long it would take and at what cost to modernize all IRS IT systems?

As one of the largest financial institutions in the world, IRS supports hundreds of millions of taxpayers, requiring a large and incredibly complex IT ecosystem consisting of approximently 400 applications and over 200,000 hardware assets. Assigning a time estimate and costs to modernize all IRS IT systems is not feasible given the enormity of the IRS IT environment. However, IRS does have plans to modernize major components of the IT ecosystem as part of our Technology and Digital Roadmap.

In addition, an IRS IT infrastructure currency effort prioritizes the modernization of our operational hardware and software components. IRS is currently developing plans to address our aged infrastructure and is looking to cloud-based approaches.

f. Since GAO's report was released last year, what steps has the IRS taken to institute a process for its modernization efforts?

See response to question 3a.

g. The Treasury Inspector General for Tax Administration (TIGTA) testified the IRS needs to improve its project planning prior to starting development activities. What actions has the IRS taken to address these concerns?

The IRS has a long-standing history of applying system lifecycle methodologies to application development projects. We are applying these practices more holistically across a broader spectrum of IT projects. While we have more work to do in this regard, including documentation of certain processes, we believe we are on a good track.

As an example, since adopting new methodologies like Iterative and Agile, the IRS is able to augment traditional methodologies such as waterfall. The waterfall methodology was traditionally used for large scale modernization efforts lasting several years, with requirements gathering, design, development, test, and knowledge of all capabilities locked down up front for the entire lifecycle of the project. By planning with Agile and iterative technique, our collaborative effort with the business and IT delivery partners allows us to

define high level capabilities and prioritize their value and impact. We then can develop and deliver them incrementally so the customer can start realizing business results much sooner than a waterfall, 'big bang' approach to delivery. Once initial capabilities are delivered, the business then better understands the needs and priorities, and this new insight is factored into the next set of capabilities to be developed. As we experimented and transitioned to the new agile development approach, more clarity and better sequencing of planning activities have evolved.

Even so, the IRS conducts planning activities prior to solution design and development, including conducting market research, alternatives analysis, information sessions with industry and other agencies, to learn about new technologies and experiences in applying them, as well as performing prototypes and pilots, as appropriate. As IRS inserts new technology we align it to the overall mission and strategy of the IRS and perform readiness activities for the organization. IRS also has a rigorous governance process that serves as a decision-making entity and includes all stakeholder groups to ensure cost, schedule, scope and priorities are clearly established and monitored throughout the lifecycle of an IT project.

4. Customer Account Data Engine 2

a. What year did the IRS determine the Individual Master File (IMF) would need to be replaced?

In 1999, IRS made the decision to focus on replacing Assembler Language Code (ALC) systems, beginning with the Individual Master File (IMF), and subsequently the Customer Account Data Engine (CADE) Program was launched in 2000.

b. In what year did the IRS begin developing a strategy for CADE 2?

In 2008, the IRS created a core team to explore an approach to modernize the IMF and address issues in the ongoing CADE approach. Building upon the work already done in CADE, a new approach was developed to accelerate development of a centralized taxpayer account database (the "CADE 2 Database"), with a plan to complete implementation in three transition states:

- **Transition State 1 (TS1 – COMPLETED)**: Build out and stabilize a complete CADE 2 database, start using the CADE 2 database for on-line access and data extracts to other IRS systems, and shift from weekly processing to daily processing to improve taxpayer service.
- **Transition State 2 (TS2 – 3 OF 6 RELEASES DELIVERED) –** The most complex Transition State which encompasses the goal of modernizing the core IMF components—where majority of the tax law is embedded—from ALC to Java. Originally, this transition state was also expected to make CADE 2 the Authoritative Data Source (ADS) for financial and legal purposes and address the Financial Material Weakness (FMW) for individual taxpayer accounts. However, due to resource constraints and competing priorities, all outstanding projects associated with these two goals have been paused and will be deferred to a later transition state.

- **Transition State 3 (TS3)**: Following modernization of the core IMF components in TS2, TS3 will modernize the remaining IMF components including IMF preprocessing (validation and acceptance of tax transactions) and post-processing applications (distribution of taxpayer information to other IRS and external systems). Retire the IMF sequential files.

c. What was the initial cost estimate for the project?

The initial planned cost in January 2010 for the development of CADE 2 TS1 and TS2 was $435 million. Costs associated with TS3 were not estimated at that point in time. Given the size and magnitude of the TS1 and TS2 effort, there was insufficient information to determine the scale of impacts to interfaces and downstream system that would need to be addressed in TS3, as well as internal IMF complexities.

d. What is the total cost, to date, of CADE 2?

As of October 31, 2017, the total cost of CADE 2 is $1.2 billion—$1.16 billion from Business Systems Modernization (BSM) activities and $40 million from Operations and Maintenance activities. These funds support a multitude of activities needed to drive the program forward including: program planning and management, project management, architecture and engineering, prototype development, vendor comparisons for conversion tools, requirements development, harvesting of business logic from the existing code base, testing (performance, user, security, data generation), detailed design development, coding, infrastructure procurement, cyber security planning and scans, technical integration, organizational readiness and change management, and more.

e. What is the annual cost of running and maintaining the IMF?

The IRS spends approximately $15 million per year in direct costs to maintain the IMF. There are additional indirect costs such as training and system/database administration expenditures that are not included in this direct cost estimate.

It is important to understand that cost is not the primary driver for modernizing the IMF. The primary driver is to ensure access to and protection of the data as an enabler to real-time transaction processing in support of modernizing the taxpayer experience.

f. When was the initially planned completion date for CADE 2?

When the IRS initiated TS2, the most complex of the Transition States, the final release was planned for deployment in the 2020 filing season. This timeline was considered a stretch goal at the time with several key assumptions, including a) availability of funding to acquire contract support for specialized skill sets and b) hiring of additional IRS FTEs to backfill attrition in key positions (especially technical leadership). These assumptions were never realized due to budget cuts and associated hiring freezes over several years.

TS3 will modernize the remaining IMF components including preprocessing (validation and acceptance of transactions) and post settlement applications that are still written in ALC. It

will focus on integration – tying the data to the application and making it available to downstream systems for operational use- as the IRS works to retire the IMF sequential file and begin to update the database directly. A final timeline has not been estimated for this phase.

g. What is the planned completion date of CADE 2?

TS1 was completed in 2012, TS1.5 was completed in 2014, and TS2 is currently underway. As of FY 2017, TS2 was targeting completion in 2024. However, due to anticipated funding reductions, competing priorities, and staffing/hiring constraints, some scope elements/releases originally planned for TS2 have been deferred to future transition states. All available resources are now directed to TS2's most critical goal, reengineering the IMF core components, the most complex and risky portion of the system, where the majority of the tax law is embedded. The CADE 2 Release plan was updated and approved in January 2018 to reflect TS2's reduced scope with a new TS2 target completion in 2021-2022. There is not yet a target completion date for TS3. At this time, it is estimated that several years of work will remain to address TS3 goals and fully complete CADE 2. TS3 goals include replace all legacy reporting, add functionality to address the FMW for individual taxpayer accounts, make CADE 2 the ADS, and modernize feeds to downstream systems. These assumptions may change based on FY 2018 enacted appropriations.

h. When will the IMF be taken offline?

As noted above, current plans call for the IMF to be taken offline at the completion of TS3 of CADE 2 (see answer to question 4d above). With the deferment of scope from TS2 to TS3 resources and funding levels must be stabilized and assessed to determine impacts to the current strategy of three Transition States. Until this is completed, it will be difficult to predict when all components that support the IMF can be retired.

i. What functionality has been achieved through CADE 2 thus far?

- Accelerated from weekly to daily tax processing, resulting in faster refunds, notices, and availability of more current taxpayer information across the IRS to serve taxpayers more effectively. In addition:
    - Tax payments, returns, and other transactions are uploaded and updated on taxpayer accounts faster.
    - The time required to complete a merge of taxpayer information has been shortened, which helps to resolve issues such as identity theft more quickly.
    - IRS taxpayer assistors can view taxpayer account information within two days of the planned posting of new taxpayer information (previously, the timeframe was two weeks).
- Launched the CADE 2 Database, successfully migrating all individual taxpayer account information (approximately 290 million accounts and over a billion tax modules) from legacy sequential flat files to a modern relational database, establishing the IRS' data-centric foundation for the future.
- Migrated Corporate Files On-Line (CFOL), the IRS' taxpayer account viewing system, from the IMF to the CADE 2 database.

  - Result was taxpayers and IRS assistors use CADE 2 data when viewing tax data online, a critical step in replacing IMF.
- Established CADE 2 Operational Data Store (ODS) within the IRS' enterprise data warehouse, making up-to-date individual taxpayer data available to the Business and CFO for reporting and analysis.
- Established self-service reporting and analysis capability using the CADE 2 ODS as the data source, enabling the IRS Business and CFO to perform ad hoc queries and generate reports using up-to-date individual taxpayer data.
- Improved currency of the data within the enterprise data warehouse by refreshing daily (previously was monthly).
- Deployed database year-end conversion capability that allows IRS to retain expanded taxpayer history from the previous tax season for the first time ever, improving taxpayer service and enhancing IRS compliance enforcement.
- Took significant steps toward addressing the Financial Material Weakness for Individual Taxpayer accounting:
  - Implemented common Penalty & Interest (P&I) code across IMF, Business Master File (BMF) and Integrated Data Retrieval System (IDRS) resulting in consistent and accurate P&I calculations on taxpayer accounts and financial statements. No projectable P&I errors were identified for fiscal year 2016 during the Government Accountability Office's annual audit.
  - Implemented functionality to include Pending Payment Transactions in the unpaid assessment balance, improving IRS financial statement and reporting accuracy.
- Modernized one of the IMF's most complex set of financial reports (Financial Recap Reports) that is used to feed the IRS General Ledger and deployed to Production in parallel validation mode (provides the opportunity for the Business to confirm the accuracy of the CADE 2 financial reports by comparing results to the IMF).
- Developed and tested a code conversion tool that moved IMF business rules from ALC into intermediate Java code, allowing the use of modern Java tools to perform analysis as we modernize. We have launched the effort to re-write the core IMF components in Java, using the intermediate Java code to identify IMF code related to the most critical business functions and to prioritize early development of those functions. This intermediate code has also solved some critical design problems related to ALC coding constructs that were developed in the 1960's when efficiently using limited CPU and storage capacity was more important than ease of maintenance.
- Implemented an innovative legacy code analysis, documentation and knowledge transfer methodology, enabling us to expand the number within our IT community who have knowledge of the most critical piece of individual taxpayer processing.

j. What functionality has yet to be completed?

