

LR #1 **IT MODERNIZATION: Provide the IRS with Additional Dedicated, Multi-Year Funding to Replace Its Antiquated Core IT Systems Pursuant to a Plan that Sets Forth Specific Goals and Metrics and Is Evaluated Annually by an Independent Third Party**

TAXPAYER RIGHTS IMPACTED¹

- *The Right to Be Informed*
- *The Right to Quality Service*
- *The Right to Pay No More Than the Correct Amount of Tax*
- *The Right to Challenge the Position of the Internal Revenue Service and Be Heard*
- *The Right to Appeal a Decision of the Internal Revenue Service in an Independent Forum*
- *The Right to Finality*
- *The Right to Privacy*
- *The Right to Confidentiality*
- *The Right to Retain Representation*
- *The Right to a Fair and Just Tax System*

PROBLEM

The IRS is the Accounts Receivable Department of the Federal government. In fiscal year (FY) 2018, the IRS collected nearly \$3.5 trillion on a budget of \$11.43 billion.² Put differently, for every dollar the IRS received in appropriated funds, it collected about \$300 in federal revenue. Both because the fiscal health of the Federal government depends on the IRS's collection capability and because the taxpayers who pay our nation's bills deserve fair treatment, it is critical that the IRS has the resources to do its job effectively and efficiently.

The IRS does not have adequate information technology (IT) systems to do its job effectively and efficiently. The IRS's core IT systems are among the oldest in the Federal government, limiting the agency's capabilities in significant ways. Partly due to historic poor planning and execution and partly due to lack of funding, the IRS has been unable to replace its antiquated systems. Every year, instead, it layers more and more smaller systems and applications onto its core systems. By analogy, the IRS has erected a 50-story office building on top of a creaky, 60-year-old foundation, and it is adding a few more floors every year. There are inherent limitations on the functionality of a 60-year-old infrastructure, and at some point, the entire edifice is likely to collapse.

1 See Taxpayer Bill of Rights (TBOR), www.TaxpayerAdvocate.irs.gov/taxpayer-rights. The rights contained in the TBOR are also codified in the Internal Revenue Code. See IRC § 7803(a)(3).

2 See Government Accountability Office (GAO), GAO 19-150, Financial Audit: IRS's Fiscal Year (FY) 2018 and 2017 Financial Audits 23 (Nov. 2018) (showing revenue collections); H.R. Rep. No. 115-792, at 14 (2018) (showing appropriation levels).

According to the Government Accountability Office (GAO), the IRS's Individual Master File (IMF) and Business Master File (BMF) systems date to about 1960 and are the two oldest IT systems in the federal government among the major IT systems it surveyed.³

The GAO describes the IMF as follows:

[The IMF] is the authoritative data source of individual taxpayer accounts. Within IMF, 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.

IMF was written in an outdated assembly language code and operates on a 2010 IBM z196/2817-m32 mainframe. This has resulted in difficulty delivering technical capabilities addressing identity theft and refund fraud, among other things. In addition, there is a risk of inaccuracies and system failures due to complexity of managing dozens of systems synchronizing individual taxpayer data across multiple data files and databases, limitations in meeting normal financial requirements and security controls, and keeping pace with modern financial institutions.⁴

It bears emphasis that “[v]irtually all IRS information system applications and processes depend on output, directly or indirectly, from [the IMF].” IRS IT leaders regularly point out that there is an important distinction between modernizing IT capabilities and modernizing IT core systems. To extend the above analogy, hundreds of IRS systems and applications are resting on the foundation of a 60-year-old office building. Because the building has not yet collapsed, there is an implicit assumption that more floors can be added indefinitely. They cannot.