- Continue ongoing efforts to modernize core IMF components—where most of the tax law is embedded—from legacy ALC to Java platform, perform extensive parallel validation, and retire the core IMF components.
- Modify the modernized Java components to update the database directly and retire the IMF sequential files.

- Make the CADE 2 database the Authoritative Data Store (ADS) for financial statements and reports (and the annual GAO financial statement audit).
- Address the Unpaid Assessment Financial Material Weakness (FMW) for individual taxpayer accounts.
- Modernize the front-end of the system that accepts and validates transactions from upstream systems, as well as the back-end of the system that generates notices and other operational, customer service and compliance information to downstream IRS systems.

k. **Is the IRS still committed to replacing IMF via CADE 2, and if so, why is the planned FY 2018 spending for CADE 2 significantly lower than prior years?**

Replacing the IMF with CADE 2 remains one of the IRS' highest priority projects. CADE 2 has been re-planned to prioritize modernizing the IMF core components- where of most of the tax law is embedded- from legacy ALC to Java (see additional details in (l) below).

l. **CADE 2 is considered one of the IRS' most significant modernization efforts and yet it is currently under a strategic pause while its release plan is being revised.**

The CADE 2 Program is not under a strategic pause but specific CADE 2 TS2 projects are currently paused to prioritize modernizing the IMF core components- where of most of the tax law is embedded- from legacy ALC to Java.

i. **What is the current status of CADE 2?**

All CADE 2 resources are now directed to the one, most critical CADE 2 project: modernizing the core IMF components from legacy ALC to Java. All remaining CADE 2 TS2 ADS and FMW projects have been paused to allow resources to focus on modernizing the core components of the IMF. The CADE 2 TS2 Release Plan (v5.0) was updated and approved in January 2018 to reflect these changes.

ii. **What date did the strategic pause begin?**

The pausing of specific CADE 2 TS2 projects was conducted in waves. The first wave, executed in January 2017, addressed resource constraints, specifically IMF subject matter experts that could not support the conversion of IMF core components, FMW, and ADS projects in parallel. This resulted in pausing of FMW-related projects. The second wave occurred in June 2017, resulting in pausing a subset of ADS-related projects. , the third wave occurred in September, October, and November 2017 resulting in the pause of the remaining ADS-related projects. (See attached Release Plan v4.2 for a list of projects, description, and dates related to deployment, pause, and anticipated start date.)

iii. **When is the strategic pause scheduled to end?**

As noted above, the CADE 2 program is not under a strategic pause but has paused certain TS2 projects and directed all budgeted resources to its most critical project: modernizing the core IMF components from legacy ALC to Java. The IRS will re-evaluate this approach throughout the year

iv. Why is the release plan being revised?

The release plan was updated in January 2018 to defer scope from Releases 4, 5, and 6 in TS2 to a future transition state to reflect the Program's focus on modernizing IMF core components from ALC to Java, and the pausing of ADS and FMW projects. NOTE: Deferring ADS and FMW-related projects from TS2 to TS3 will push the overall timeline to complete CADE 2 and retire IMF.

v. When will the revised release plan be completed?

The CADE 2 TS 2 Release Plan (v5.0) was updated and approved by the Executive Steering Committee (ESC) on January 26, 2018.

vi. Please describe any anticipated changes to the CADE 2 release plan.

As described above, the release plan was updated to reflect the Program's focus on modernizing IMF core components from ALC to Java and the pausing of ADS and FMW projects. The pause of these projects will push the overall timeline to complete CADE 2 and retire IMF.

m. The IRS CIO testified that CADE 2 could be completed in five years if the IRS receives an additional $85 million per year and an additional 50 to 60 full-time equivalents. Please describe how the IRS determined this estimate.

The five-year timeline referenced by the IRS CIO was specific to completing the modernization of the core IMF components (where majority of the tax law is embedded) from ALC to Java, not to the completion of the full scope of CADE 2. CADE 2 can deliver the modernized IMF core components to production, followed by one year of parallel validation, resulting in retiring the legacy runs.

n. Is there a strategy to address IT workforce gaps, especially as it relates to the IMF? If so, please describe.

IT workforce gaps pose a very real risk to maintainability of the IMF system moving forward, as the number of developers who know and understand the technology and tax law business rules are decreasing at an alarming rate. Many of the existing developers are eligible for retirement, the team is already understaffed, and there are not sufficient candidates available to backfill behind them because the technology is outdated and skills do not exist in the marketplace. Each year, it becomes increasingly challenging to implement new tax law changes and production fixes due to the decrease in knowledge of how the system works.

To mitigate these workforce risks in the short term the IMF Stabilization Plan was developed in 2016. The Plan describes detailed mitigation activities that are planned and/or taking place for specific resource and skillset gaps. This plan is revisited and refined monthly. The next revision will further define our strategy to maintain core IMF components, while preparing to transition existing staff to the modernized components once completed. Hiring

staff is dependent upon the necessary funding and approvals to hire in order to close the gaps.

5. Enterprise Case Management (ECM) Program. The ECM Program is reported to have paused all development activities. While the Committee understands the need to consolidate the number of ECM systems that the IRS maintains, please provide acquisition timeline(s) for the one or more ECM systems that the IRS anticipates acquiring and a list of the business units or divisions that each ECM system will be used for.

The IRS is currently developing a request for quotations (RFQ) for issuance in mid calendar year 2018 that will allow the IRS to choose two vendors to execute challenge-based scenarios (known in the industry as a First Article Test). The First Article Test will provide limited funding to two vendors to install their product in the IRS IT environment and have the IRS test key functionality. Based on the First Article Test, the IRS will then select one or more products to license to resume development of an enterprise-wide case management system in early 2019. Implementation order will be more along similar lines of business (such as Exam or Collections) rather than business unit/division.

All activities beyond the RFQ stage are subject to the availability of staff and funding.

a. The ECM stopped development due to "technical limitations" of the commercial off-the-shelf product according to TIGTA's testimony. Please describe these technical limitations in detail.

In November 2016, the IRS sent MicroPact, vendor of the entellitrak commercial off the shelf (COTS) product, a list of 37 operational problems related to using entellitrak to develop the ECM system and requested that MicroPact address the problems. The 37 problems were categorized into five levels of criticality:

1. Major (seven problems) - Direct impact on the ability to perform development and/or incorporate entellitrak into ECM Continuous Integration/Continuous Delivery processes that support multiple development teams, automated testing and automated software deployment.
2. High (twenty problems) - Significant impact prohibiting the ability to support large software development teams, integrate to automated tools for software code control and automate software deployment to production. The vendor's recommended resolution to these issues required manual work arounds or unacceptable mitigation strategies.
3. Moderate (four problems) - Elevated impact requiring minimal manual mitigation strategies to resolve. The inability to customize the entellitrak user interface for particular users is included in this group.
4. Nominal (four problems) - Impact requiring assessment of manual vs. automated mitigation strategies to ensure ECM development can move forward. Software code promotion through a plug-in would be an example.
5. Minor (two problems) - Minor impacts that can be addressed with a manual mitigation strategy.

By January 2017, only seven of the 37 problems were closed and the remaining 30 were open. Additionally, any commitments for product enhancements to address these issues would not be available for validation for more than 24-36 months.

b. When was this ECM solution procured?

The ECM Program was launched in early 2015 with a COTS product—MicroPact's entellitrak software platform—that was already in use in the IRS IT environment. At that time, entellitrak Windows platform had been in use at the IRS since 2008, and was used successfully to support 14 separate business processes.

c. When did the IRS become aware of these technical limitations and how did the IRS become aware of them?

In September 2014, IRS performed a technical review for Organizational Hierarchy functionalities for the Taxpayer Advocate Service Integrated System (TASIS) with entellitrak. The Technical Issues/Concerns & Lessons Learned Overview for that demonstration reported that this Windows-based version of entellitrak:

- Had not proven it can be scalable to IRS needs
- Did not have the ability to customize the entellitrak user interface for a particular user
- Did not have Continuous Integration capability
- Did not entirely insulate its source control

The IRS continued to use entellitrak because a new version of the software, version 3.23, based on the Linux operating system, promised significant improvements over the older, Windows-based version. Entellitrak also had a proven track record at the IRS, supporting 14 business systems using the entellitrak/e-Trak platform. It was only with hands-on, large-scale development work with proposed ECM "early deliveries" in the latter half of 2016 that the IRS became aware of the breadth and depth of the issues with the latest version of entellitrak. As a result, the IRS launched a deep dive analysis over the summer of 2016 to explore and document all issues with entellitrak that could prevent it from being effective, as an enterprise-wide ECM platform. This analysis confirmed issues with the software platform, including those associated with managing developer's code, automated processes for deploying the application, scalability, upgrade path compatibility and user interface.

In November 2016, the IRS sent MicroPact, the vendor of the entellitrak COTS product, a list of 37 operational problems related to using entellitrak to develop the ECM system and requested that MicroPact address the problems (described in 5a above). Based on MicroPact's response and ongoing discussions with the vendor, it was concluded in early 2017 that the IRS needed to find another solution for enterprise case management. Leveraging the work that had been completed and the lessons learned from the MicroPact experience, the program defined and launched a product assessment and acquisition

strategy to identify and evaluate a suite of products with core capabilities that were scalable and best aligned with IRS future state to serve as the foundation for an enterprise case management platform. Our learnings were augmented by information exchanges with other agencies about their experiences in implementing enterprise case management, two requests for information (RFI) from the vendor community and an analysis of applicable audit findings and recommendations. The accumulation of all this data was the basis for the request for quotations (RFQ) under development.

d. When did the IRS stop development of this ECM?

Based on the deep dive analysis and input from MicroPact about when they could or could not address the issues raised by the IRS, the IRS paused development of ECM in November 2016. An orderly shutdown of all development activities was conducted, as the ECM projects received Governance Board approval to cease development work. The IRS then conducted a retrospective evaluation of the program to date, identifying lessons learned and solution components that could be leveraged going forward. The ECM Program also developed a Go-Forward Plan and received approval to move forward with the ECM Product Assessment and acquisition strategy (described in question 5g below).

e. What is the current date for completion?

The IRS is currently developing a Request for Quotations (RFQ) for issuance in mid-year 2018 that will allow the IRS to choose vendors for challenge-based scenarios (First Article Test). The First Article Test will provide limited funding to two vendors to install their product in the IRS IT ecosystem and allow the IRS hands-on access to technical and business capabilities. Based on the First Article Test, the IRS will then select one or more products to license to resume development/implementation of an enterprise-wide case management system in early 2019. All activity past the First Article Test stage is subject to the availability of staff and funding. Based on our learnings from other agencies and the scale and complexity of the legacy case management systems across the IRS, this will be a multi-year program.

f. Why were these technical limitations not identified prior to the procurement of the ECM?

The entellitrak platform had been used successfully by the IRS for many years prior to the launch of the ECM Program in 2015. There were no major problems with any of the applications that were leveraging the product. Only in the "Early Deliveries" development work in 2016 did problems begin to emerge that would question the use of entellitrak as an IRS-wide enterprise case management platform. The IRS launched these early deliveries precisely to learn about implementing solutions with entellitrak and discover any issues or constraints that might impact the solution architecture. As issues surfaced, the vendor assured the IRS that there were feasible workaround strategies that had been successfully used with other clients to address the technical constraints. Only after hands-on development and extensive analysis with the MicroPact did the IRS determine that these workaround strategies were inadequate to support an enterprise solution of the scale required for IRS. These issues reached a critical point in 2016 (see response to 5a and 5c above) with the detailed documentation of 37 operational problems with the use of

entellitrak.

g. **What steps has the IRS taken and what safeguards has it put in place to ensure this situation does not occur again?**

The IRS has defined a strategy and taken a number of actions to ensure that the selection of the product(s) for delivering Enterprise Case Management will meet both business and technical requirements. These reflect the analysis and lessons learned from the entellitrak experience as well as interviews with numerous agencies implementing programs of similar scope and scale. In November 2016, the IRS paused ECM development work and followed standard processes to stand down all development work, focusing on conducting a retrospective evaluation of the program to date, identifying lessons learned and solution components that could be leveraged going forward. The IRS approved a robust ECM Product Assessment approach and acquisition strategy in April 2017. This product assessment is based on a strategy proven in government and includes a challenge-based acquisition process leveraging strong industry engagement along with multi-phased awards with challenge-based scenarios to validate sustainability for IRS operations and business functionality.

In the summer and fall of 2017 the IRS developed and issued two Requests for Information (RFIs) to solicit industry perspective on Enterprise Case Management solutions. The IT and Business ECM Program Management Offices also studied GAO and TIGTA reports on related projects, identifying lessons learned and best practices to apply to ECM. They also met with invited federal and state agencies to share lessons learned from implementing solutions of similar complexity and demands on their organization. Nearly all the experiences shared by other agencies were multi-year projects with valuable lessons learned occurring between 2013 and the present time. These agencies were attempting to address technical challenges and execute transformational changes to existing business processes of similar scale and complexity at the same time as the IRS. Many of the agencies the IRS met with had significant initial challenges with tools and solutions similar to those experienced by the IRS. The IRS believes the capabilities of COTS products and cloud technology have undergone a significant change in the past few years, so the new market research and acquisition strategy is critical to determine the best product(s) that meet the IRS' business and technical requirements.

The IRS invited ten vendors (eight product developers and two solution integrators) to demonstrate products and discuss solutions presented in their response to RFI #1, and subsequently invited four vendors in for more in-depth, scenario-based demonstrations based on responses to RFI #2.

The IRS is currently developing a Request for Quotations (RFQ) for issuance in early 2018 that will allow the IRS to choose two vendors for challenge-based scenarios (First Article Test). The IRS has determined minimum mandatory requirements to specifically address the lessons learned from entellitrak, as well as more than 300 business and technical capabilities and requirements. The First Article Test will provide limited funding to selected vendors to install their product in the IRS IT ecosystem and allow the IRS hands-on access

to technical and business capabilities. Based on the First Article Test, the IRS will then select one or more products to license to resume development of an enterprise-wide case management system in early 2019. All activity past the First Article Test stage is subject to the availability of staff and funding.

6. In December of 2010, the U.S. CIO directed agencies to shift to a cloud first policy.

   a. What steps has the IRS taken to move its systems to the cloud?

   The IRS has developed and approved Version 1 of an enterprise-wide cloud strategy. The IRS Cloud Strategy will be the foundation for work to achieve tangible cloud results and will be updated routinely. The IRS Cloud Strategy addresses a path to:

   - Drive cloud adoption by creating processes to select, manage, and inventory cloud-based services at IRS.
   - Develop appropriate risk frameworks to ensure safe cloud adoption
   - Develop a roadmap to assess and migrate legacy IRS IT capabilities to the cloud. We anticipate significant cost savings once migrations are completed. Additionally, IRS has begun work within and across its IT units to push forward with cloud adoption. These steps, which are in-flight as of March 2018, include:
   - Developing a target state architecture for the IRS Cloud
   - Drafting RFI to engage cloud vendors in discussions to better understand the marketplace for cloud services and collecting RFP requirements to procure cloud services
   - Developing security architecture for IRS Cloud
   - Standing up appropriate management and governance structures for Cloud adoption and Cloud operations at IRS in order to facilitate migration.
   - Assessing numerous IRS applications across technical, risk, and pricing dimensions to determine cloud suitability and recommendations for cloud migration.

   Several IRS applications (including MoveLINQ, eFOIA, and eDiscovery) have moved or are currently moving to the Cloud, following the Software-as-a-Service (SaaS) service model. In addition, IRS has network upgrades underway, which will enhance secure connectivity between the IRS and Cloud service providers.

   b. And when did the IRS deploy its first cloud?

   IRS has used cloud technologies and managed services strategically in the past several years and has used these experiences to help shape our cloud strategy. Examples of early cloud implementations include:

   - The IRS implemented the Enterprise Storage Solution (ESS) in FY2014.
   - Foreign Account Tax Compliance Act (FATCA) International Data Exchange Service (IDES). - Amazon Web Service (AWS) – IRS Authority-to-Operate (ATO) to GSA in 2015 and then reviewed and updated on 2/7/2017

- Integrated Enterprise Portal (IEP) – a secure managed service private cloud. Uses Akamai cloud service for content distribution. – IRS ATO to GSA on 7/12/2016
- Web Content Management System (WCMS) – Acquia Cloud to support IRS.gov – IRS ATO to GSA on 7/26/17
- MoveLINQ - Financial relocation management software to SaaS based cloud provider – IRS ATO to GSA on 9/22/2017

c. What are the security implications of failing to implement an IRS cloud strategy?

There are multiple security benefits the IRS hopes to achieve by implementing cloud technology:

- Due to the superior speed and agility enabled by cloud, security vulnerabilities of cloud applications can be addressed more rapidly.
- The centralized management and high degree of standardization and automation enabled by cloud ensures consistent and rapid security action and responses across the portfolio of applications/services hosted in the cloud.
- Cloud vendors adhere to strict security requirements that can be tailored to IRS needs, and reviewed, tested, and approved in advance to ensure compliance with IRS and NIST standards. All applications in a cloud environment inherit a strict set of baseline cloud security controls, ensuring high degree of security and consistency.
- Implementing cloud ensures that infrastructure utilization is maintained at the optimal level, decreasing risks associated with maintaining excessive physical infrastructure.

d. Why was there a six-year delay before the IRS began to consider a cloud-first strategy, as mandated by the U.S. CIO?

At the time the U.S. CIO directive was issued, many of the industry mechanisms necessary to execute a cloud-first strategy were not yet in place. At that point, the market was still maturing in several important respects, including the proven capabilities/offerings of cloud vendors, federal guidance around cloud security, and most importantly the understanding of security risks specific to cloud. Given the paramount position of security and the data security/privacy requirements of IRS under section 6103, the agency took a low-risk approach and continued to monitor the maturity of the market. FedRAMP security controls were released in 2012, and the first FedRAMP Authority-to-Operate (ATO) was issued in May 2013. Once the market of cloud vendor offerings, federal guidance, and cloud security advanced to greater maturity, the IRS began exploring cloud. In 2012, the IRS implemented the Enterprise Storage Solution (ESS), Storage-as-a-Service, cloud-managed service solution offering, while the International Data Exchange System (IDES) went live in January 2015. IRS successfully used cloud technologies and managed services strategically and opportunistically in the past several years, per the examples provided for question 6(b). Given the numerous successful cloud implementations across federal agencies in the past few years, IRS has developed and approved (in December 2017) its enterprise-wide cloud strategy, which addresses the "cloud first" directive.

7. What is the IRS's process for determining and prioritizing which online account features or functionalities will be added next to existing online services?

The IRS determines and prioritizes the addition of new features and functionalities to online accounts by evaluating and prioritizing proposals led by a cross-functional team. The proposals are evaluated and ranked against both previously proposed online account capabilities and other capabilities within the Web Apps scope. This process is facilitated by the Web Apps PMO and begins when IRS business units propose new features/capabilities for online accounts through a well-structured intake methodology. The proposals are evaluated by the business operating unit, Online Services and IT, and scored across multiple dimensions. A list of scored capabilities, also referred to as the "product prioritization backlog," is reviewed regularly by a core team made up of the business units and IT, which selects capabilities to be proposed for development based on the score. The proposals and any dependencies are reviewed and dispositioned by the Web Apps Governance board, the Digital Subcommittee and the Strategic Development Executive Steering Committee. Approved entries go through a product elaboration process where the team discusses the requirements and design before transitioning the capability to the development teams.

Once approved, features and functionalities are delivered using an agile delivery model that emphasizes adaptive planning, evolutionary development, continuous improvement, and encourages rapid and flexible response to change. The development and delivery of features for online accounts are managed using a product backlog, which reflects user stories for each approved feature. Development activity prioritizes the planned features based on application metrics, user testing/feedback, and business priorities. Generally, new features have been released approximately every 9 weeks.

8. While the IRS has reported a significant decline in self-reported cases of identity theft, how does the IRS address individuals who may be unaware of having had their identities stolen?

We take all types of tax-related identity theft fraud seriously. We have expended substantial resources to identify and stop tax-related fraud and the victimization of innocent taxpayers when their personally identifiable information is used to file a tax return. When we identify tax-related fraud, we make every effort to notify the taxpayer and assist them in taking the necessary steps to protect their identity from further misuse. The notification depends on how we detected the tax-related identity theft. There are instances where we are unable to notify them because we do not have a valid mailing address.