On April 17, 2018, the filing deadline for 2017 federal income tax returns, an IRS systems crash prevented taxpayers from electronically submitting their tax returns and payments. The crash was attributed to a malfunction in an 18-month-old piece of hardware supporting the IMF—a system that requires more and more support every year.⁵ The GAO's director of IT management warned in congressional testimony shortly before the 2018 filing season began that “relying on these antiquated systems for our nation's primary source of revenue is highly risky, meaning the chance of having a failure during the filing season is continually increasing.”⁶ The damage from the crash was limited because the IRS gave taxpayers an extra day to file and pay. However, the crash had the effect of creating significant confusion and anxiety among taxpayers and their preparers, and it served as an important wake-up call and a warning of future problems if the IRS is unable to replace its legacy systems soon.

Since 2009, the IRS has been taking steps to replace the IMF with a system known as the Customer Account Data Engine 2 (CADE 2). Its goal is to transition the IMF's functionality and data to CADE 2 and to retire the IMF. To date, however, the IRS has not been able to complete this transition.

3 GAO, GAO-16-468, *Information Technology: Federal Agencies Need to Address Aging Legacy Systems* 28-30 (May 2016).

4 *Id.* at 53.

5 See Aaron Boyd & Frank Konkel, *IRS' 60-Year-Old IT System Failed on Tax Day Due to New Hardware*, Nextgov (Apr. 19, 2018) (citing an IRS official), <https://www.nextgov.com/it-modernization/2018/04/irs-60-year-old-it-system-failed-tax-day-due-new-hardware/147598>.

6 See Frank Konkel, *The IRS System Processing Your Taxes is Almost 60 Years Old*, Nextgov (Mar. 19, 2018) (quoting David Powner, GAO's director of Information Technology Management Issues), <https://www.nextgov.com/it-modernization/2018/03/irs-system-processing-your-taxes-almost-60-years-old/146770>.

Moreover, it has not been able to make comparable progress in retiring the BMF system (which is the authoritative source of individual *business* taxpayer accounts) or several other key legacy systems.

Apart from the risk of catastrophic collapse, the absence of modern IT systems prevents the IRS from doing its job as effectively as it could on a daily basis. The result is that taxpayers are harmed, practitioners are inconvenienced, and the IRS is hampered in delivering on its mission to provide U.S. taxpayers top quality service and apply the tax law with integrity and fairness to all.

EXAMPLES

Customer Callback. Over the past decade, the IRS has received an average of more than 100 million telephone calls each year.⁷ We report regularly on IRS telephone performance, including the percentage of calls the IRS answers and the average time taxpayers spend waiting on hold. Performance has varied widely, with the IRS reporting an annual “Level of Service” on its Accounts Management lines from as low as 38 percent in FY 2015 to as high as 77 percent in FY 2017. The average length of time taxpayers spend waiting on hold has also varied considerably, from as few as seven minutes in FY 2018 to as many as 30 minutes in FY 2015.⁸

Most telephone call centers maintained by large businesses and federal agencies, including the Social Security Administration and the Department of Veterans Affairs, offer a “customer callback” feature. That is, in lieu of waiting on hold for long periods of time, callers may elect to receive a call back when the next customer service representative is available. Despite the large volume of calls it receives, the IRS still does not have this technology.⁹

In the President’s FY 2015 and FY 2016 budgets, the IRS proposed adding customer callback and estimated it would cost about \$3.3 million to acquire the technology.¹⁰ In November 2015, however, Commissioner Koskinen said that although the customer callback technology itself would cost only about \$3.5 million, *the IRS had determined its phone system would need to be upgraded to be able to run the customer callback technology—and the upgrade would cost about \$45 million.*¹¹ We understand the IRS has finally decided to absorb the cost of implementing a customer callback feature. This is a very positive development for taxpayers and practitioners. However, the time, effort, and cost it has required to implement this feature illustrates the challenges the IRS consistently faces as it tries to modernize its capabilities based on antiquated technology platforms.