For example, when an attempt to electronically file a tax return is made which includes a Social Security number (SSN) already used or listed on another return for the same tax year, the return is rejected. The taxpayer receives a rejection message through the e-File system which alerts them that they may be a victim of identity theft. After receiving the reject notification, taxpayers generally call the IRS and assistance is provided. If a return was previously processed with the taxpayer's SSN, the assistor instructs the taxpayer to file a paper return and attach Form 14039, Identity Theft Affidavit. The assistor will also provide the caller general identity theft information on how to protect their identity. In February 2018, The Federal Trade Commission (FTC), in cooperation with the IRS, updated their IdentityTheft.gov website to provide taxpayers reporting an identity theft incident with the opportunity to send a Form 14039 to the IRS. FTC's Identity Theft questionnaire was updated to include questions for the taxpayer to complete. The questionnaire gathers the information necessary to complete a Form 14039 from the taxpayer. After completing the questionnaire, the taxpayer previously had to print the completed Form 14039, Identity Theft Affidavit, from FTC's IdentityTheft.gov website and forward it to the IRS for processing. Now at the push of a button, the Form 14039 information is sent by FTC to the IRS, if the taxpayer informs FTC

to do so. The data files containing the Form 14309 information, for taxpayers who chose to submit it to the IRS, are sent by FTC to the IRS daily through secure servers. The IRS takes the information received from FTC, converts it to a Form 14039, and processes it.

Here are other instances when the IRS sends notifications which may alert the taxpayer of potential identity theft:

- We notify taxpayers of questionable returns filed using their SSN when the returns are selected for review by the Taxpayer Protection Program. The letter informs the taxpayer we detected a tax return with indications of identity theft and asks them to confirm if they filed the return in question. After confirming their identity, if the taxpayer did not file the return, we take steps to assist them. If the taxpayer did file the return, we release the return for processing and issuance of the refund.

- We notify taxpayers, either directly or through an Electronic Return Originator, if we receive an electronically-filed extension request and our records show a tax return has already been filed for that tax year. We reject the extension request and notify the taxpayer that a return has already been filed using their SSN.

- We notify taxpayers who are potential victims of employment-related identity theft. The IRS defines employment-related identity theft as the misuse of another person's SSN to obtain employment. In January 2017, we began issuing a letter (CP01E) when a new incident of employment-related identity theft is identified. The letter is sent to the taxpayer whose SSN was listed on a Form W-2 which does not belong to that taxpayer. This notice alerts the taxpayer that we've taken actions to ensure there is no impact to their tax return or tax account, and they may wish to review the earnings posted to their Social Security Administration account.

IRS also works closely with the Federal Trade Commission to provide information and guidance on identity theft prevention and detection. Steps to follow if you are a victim are provided year-round at IRS.gov and emphasized during the national Security Awareness Week. For more information on IRS.gov see "Identity Protection: Prevention, Detection and Victim Assistance", "How Do You Report Suspected Tax Fraud Activity?" and "IRS Identity Theft Victim Assistance: How It Works".

a. Does the IRS have an estimate of how many taxpayers are victims of identity theft and are unaware of it?

The IRS is not able to estimate how many taxpayers are victims of identity (ID) theft and are unaware of it; however, we do estimate the extent of protected and unprotected identity theft through our annual Taxonomy. If the IRS identifies tax-related identity theft, we notify the taxpayers. It is possible that in the population of unprotected identity theft, the taxpayers may not be aware they are a victim. We are not able to offer an estimate of that population. The IRS does monitor the extent of identity theft refund fraud through our Taxonomy. This research-based effort aims to report on the effectiveness of IRS's identity theft defenses to internal and external stakeholders, help us identify identity theft trends and evolving risks. It also helps us to refine identity theft filters to better detect potentially

fraudulent returns, while reducing the likelihood of flagging legitimate tax returns. Uncertainty exists because the *ID theft unprotected* figures represent an estimate of ID theft returns not stopped by the IRS defenses. To produce the estimate, IRS must distinguish these ID theft returns (that by-passed our defenses) from legitimate filings as well as first party fraud. This is a difficult task as ID thieves are attempting to present themselves as a legitimate taxpayer.

For 2016, ID theft returns unprotected are estimated to be between 740K – 810K ($1.68 – $2.31 billion in refunds); whereas ID theft returns protected are estimated to be between 1.98 million to 1.99 million ($10.56 – $10.61 billion in refunds). Both estimates are lower than they were in 2015 (estimated unprotected returns between 860K – 1.03M for $2.24 - 3.34 billion in refunds; estimated protected returns 2.38M – 2.47M for $12.35-12.88 billion in refunds).

b. If so, please describe the methodology for this estimate.

The Taxonomy estimates the number of identified identity theft refund fraud cases where IRS (1) prevented or recovered the fraudulent refunds, and (2) paid the fraudulent refunds. We break these estimates into categories corresponding to IDT detection strategies, which occur at three key points in the life cycle of a tax refund: before accepting a tax return, during return processing, and post refund.

9. What substantial IT cost savings have been achieved by the IRS in the last three years?

As Deputy Commissioner Tribiano shared during the hearing, IRS needs to do a better job of articulating the benefits from our IT investments. While there are substantial cost savings/reductions associated with some of our IT investments, in many cases the value in our IT investments are attributable to expanded services and performance improvements. Much like when you finally upgrade your old flip phone to a smartphone—it was not cost savings that compelled you to upgrade but rather new and expanded forms of communication and services necessary to remain functional in the current digital age. Likewise, cost savings/reductions are not always the compelling reason to modernize IRS systems. In many cases it is the need for expanded service to taxpayers, such as our web applications; to address proliferation of fraud detection, such as our RRP anomaly detection system; to create new operational efficiencies, such as our Enterprise Case Management enterprise platform and common business functions; or even to ensure long-term viability and security of our core tax processing systems and data, such as in CADE 2.

Following are examples of IT investments over the last three years where there was not only expanded business value but also substantial IT cost reductions realized:

- Integrated Enterprise Portal (IEP). IRS has been able to maintain 100% availability for its IRS.gov offering while reducing its annual Infrastructure Operations and Maintenance cost on its IEP by approximately $1M in FY 2015, $2M in FY 2016 and $7M in FY 2017 through innovation and contract negotiation.

- Storage-as-a-Service. IRS's data storage strategy to maintain a manageable and scalable storage infrastructure under a private cloud managed service has shown cost

savings of over $34M from 2013 to 2016 and 12 petabytes of disk storage over a period of 36 months.

- Convergence Unified Communications. Modernization of IRS's disparate legacy networks infrastructure, from over 470 assets managed and maintained by dispersed teams of 108 FTE, to one unified system distributed geographically across 13 call control clusters maintained by 40 centralized engineers and technicians, showed approximately $49.7M in combined savings for FY 2015 to 2017 (total $200M in savings projected from FY 2012 through FY 2021). As of FY 2017, converged network is showing savings of over $25-30M annually in circuit costs and annual maintenance.
- Strategic Acquisitions. Use of strategic sourcing techniques in contract negotiations has resulted in nearly $34M in major hardware and software savings realized in FY 2014 to FY 2016. IT cost savings were achieved by implementing centralized management of software licenses, increasing license utilization, licensing by more efficient use models, and effectively using total cost of ownership analysis to guide hardware purchases.

Source	Type	FY15 Savings
BMC Software Licensing	Software	3,101,774
IBM Mainframe Platform Refresh	Hardware	14,000,000
	Total	***17,101,774***

Source	Type	FY16 Savings
Oracle Licensing	Software	1,992,299
IBM Mainframe	Hardware	1,115,009
	Total	***3,107,308***

Source	Type	FY17 Savings
Microsoft Licensing	Software	11,775,232
Pitney Bowes Licensing	Software	1,950,708
	Total	***13,725,940***

10. What is the IRS's plan and timeline for replacing the 64 percent of the IRS's hardware that TIGTA determined is past the end of its useful life?

One of our biggest risks is our aging infrastructure. Over the last several years, we used our appropriated resources and user fees to maintain infrastructure components for our core filing season systems. However, the impact of not investing in our non-filing season systems is being realized, with increasing levels of aged infrastructure resulting in higher levels of instability and

downtime in these areas. Our goal to ensure that the hardware, software and other infrastructure components supporting filing season systems were current has been difficult to maintain. With aged infrastructure reaching unacceptable levels, the IRS identified aging infrastructure as the top enterprise risk in FY 2016 and took steps to begin addressing this growing problem. As a result, IRS decreased the estimated replacement cost percentage of aged hardware assets in use from 63% in FY 2017 to 58% the start of FY 2018.

Beyond the existing backlog of aged hardware and software, there is an ongoing need to replace approximately 20% of the IT hardware annually, requiring $136M in dedicated recurring funding to remain current.

The IRS has completed or is currently working through over 32,000 hardware assets prioritized through the Sustaining Infrastructure program that involves servers, network hardware (Ex. switches, routers, automated call distributors) and IRS employee end user equipment (Ex. laptops, printers).

Walorski

The Return Review Program, or RRP, was designed to replace a legacy fraud detection system from the 1990s, but it came in hundreds of millions of dollars over original estimates and years behind schedule. My concern is that after spending over $300 million and seven years on the RRP, there doesn't seem to have been an accompanying investment in analysis. As I understand it, IRS analysts are still using a program called Discoverer to analyze potential fraud cases flagged by RRP.

1. **Is that correct?**

RRP has been in operation since Filing Season (FS) 2015, and continues to perform in Filing Season 2018 as the Government's primary line of defense against the perpetration of tax refund identity theft, fraud and non-compliance. RRP is an integral part of the tax system pipeline and uses state-of-the-art analytics tools to prevent the loss of billions of dollars of revenue by identifying fraudulent tax refund cases and preventing related refunds from being issued. Since the start of FS 2015, RRP has protected over $10.29 billion in total confirmed revenue, with a Return on Investment (ROI) of more than 1,572%. In FS 2018 (as of March 8, 2018), RRP has systemically flagged approximately 1.3 million potentially fraudulent tax refund returns, with revenue protected figures not available at this time as it normally takes about 120 days to confirm fraud. In FS 2017, RRP systematically selected approximately 1.1 million potential tax refund returns and protected approximately $4.39 billion in total confirmed revenue. RRP has increased Identity Theft detection by 96% between 2015 and 2016, which has helped decrease Identity Theft victims by over 60% since 2015.

Oracle Discoverer is an IRS Enterprise approved COTS software tool that provides users with standard reports, ad-hoc reports and manual research (i.e., querying) capabilities. Yes, Oracle Discoverer is one of many software tools that the RRP leverages to identify fraud. Leveraging Discoverer, analysts have an ability to manually flag potential fraud cases. In FS 2017, analysts selected 194,418 potential tax refund returns and protected $323 million in total confirmed revenue.

2. **If yes, how old is Discoverer?**

IRS analysts have leveraged Oracle Discoverer since 2009. Currently, there are approximately 275 active users using the software tool to analyze the RRP data of potential fraud.

3. Is it true that analysts need to run complex queries on Discoverer overnight in order to prevent the whole system from crashing?

No, it is not true that analysts need to run complex queries overnight in order to prevent the whole system from crashing. Analysts do run complex queries on Discoverer, sometimes on a 24x7 basis, due to just-in-time analytics needs (i.e., to support a time-critical investigation) which may take longer to execute depending on the complexity.

The whole fraud detection system is designed to be composed of both systemic and manual selection. Analysts use Discoverer to manually identify potential Identity Theft cases by running both simple and complex queries. Analysts use Discoverer with read-only access to a separate reporting database environment, which is synchronized nightly with the production database environment. This is a common strategy to ensure that production processing is not impacted by reporting processing

4. How does this lag affect the ability to update RRP filters?

There is no lag that affects RRP's ability to update models, rules, clusters and filters. RRP employs the Cross Industry Standard Process for Data Mining (CRISP-DM) methodology for all its modeling and data mining activities to ensure business involvement in each stage of analytic development. IT collaborates with our business partners on a regular basis to identify new and evolving fraud patterns, to evaluate performance of existing models and to discuss changes for the next Filing Season. Recommended changes to RRP Analytics (models, rules, clusters and filters) follow an evaluation and change management process, and are deployed during periodic maintenance releases.

5. Is there a plan to retire Discoverer? If so, what is the timeline?

IRS is working to determine processes and tools that will allow us to retire legacy components such as Oracle Discoverer. RRP's most recent Releases (2.1 and 2.2) deployed to production in August 2017 and November 2017 respectively, provided the business with additional standard reports and ad-hoc reporting capability, but these do not provide all the manual research capabilities required. There is currently no timeline for Discoverer retirement; however, we continue to work diligently with the business and IT delivery partners to identify solutions that will offer the required capabilities securely and cost-effectively. IRS is working on defining an appropriate timeline and approach to retire the remaining capabilities of the Discoverer tool.

6. With the recent Equifax hack, what is the IRS doing to combat what will likely be more sophisticated fraud attempts?

Refund fraud caused by identity theft (IDT) is one of the biggest challenges facing the IRS today, and the harm it inflicts on innocent taxpayers is a problem we take very seriously. The IRS has a comprehensive strategy focusing on preventing refund fraud, investigating these crimes, and

assisting taxpayers victimized by tax-related IDT. Through the Security Summit, an unprecedented partnership between the IRS, the software industry, and the states, we continue a unified battle against IDT and work on collaborative solutions to combat stolen IDT refund fraud. IRS data shows significant improvements as fewer IDT returns entered the tax system, fewer fraudulent refunds were issued and fewer taxpayers were reporting themselves as victims of identity theft.

As identity thieves continue to become more sophisticated, the IRS has tightened its security in response to the increased threat. We are taking steps to make it harder for identity thieves to successfully masquerade as taxpayers and file fraudulent refund claims on behalf of these taxpayers. The IRS and partners recognize that large data breaches of personally identifiable information (PII) is a difficult and frustrating situation for the victims and financial ecosystem. A large-scale data breach such as Equifax, and many others, is a reminder of the value of data for fraudulent purposes and identity theft. Over the last several years, the IRS IDT fraud filtering processes remain effective even in situations of large losses of PII.

IRS uses several robust tools to assist in combatting tax-related IDT and fraud. This includes tools that are specific to addressing taxpayers who have been victims of a data loss of federal tax information (FTI). Because the data losses involving federal tax related data can be used to file returns that appear to be coming from the true taxpayer, IRS has implemented measures to address this. IRS's existing models and filters have been updated to address the level of sophistication used to file these fraudulent returns. We have implemented the use of Dynamic Selection Lists that allow IRS to monitor specific taxpayer accounts who have been victims of an FTI data beach when the data compromised would have a direct impact on federal tax administration. This allows the IRS to more effectively identify these suspicious returns and results in better protection for taxpayers' federal tax accounts and increased revenue protection.

In addition, there are multiple points in the processing life cycle to identify, prevent and assist possible IDT victims: pre-filing, at-filing, and post-filing.

To prevent IDT returns from even coming in the door (pre-filing), we have worked with tax software providers to improve the procedures that new and returning customers must use to identify themselves in order to minimize the chance that the taxpayer's software account can be taken over by identity thieves. This additional security is one of the most visible signs of increased protection to taxpayers because they will notice password requirements and other website security features. In addition, we have implemented a variety of mechanisms to prevent criminals from using a deceased individual's identity information to perpetrate fraud. We routinely lock the accounts of deceased taxpayers and have locked more than 30 million accounts so far.

At-filing, our IDT and fraud detection systems contain complex models and filters developed from historical and newly emerging known fraud characteristics. Address and bank account changes as well as historical taxpayer filing data are characteristics that are used in conjunction with other filters to identify potentially fraudulent/IDT returns. When returns are selected by a filter, the refunds are frozen until additional reviews verify if the refunds are legitimate.

7. How many IRS employees have the ability to sign a $7 million contract? Please provide a breakdown of which employees can sign which type of contracts.

Currently, there are 78 IRS employees with warrant authority to sign a $7M contract. In addition, there are 28 other IRS employees with warrant authority to sign contracts that are less than $7M. In order to obtain warrant authority, IRS employees must satisfy federal and agency-specific training, education, and experience requirements. The below table shows a breakdown of number of employees and warrant limits.

	Warrant Levels										
	$100 M+	$100M	$25M	$20M	$10M	$5M	$1M	$500K	$150K	$25K	$15K
Contracting Officer Quantity	63	2	3	1	9	2	12	2	11	0	1

Bishop

1. I understand that the IRS has identified the cost of consolidating case management systems through an internal process. I believe at the hearing you said $84 million annually for the next five years, to do it internally. Have you identified the cost of using a commercial product or contracting with a data services company to utilize its expertise, for the purpose of consolidating the various case management systems?

   First, the $84 million annually for the next five years was attributable to CADE 2 and not ECM. The IRS is developing a draft Request for Quotations (RFQ) for ECM that is scheduled for issuance in early 2018, which will allow the Service to choose vendors for challenge-based scenarios known as a First Article Test in the industry. The First Article Test will provide limited funding to a small number of vendors to install their product in the IRS IT ecosystem and allow the IRS hands-on access to technical and business capabilities. This will help ensure that the IRS selects the best possible product(s) to do the job based on utilization within the IRS environment. Following the First Article Test, the IRS will then select one or more commercial off the shelf (COTS) products to license to resume development of an enterprise-wide case management system in late 2018 or early 2019. Actual costs of this solution are unknown at this time, but would include any licensing, development, testing, implementation and ongoing operations/maintenance costs. The IRS is actively considering a COTS product or products to consolidate the case management systems currently in use.

2. When did the IRS begin using the Lead Case Analysis (LCA) system? How many times has it been utilized by a case worker in the criminal division each filing season since its acquisition? And how many times has Electronic Fraud Detection System (EFDS) been used by that same population of case workers?

   IRS Criminal Investigation (CI) deployed LCA in 2014. LCA is utilized in combination with EFDS daily by CI analysts performing research, developing schemes, identifying emerging fraud and supporting ongoing refund crimes compliance investigations. Since that initial 2014 deployment, LCA's use has also expanded to other user groups within CI working multiple case types, including all field agents and those with a focus on international, money laundering, and cyber-crimes. The numbers below reflect logins for CI's entire user population, as LCA does not track which users are also EFDS users. CI performs all compliance workload activity within EFDS as it is CI's only workload management system to ensure downstream processing occurs.

LCA accessed by CI	
Calendar Year	Total Logins
2017 (as of Nov 22)	624,383
2016	295,910
2015	37,924
2014	4,255

EFDS accessed by CI*	
Calendar Year	Total Logins
2017 (as of Nov 22)	18,789
2016	20,774
2015	24,310
2014	29,614

* qualified by the number of logins not number of sessions

3. In the time since the Criminal Investigations Division has begun using LCA, how many times has the civil division used EFDS to analyze a flagged return? And have they been able to use LCA at all?

Nine users in IRS business operating divisions (BODs) other than CI were granted use of LCA. They were able to access daily; however, they only accessed LCA periodically.
The Wage and Investment (W&I) BOD uses EFDS daily as their primary inventory workload management tool to take action on their potential fraudulent inventory and uses Discoverer and Business Objects tools to conduct primary analysis and research on returns and identifying emerging fraud.
IRS requires a real-time system in support of revenue protection and detecting emerging fraud trends. A real-time system is necessary in order to prevent returns from posting and refunds from generating. The functionality of LCA meets most of CI's needs but the data is only updated weekly unlike EFDS which is updated daily; data from LCA does not flow back to EFDS or RRP.

LCA accessed by BODs other than CI	
Calendar Year	Total Logins
2017 (as of Nov 22)	19
2016	14
2015 (Sept-Dec)	3
2014	N/A

EFDS accessed by Civil BODs	
Calendar Year	Total Logins
2017 (as of Nov 22)	70,683
2016	198,062
2015	346,108
2014	616,558

4. If civil division case workers have not had access to LCA, why can case workers in the criminal division use it?

CI purchased the commercially available off-the-shelf product as a platform to access multiple datasets at a single access point to support their investigative research needs. IRS IT approved its use for CI only, and the software is not integrated into the workflow business case selection, treatment and management processes in EFDS. In order to be effective for non-CI users, additional capabilities/modules would need to be added to the software.

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BRANDON CASEY,
MINORITY CHIEF OF STAFF

November 15, 2017

Mr. Danny Verneuille
Assistant Inspector General for Audit, Security and
Information Technology Services
Treasury Inspector General for Tax Administration
1401 H Street NW, Suite 469
Washington, DC 20005

Dear Mr. Verneuille:

Thank you for your testimony before the Committee on Ways and Means at the October 4, 2017 Oversight Subcommittee hearing entitled "IRS Reform: Challenges to Modernizing IT Infrastructure." In order to complete our hearing record, we would appreciate your responses to the following questions:

1. Is the Internal Revenue Service (IRS) Information Technology (IT) division properly placed within the IRS and does it have the tools necessary to properly weigh in on IT-dependent decision making?
2. The Federal Information Technology Acquisition Reform Act was intended to empower agency Chief Information Officers (CIOs) and ensure greater oversight on a regular basis of major IT investments.
    a. Why do you believe that providing greater roles for CIOs in major IT decisions is important?
    b. In the case of the IRS, do you believe that the IRS CIO has all of the powers that she needs to ensure that IRS IT is well managed and runs efficiently?
    c. Is the IRS undertaking its review of its major IT investments in a meaningful way? Has it led to improvements? If not, what else is needed?
3. *Enterprise Case Management (ECM) Program* -
    a. Why did it take the IRS 18 months to determine that the ECM system being procured would not meet IRS needs?
    b. How is the IRS able to procure IT solutions such as an enterprise case management system or an enterprise email system that later are determined to not meet its own needs?
    c. Are these a violation of the IRS's own internal policies and procedures?

d. What steps has the IRS taken and what safeguards has it put in place to ensure situations such as this do not occur again?
e. What additional steps could be taken to further ensure that this does not occur again?

Sincerely,

VERN BUCHANAN
Chairman
Subcommittee on Oversight

HOUSE COMMITTEE ON WAYS AND MEANS
SUBCOMMITTEE ON OVERSIGHT
QUESTIONS FOR THE RECORD FOR
DANNY VERNEUILLE
ASSISTANT INSPECTOR GENERAL FOR AUDIT
TREASURY INSPECTOR GENERAL FOR TAX ADMINISTRATION
SUBMITTED BY REPRESENTATIVE VERN BUCHANAN

October 4, 2017
"IRS Reform: Challenges to Modernizing IT Infrastructure"

1. Is the Internal Revenue Service (IRS) Information Technology (IT) division properly placed within the IRS and does it have the tools necessary to properly weigh in on IT-dependent decision making?

   Answer: The IRS IT division has the tools necessary to properly weigh in on IT-dependent decisions. The IRS CIO and senior functional management (IRS Senior Executive Team and the IRS Commissioner) work together to make key corporate decisions.

2. The Federal Information Technology Acquisition Reform Act (FITARA) was intended to empower agency Chief Information Officers and ensure greater oversight on a regular basis of major IT investments.

   a. Why do you believe that providing greater roles for CIOs in major IT decisions is important?

   Answer: It is important for the CIOs to be involved in major IT decisions because the CIO is ultimately going to be key in providing resources and managing/delivering programs and IT projects and investments. CIO involvement in all major IT decisions also ensures accountability for delivering programs and IT projects and investments.

   b. In the case of the IRS, do you believe that the IRS CIO has all of the powers that she needs to ensure that IRS IT is well managed and runs efficiently?

   Answer: The Treasury Inspector General for Tax Administration (TIGTA) believes the IRS CIO has the authority needed to run an effective and efficient program.

   c. Is the IRS undertaking its review of its major IT investments in a meaningful way? Has it led to improvements? If not, what else is needed?

   Answer: The IRS is undertaking a substantive review of its IT investments. While FITARA is directed at the agency level, i.e., (and the IRS is not a covered agency, the

IRS is in the process of implementing all of its FITARA-related responsibilities delegated by the Department of the Treasury (Treasury), including reviewing the IRS's major IT investments. In addition, the Treasury and the IRS already have an integrated Capital Planning and Investment Control process which has made the IRS's implementation of its FITARA-related responsibilities easier. As an audit is currently in process, TIGTA does not have a definitive answer about improvements and what else may be needed. TIGTA plans to issue a report during the third quarter of Fiscal Year 2018.

3. *Enterprise Case Management (ECM) Program –*

   a. Why did it take the IRS 18 months to determine that the ECM system being procured would not meet IRS needs?

   Answer: The IRS did not properly determine a complete set of requirements prior to starting the ECM Program. The IRS also did not perform a full evaluation of the software's ability to meet requirements prior to starting the ECM project. TIGTA is currently auditing the ECM Program and will be issuing a report during the second quarter of Fiscal Year 2018.

   b. How is the IRS able to procure IT solutions such as an enterprise case management system or an enterprise email system that later are determined to not meet its own needs?

   Answer: In general, this occurred because the IRS did not follow its established guidance and procedures. If the IRS had followed its established guidance and procedures, it would have already performed the steps it is now taking to determine the software(s) that will sufficiently meet its requirements for an enterprise case management system.

   c. Are these a violation of the IRS' s own internal policies and procedures?

   Answer: Yes, generally the IRS did not follow its own internal policies and procedures for developing requirements and determining the proper software(s) to meet those requirements.

   d. What steps has the IRS taken and what safeguards has it put in place to ensure situations such as this do not occur again?

   Answer: The IRS is now performing the process it should have performed at the beginning of the ECM Program to fully determine requirements and scope, and is evaluating available commercial off-the-shelf products. No new safeguards were put in place.

   e. What additional steps could be taken to further ensure that this does not occur again?

Answer: The IRS CIO should ensure that the IT division effectively follows its well-defined and established procedures and processes for the development of new IT projects and investments.

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BRANDON CASEY,
MINORITY CHIEF OF STAFF

November 15, 2017

Mr. David Powner
Director, IT Management Issues
Government Accountability Office
441 G St. NW
Washington, DC 20548

Dear Mr. Powner:

Thank you for your testimony before the Committee on Ways and Means at the October 4, 2017 Oversight Subcommittee hearing entitled "IRS Reform: Challenges to Modernizing IT Infrastructure." In order to complete our hearing record, we would appreciate your responses to the following questions:

1. How can the American Technology Council and the Office of American Innovation be leveraged to help the Internal Revenue Service (IRS) with its modernization efforts?
2. Is the IRS Information Technology (IT) division properly placed within the IRS and does it have the tools necessary to properly weigh in on IT-dependent decision making?
3. The Federal Information Technology Acquisition Reform Act was intended to empower agency Chief Information Officers (CIOs) and ensure greater oversight on a regular basis of major IT investments.
    a. Why do you believe that providing greater roles for CIOs in major IT decisions is important?
    b. In the case of the IRS, do you believe that the IRS CIO has all of the powers she needs to ensure that IRS IT is well-managed and runs efficiently?
    c. Is the IRS undertaking its review of its major IT investments in a meaningful way? Has it led to improvements? If not, what else is needed?

Sincerely,

VERN BUCHANAN
Chairman
Subcommittee on Oversight

GAO U.S. GOVERNMENT ACCOUNTABILITY OFFICE
441 G St. N.W.
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December 13, 2017

Vern Buchanan
Chairman
Subcommittee on Oversight
Committee on Ways and Means
House of Representatives

Subject: GAO Response to Post-Hearing Questions on the Internal Revenue Service's Information Technology Modernization

Dear Chairman Buchanan:

It was a pleasure to appear before your subcommittee on October 4, 2017, to discuss the Internal Revenue Service's (IRS) information technology (IT) modernization efforts. This letter responds to a request that I provide answers to post-hearing questions for the record. The questions, along with my responses, follow.

1. **How can the American Technology Council (ATC) and the Office of American Innovation (OAI) be leveraged to help the Internal Revenue Service (IRS) with its modernization efforts?**

   IRS can leverage the ATC and OAI by seeking their assistance in addressing the challenges it is facing in modernizing IT and, in particular, in modernizing its Individual Master File. The Individual Master File is the system for processing individual taxpayer account data, for which IRS has been undertaking a complex modernization effort to, among other things, convert the legacy assembly language code[1] in which it is written to a modern programming language. Given that ATC's mission is to help modernize federal agency IT and OAI's mission is to make recommendations to the President on policies and plans that improve federal government operations and services, both groups could play a significant role in assisting the IRS. The attention provided to the IRS's modernization effort by

[1]Assembly language code is a computer language initially used in the 1950s that is typically tied to the hardware for which it was developed; it has become difficult to code and maintain.

federal officials of the stature of these groups' members could potentially lead to significantly improved outcomes.[2]

2. Is the IRS Information Technology (IT) division properly placed within the IRS and does it have the tools necessary to properly weigh in on IT-dependent decision making?

IRS's Chief Information Officer (CIO) reports to the Deputy Commissioner for Operations Support, which positions the CIO and the IT organization to weigh in on IT decisions. This placement is consistent with the controls that are specified in the Office of Management and Budget's (OMB) guidance for implementing the provisions commonly referred to as the Federal Information Technology Acquisition Reform Act (or FITARA)[3] which are critical to enhancing the CIO authorities specified in the law.[4] The law requires the heads of covered executive branch agencies[5] to ensure that the CIO has a significant role in the decision-making process for IT budgeting, and in the management, governance, and oversight processes related to IT.[6]

Over the years, IRS has improved the tools it needs to weigh in on decision-making, but there are still opportunities for improvement. Specifically, in 1995, we identified significant management and technical weaknesses with the agency's business systems modernization program, which led us to include the program on GAO's high-risk list. Through the years, IRS took action to address the weaknesses we identified. For example, in 2007, the agency developed policies, procedures, and tools for developing and managing project requirements.[7] As a result of its actions, we removed the business systems modernization program from the high-risk list in 2013. Nevertheless, as we testified before you on October 4, 2017, we have

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[2]The ATC is chaired by the President and includes the heads of several departments and agencies as well as the Director of the Office of Management and Budget and the Federal Chief Information Officer. The OAI includes several Senior Advisors and Special Assistants to the President.

[3]In December 2014, Congress enacted IT acquisition reform legislation (commonly referred to as the Federal Information Technology Acquisition Reform Act, or FITARA) as part of the Carl Levin and Howard P. 'Buck' McKeon National Defense Authorization Act for Fiscal Year 2015, Pub. L. No. 113-291, div. A, title VIII, subtitle D, 128 Stat. 3292, 3438-3450 (Dec. 19, 2014). The law applies to covered agency CIOs and not directly to CIOs of the agency's components or bureaus.

[4]OMB, Management and Oversight of Federal Information Technology, Memorandum M-15-14 (Washington, D.C.: June 10, 2015).

[5] The 24 agencies covered by FITARA are the Departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, Housing and Urban Development, the interior, Justice, Labor, State, Transportation, the Treasury, and Veterans Affairs; and the Environmental Protection Agency; National Aeronautics and Space Administration; Agency for International Development; General Services Administration; National Science Foundation; Nuclear Regulatory Commission; Office of Personnel Management; Small Business Administration; and Social Security Administration.

[6]The Department of Defense is exempt from these provisions of the law.

[7]GAO, *High-Risk Series: An Update,* GAO-13-283 (Washington, D.C.: Feb. 14, 2013).

identified opportunities for IRS to improve the way it manages its acquisitions and operational investments.

3. The Federal Information Technology Acquisition Reform Act was intended to empower agency Chief Information Officers (CIOs) and ensure greater oversight on a regular basis of major IT investments.

a. Why do you believe that providing greater roles for CIOs in major IT decisions is important?

We have previously reported that the federal government's investments in IT have too often resulted in significant cost overruns, schedule delays, and questionable mission-related achievements, due to, among other things, ineffective executive-level governance and oversight provided by CIOs.[8] Providing CIOs with greater authorities for major IT decisions would, therefore, position them to more effectively manage programs and contribute to improved outcomes. This is consistent with the provisions of FITARA.

b. In the case of the IRS, do you believe that the IRS CIO has all of the powers she needs to ensure that IRS IT is well-managed and runs efficiently?

As previously mentioned, we believe that IRS's CIO is positioned in the organization to have the authority to effectively manage IRS IT, but we have not specifically determined the extent to which the CIO is exercising her authority. Nevertheless, as we recently testified before you, over the past several years, we have identified numerous opportunities to improve the way IRS manages its IT acquisitions and operational (i.e., legacy) systems.[9] For example, in June 2016, we reported that the agency had developed a structured process for allocating funding to its operations activities, consistent with best practices; however, the agency did not have a similarly structured process for prioritizing modernization activities to which it allocated hundreds of millions of dollars for fiscal year 2016.[10] Accordingly, we recommended that IRS establish, document, and implement policies and procedures for prioritizing modernization activities. IRS agreed with, and has efforts underway, to address the recommendation.

In the same report, we noted that IRS could improve the accuracy of reported performance information for key development investments in order to provide Congress and other external parties with pertinent information about the delivery of

[8]See for example, GAO, *Information Technology: Further Implementation of FITARA Related Recommendations Is Needed to Better Manage Acquisitions and Operations,* GAO-18-234T (Washington, D.C.: Nov. 15, 2017).

[9]GAO, *Information Technology: Management Attention Is Needed to Successfully Modernize Tax Processing Systems,* GAO-18-153T (Washington, D.C.: Oct. 4, 2017).

[10]GAO, *Information Technology: IRS Needs to Improve Its Processes for Prioritizing and Reporting Performance of Investments,* GAO-16-545 (Washington, D.C.: June 29, 2016).

these investments. We recommended that the agency take steps to improve reported investment performance information. IRS agreed with the recommendation and has efforts underway to address it.

Further, in a May 2016 report on legacy IT systems across the federal government, we noted that IRS used assembly language code to program key legacy systems, including for its Individual Master File.[11] We noted that, although IRS has been working to replace the Individual Master File, the agency did not have time frames for its modernization or replacement. We recommended that these time frames be established. At your October 4, 2017, hearing, IRS's CIO testified that it would take approximately 5 years, 50 to 60 employees and associated funding, direct hire authority, and approximately $85 million each year to replace a core component of the Individual Master File.

c. Is the IRS undertaking its review of its major IT investments in a meaningful way? Has it led to improvements? If not, what else is needed?

While we have not performed any recent studies of IRS's process for reviewing its major IT investments, as mentioned above, in June 2016, we reported that the agency had developed a structured process for prioritizing activities associated with its investments in operations and maintenance which was consistent with best practices.[12] For example, we noted that the process, among other things, addressed (1) prioritization and comparison of IT assets against each other and (2) criteria for making selection and prioritization decisions. However, we reported that IRS did not have a similar process for prioritizing its modernization activities. In addition, as previously noted, and as we testified before you on October 4, 2017, we have identified opportunities for the agency to improve its management of both its acquisitions and operational systems. Continued attention to implementing our recommendations is vital to helping IRS ensure the effective and efficient management of its efforts to modernize its aging systems and ensure its multibillion dollar investment in IT is meeting the needs of the agency.

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[11]Assembly language code is a computer language initially used in the 1950s that is typically tied to the hardware for which it was developed; it has become difficult to code and maintain.

[12]GAO-16-545.

In preparing this correspondence, we relied primarily on our prior reports that have addressed IRS's IT management.[13] Should you or your staff have any questions on matters discussed in this letter, please contact me at (202) 512-9286, or Sabine Paul, Assistant Director, at (202) 512-6374. We can also be reached by e-mail at pownerd@gao.gov or pauls@gao.gov, respectively.

Sincerely yours,

David A. Powner
Director, Information Technology Management Issues

[13]See for example, GAO, *Information Technology: IRS Needs to Improve Its Process for Prioritizing and Reporting Performance of Investments*, GAO-16-545 (Washington, D.C.: June 29, 2016); and *Information Technology: Federal Agencies Need to Address Aging Legacy Systems*, GAO-16-468 (Washington, D.C.: May 25, 2016).

[Public Submissions for the Record follow:]

CITIZENS AGAINST GOVERNMENT WASTE

Thomas A. Schatz, *President*
1100 Connecticut Ave., N.W., Suite 650
Washington, D.C. 20036
cagw.org

October 3, 2017

The Honorable Vern Buchanan
Chairman
Committee on Ways and Means
Subcommittee on Oversight
1102 Longworth House Office Building
Washington, D.C. 20515

The Honorable John Lewis
Ranking Member
Committee on Ways and Means
Subcommittee on Oversight
1102 Longworth House Office Building
Washington, D.C. 20515

Dear Chairman Buchanan and Ranking Member Lewis,

On behalf of the more than one million members and supporters of Citizens Against Government Waste (CAGW), I submit the following letter for the record. Your efforts to address issues of identity theft and fraud at the Internal Revenue Service (IRS) are appreciated, and I thank you for the opportunity to provide input into the committee's work.

In 1994, the IRS created the Electronic Fraud Detection System (EFDS), which was intended to identify fraudulent tax returns and maximize revenue protection. In 2009, the IRS began developing the Return Review Program (RRP) to replace EFDS. In 2010, the IRS declared EFDS "too risky to maintain, upgrade, or operate beyond 2015."[1] Despite the recognized need to unplug the EFDS and get the RRP in place in a timely manner, the program is still in development, and is now estimated to be completed in 2022.

Anyone familiar with the long history of failed federal IT investments will not be surprised to learn that the RRP has had substantial cost overruns and produced inadequate results. A February 2015 Government Accountability Office report noted that the RRP had exceeded its initial budget by $86.5 million. According to a December 11, 2015 Treasury Inspector General for Tax Administration (TIGTA) report, during a two-year pilot program, the RRP missed 54,175 fraudulent returns totaling $313 million.[2]

Federal Acquisition Regulation 12.101 requires agencies to "conduct market research to determine whether commercial items or non-developmental items are available that could meet the agency's requirements," and use them when available. In other words, if it is available in the private sector, also known as "commercial off-the-shelf," or COTS, it should be used. A July 26, 2013 TIGTA report found

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[1] Taxpayer Advocate Service, "Fiscal Year 2014 Objectives," Internal Revenue Service, June 30, 2014, https://taxpayeradvocate.irs.gov/userfiles/file/FullReport/Implementation-of-the-IRS%E2%80%99s-Return-Review-Program-Is-at-Extreme-Risk-Which-Could-Cause-Significant-Harm-and-Cost.pdf

[2] Michael E. McKenney, "Continued Refinement of the Return Review Program Identity Theft Detection Models is Needed to Increase Detection," Treasury Inspector General for Tax Administration, December 11, 2015, 2016-40-008, https://www.treasury.gov/tigta/auditreports/2016reports/201640008fr.pdf

that commercial software products were not fully considered before beginning development of the RRP system.[3] A September 29, 2015 TIGTA report estimated that the operation and maintenance of running EFDS while RRP is being developed will cost taxpayers $18.2 million annually.[4] Furthermore, while the IRS civil division continues to invest in the underperforming RRP, the IRS criminal division is already utilizing a private sector platform for its anti-fraud efforts. The civil division should drop its government-created software and join the criminal division in using proven private sector solutions.

There is significant room for technological improvements at the IRS. CAGW thanks you for your efforts to address these concerns. If you have any questions regarding these comments, please feel free to contact myself or CAGW Associate of Policy and Government Affairs Peter Klensch at (202)-467-5300.

Sincerely,

Tom Schatz

President, CAGW

[3] Michael E. McKenney, "Improvements are Needed to Ensure Successful Development and System Integration for the Return Review Program," Treasury Inspector General for Tax Administration, July 26, 2013, 2013-20-063, https://www.treasury.gov/tigta/auditreports/2013reports/201320063fr.html

[4] Michael E. McKenney, "Review of the Electronic Fraud Detection System," Treasury Inspector General for Tax Administration, September 29, 2015, 2015-20-093, https://www.treasury.gov/tigta/auditreports/2015reports/201520093fr.pdf

Anthony M. Reardon

National President

National Treasury Employees Union

Statement for the Record

For

House Ways and Means Subcommittee on Oversight

"Internal Revenue Service's (IRS) efforts to modernize its information technology (IT) infrastructure"

October 4, 2017

1750 H Street, N.W. • Washington, D.C. 20006 • (202) 572-5500

Chairman Buchanan, Ranking Member Lewis and distinguished members of the subcommittee, I would like to thank you for allowing me to provide comments on the Internal Revenue Service's (IRS) efforts to modernize its information technology (IT) infrastructure. As President of the National Treasury Employees Union (NTEU), I have the honor of representing over 150,000 federal workers in 31 agencies, including the men and women at the IRS.

Mr. Chairman, according to TIGTA, 64% of IRS IT hardware systems are aged and out of warranty and 32% of software products are two or more releases behind the industry standard, with 15% more than four releases behind. Furthermore, every year, another 20% of hardware moves to a status of aged beyond the manufacturers recommended useful life, if not replaced. In a September 2017 report, TIGTA specifically noted that "aged information technology hardware still in use introduces unnecessary risks…aged hardware failures may have also had a negative effect on IRS employee productivity, security of taxpayer information, and customer service." As long as the IRS struggles to fund it basic operations, its employees without adequate resources, will continue to struggle to perform their duties for the public.

The risk to the American tax system of IRS' aging IT infrastructure cannot be overstated. As the IRS Fiscal Year (FY) 2018 budget request notes, "this aging infrastructure puts the American tax system at risk of failure. Such conditions introduce security risks, excessive system downtime, systems and hardware no longer supported by the vendor, and incompatibilities across systems and programs."

Despite the clear threat posed by an aging IT infrastructure, insufficient funding in recent years has forced the IRS to defer investing in or upgrading its existing aged IT infrastructure. As you know, since FY 2010, IRS funding has been cut by almost $1 billion, or nearly a 20 percent reduction on an inflation adjusted basis.

In addition, over the last several years the IRS has had to implement a number of significant legislative mandates, nearly all of which came with no additional funding which has limited its ability to replace its aged IT hardware inventory. According to TIGTA, between FY 2012 and FY 2016, the IRS Information Technology organization, responsible for delivering information technology services and solutions that drive effective tax administration to ensure public confidence, allocated more than $1.3 billion of its funds alone to implement several unfunded legislative requirements, including the Affordable Care Act (ACA) and the Health Coverage Tax Credit (HCTC).

The IRS was tasked with a number of other unfunded mandates from congress which further required the IRS to divert limited IRS resources to implement, including the Foreign Account Tax Compliance Act (FACTA), the Achieving a Better Life Experience (ABLE) Act, reauthorization of the seriously delinquent debt certification program and the 2015 Protecting Americans from Tax Hikes (PATH) Act.

NTEU was disappointed to see the FY 2018 Omnibus Appropriations Act recently passed by the House would further reduce funding for the IRS by more than $155 million, which will

further impede its ability to address its aging IT infrastructure and make necessary software upgrades that are critical to ensuring the integrity of our tax system.

In addition to the risk posed by an aging IT infrastructure, I would be remiss if I didn't mention the risk to our tax system posed by insufficient staffing levels across the service. Funding reductions since FY 2010 have forced the Service to reduce the total number of full-time employees by approximately 18,000 across every state in the country, greatly hampering IRS' ability to provide America's taxpayers top quality service and enforce our nation's tax laws.

The drastic cuts to IRS' budget come at a time when the IRS workforce is already facing a dramatically increasing workload with staffing levels down almost 20 percent below what they were just 6 years ago. In 2010, the IRS had 92,148 full-time employees to administer tax laws and process 230 million tax returns. By the close of 2016, that number had fallen to 74,151 to administer a more complicated tax code and process 244 million much more complex tax returns and other forms.

NTEU was disappointed that the Administration's FY 2018 budget calls for reducing IRS funding by an additional $260 million below the FY 2017 enacted level and reducing overall staffing by more than 4,200. NTEU knows any further reductions in funding and staffing will further exacerbate the adverse impact previous cuts have had on IRS' ability to provide taxpayers with the service they need and to enforce our nation's tax laws. We believe that in order to continue to make improvements in taxpayer services while handling a growing workload and increasing collections, it is imperative to reverse the severe cuts in IRS staffing levels and begin providing adequate resources to meet these challenges. With the future workload only expected to continue to rise, the IRS will be under a great deal of pressure to improve customer service standards while simultaneously enforcing the nation's tax laws.

Impact of Inadequate Funding on Taxpayer Services

Mr. Chairman, providing quality taxpayer service is a critical component of the IRS' efforts to help the taxpaying public understand its federal tax obligations while making it easier to comply with the tax system. Unfortunately, the IRS' ability to provide excellent taxpayer service has been severely challenged due to reduced funding in recent years. Since FY 2010, overall funding for the IRS has declined by more than $900 million, while the number of individual taxpayers has increased by 10 million, or more than 6 percent. These reductions have resulted in a reduction in the number of employees assigned to answer telephone calls from 9,400 in 2010 to 6,200 in 2015, a 34% drop.

In a letter to Congress following the close of the 2015 filing season, the IRS highlighted some of the adverse impacts these reductions had on its' ability to deliver taxpayer services during the filing season. These include:

- A reduction in the percentage of callers seeking live assistance who received it (telephone level of service) to 38 percent—down from 74 percent in FY 2010.
- Taxpayers waited about 23 minutes on average for an IRS representative to get on the line, and more than 60 percent of calls were never answered. This

represents a sharp decline from 2010, when the IRS answered three-quarters of calls and had an average wait time of just under 11 minutes.
•The IRS was not able to answer any tax-law questions except "basic" ones during the filing season, and now that the filing season is over, it will not answer any tax-law questions at all, leaving the roughly 15 million taxpayers who file later in the year unable to get answers to their questions by calling or visiting IRS offices.
•The IRS historically has prepared tax returns for taxpayers seeking its help, particularly for low income, elderly, and disabled taxpayers. Eleven years ago, it prepared some 476,000 returns. That number declined significantly over the past decade, and in 2014 the IRS announced it would no longer prepare returns at all.

Additionally, because funding reductions forced the IRS to shorten the period of employment for their seasonal employees who help answer taxpayer correspondence, the IRS' inventory of correspondence from taxpayers in 2014 and 2015 grew significantly above what it normally would have been to more than 900,000.

For FY 2016 and FY 2017, the IRS was provided with $290 million to improve the customer service representative level of service (LOS) rate, among other things. With this funding, the IRS was able to hire additional temporary telephone assistors which drastically reduced taxpayer wait times and helped the IRS raise the phone level of service from 38 percent during the 2015 filing season to 72 percent during the 2016 filing season and to 79 percent during the 2017 filing season. The additional funding also freed up more resources to help the IRS reduce the correspondence inventory to 690,000 by the end of FY 2016, a drastic reduction from just two years prior.

Despite the clear evidence that providing the IRS with the $290 million in targeted funding enabled them to drastically reduce taxpayer wait times and improve the phone level of service during the 2016 and 2017 filing seasons, neither the Administration's FY 2018 budget request nor the House passed FY 2018 Omnibus bill include this specific funding. In fact, the Administration's request actually calls for **reducing taxpayer services seasonal staffing costs** by $239 million and overall taxpayer services staffing by almost 2,200 FTEs. The Administration's request seems to acknowledge the adverse impact that these reductions will have on IRS' ability to provide quality service by noting the target level of service for all of FY 2018 is just 39 percent, a drop of 25 percent from the FY 2017 level. It is clear that the Administration's proposed reductions in funding and staffing for taxpayer services will simply reverse the gains made in recent years and leave the IRS unable to provide taxpayers with the assistance they need.

The importance of providing taxpayers with timely assistance over the phone or in person is also of particular importance for victims of identity theft and other types of tax refund fraud. These cases are extremely complex cases to resolve, frequently touching on multiple issues and multiple tax years, and the process of resolving these cases can be very frustrating for victims. This same $290 million was also utilized to safeguard taxpayer data, enhance cyber security, and improve the identification and prevention of ID theft and refund fraud.

While the IRS has made considerable progress in this area, additional work remains. Fighting identity theft is an ongoing battle as identity thieves continue to create new ways of stealing personal information and using it for their gain. Therefore, it is critical that the IRS has the resources and staffing necessary to prevent refund fraud from occurring in the first place, to investigate identity theft-related crimes when they do occur, and to help taxpayers who have been victimized by identity thieves as quickly as possible.

Mr. Chairman, it is clear that drastic funding reductions in recent years have seriously eroded the IRS' ability to provide taxpayers with the services they need. Without additional funding, taxpayers will continue experiencing a degradation of services, including longer wait times to receive assistance over the telephone, increasing correspondence inventories, including letters from victims of identity theft and taxpayers seeking to resolve issues with taxes due or looking to set up payment plans.

Impact on Enforcement & Efforts to Reduce the Federal Deficit

NTEU believes a strong enforcement program that respects taxpayer rights, and minimizes taxpayer burden, plays a critical role in IRS' efforts to enhance voluntary compliance, combat the rising incidence of identity theft, and reduce the tax gap.

Unfortunately, funding reductions in recent years are undermining the Service's ability to maximize taxpayer compliance, prevent tax evasion and reduce the deficit. The adverse impact of insufficient funding on IRS' capacity to collect revenue critical to reducing the federal deficit is clear. In FY 2016, operating on a budget of $11.2 billion, the IRS collected $3.3 trillion, roughly 93 percent of federal government receipts. According to the IRS, every dollar invested in IRS enforcement programs generates roughly $6 in increased revenues, but reduced funding for enforcement programs in recent years has led to a decline in enforcement revenue since FY 2007. In FY 2016, IRS enforcement activities brought in $54.3 billion, down almost $5 billion from the $59.2 billion of FY 2007.

The reduction in revenue can be partly attributed to a reduction in the total number of IRS enforcement personnel, including revenue officers and revenue agents – two groups critical to efforts to reduce the federal budget deficit. Since FY 2010, the total number of revenue officers and revenue agents fell more than 32 percent from 20,510 to 13,791, a reduction of almost 6,800 positions.

Without sufficient staffing to effectively enforce the law to ensure compliance with tax responsibilities and combat fraud, our voluntary tax compliance system is at risk. And as the IRS Commissioner has repeatedly noted, a simple one-percent decline in the compliance rate translates into $30 billion in lost revenue for the government.

Sufficient enforcement staffing is also critical if the IRS is to make further progress on closing the tax gap, which is the amount of tax owed by taxpayers that is not paid on time. According to the IRS, the amount of tax not timely paid is $450 billion, translating to a noncompliance rate of almost 17 percent.

While the tax gap can never be completely eliminated, even an incremental reduction in the amount of unpaid taxes would provide critical resources for the federal government. At a time when Congress is debating painful choices of program cuts and tax increases to address the federal budget deficit, NTEU believes it makes sense to invest in one of the most effective deficit reduction tools: collecting revenue that is owed, but hasn't yet been paid.

Despite the clear evidence that reductions to enforcement funding and staffing have had on the Service's efforts to generate revenue and to enforce our nation's tax laws, NTEU was disappointed to see that both the Administration's FY 2018 budget request and the recently House passed FY 2018 Omnibus legislation would slash funding for enforcement by more than $50 million from the current level, and could result in the loss of more than 2,100 enforcement FTEs. With enforcement staffing already down by more than 30 percent since FY 2010, any additional staffing reductions will simply further reduce IRS' ability to enforce our nation's tax laws, maximize taxpayer compliance, combat identity theft and other types of fraud, and generate revenue collection that is critical to reducing the federal deficit.

Mr. Chairman, the adverse impact of recent funding cuts on the IRS' ability to provide taxpayers with the service they need and enforce our nation's tax laws is clear. NTEU strongly believes that only by providing the IRS with additional resources will the IRS be able to meet the rising workload level, stabilize and strengthen tax compliance and customer service programs, and allow the Service to address the federal deficit in a serious and meaningful way.

CONCLUSION

Mr. Chairman, thank you for the opportunity to provide NTEU's views on the IRS' efforts to modernize its information technology (IT) infrastructure. We believe that in order to ensure the IRS is able to address its aging IT infrastructure, it must be provided with the necessary resources. Furthermore, it is important that such resources are provided as part of a multi-year investment that will allow the IRS to make continuous and ongoing upgrades as more of its legacy hardware becomes obsolete.

It is also important that as congress continues tasking the IRS with new responsibilities, it provide sufficient funding to allow the Service to meet its core taxpayer service and enforcement missions so that the IRS is not forced to divert much of their limited resources from their IT budget as has happened in recent years.