Case Management Systems. The IRS currently maintains approximately 60 major case management systems. The systems are distinct, often requiring an IRS employee seeking information about a taxpayer to conduct searches on multiple systems. This results in poor customer service, because when a taxpayer or practitioner calls the IRS with an account question, the customer service representative who answers the phone often does not have access to the system on which the relevant taxpayer information

7 IRS, Joint Operations Center, *Snapshot Reports: Enterprise Snapshot* (final week of each fiscal year for FY 2009 through FY 2018).

8 *Id.* For additional discussion regarding IRS telephone service, see National Taxpayer Advocate 2017 Annual Report to Congress 22-35 (Most Serious Problem: Telephones: *The IRS Needs to Modernize the Way It Serves Taxpayers Over the Telephone, Which Should Become an Essential Part of an Omnichannel Customer Experience*).

9 *Id.* at 31-32.

10 See IRS, Congressional Justification for Appropriations accompanying the President’s FY 2015 Budget at IRS-20 (2014); IRS, Congressional Justification for Appropriations accompanying the President’s FY 2016 Budget at IRS-22 (2015).

11 See Lisa Rein, *IRS Customer Service Will Get Even Worse This Tax Filing Season, Tax Chief Warns*, Washington Post.com, Nov. 3, 2015.

is stored. This imposes limits on IRS compliance activities for similar reasons. The IRS has been making plans to develop an integrated enterprise-wide case management system, so that IRS employees can see information from all 60 systems in a single search (with varying levels of “permissions” so that, for example, only employees with a need to know would be able to view certain information). However, the IRS has not yet had sufficient personnel or financial resources to develop and implement an integrated system. As a result, the inefficiencies of maintaining 60 separate systems continue to plague the agency.¹²

Online Taxpayer Accounts. In the IRS’s Future State plan and, more recently, in its FY 2018-2022 Strategic Plan, the IRS is placing significant emphasis on the development and use of online taxpayer accounts.¹³ Robust online accounts would, indeed, be very helpful to many taxpayers, who could view all of their account information online and, in many cases, submit account inquiries through their online accounts, much as they can do with online bank accounts. However, the technology limitations described above—most significantly, the absence of an integrated case management system—limit the IRS in making complete account information available to taxpayers. As a result, taxpayers accustomed to using online accounts with financial institutions and other vendors experience frustration, and more IRS employees are needed to answer phone calls and respond to correspondence about matters that many taxpayers would handle quickly and efficiently online if the functionality were available.

Online Practitioner Accounts. Taxpayer representatives, even more than taxpayers, would benefit enormously from online account access. While a typical taxpayer can go many years without having to contact the IRS with account questions, practitioners often have to contact IRS personnel multiple times a day. Hold times on the Practitioner Priority Service telephone line can be long,¹⁴ and hold times when practitioners must call the IRS’s compliance telephone lines can be even longer. Practitioners often charge their taxpayer-clients for the time they spend waiting on hold, increasing tax compliance costs, and for some inquiries—such as balance inquiries, requests for transcripts, or obtaining copies of correspondence—telephone calls are not nearly as effective as a robust online account.

Provision of Information About TAS to Taxpayers. Old technology prevents the IRS from doing things big and small. One specific example involves compliance with a requirement imposed by the IRS Restructuring and Reform Act of 1998 that the IRS include information about a taxpayer’s local TAS office in statutory notices of deficiency.¹⁵ TAS offices are aligned with taxpayer populations by ZIP code. It would seem like a relatively easy task for the IRS to program its systems to generate the address and telephone number of the local TAS office on statutory notices of deficiency based on the ZIP code of the taxpayer. The IRS currently uses approximately 20 versions of a statutory notice of deficiency, which vary based on which IRS function issues the notice and certain other factors, and the IRS is, indeed, able to include information about the local TAS office on most versions. However, it lacks the IT capability to include information about the local TAS office on other versions. As a result, IRS personnel must either manually place “stuffer” notices listing all TAS offices in the envelopes with certain statutory notices of deficiency or provide a single website address, thereby failing to identify

12 For additional discussion on IT challenges relating to the IRS’s case management systems, see National Taxpayer Advocate FY 2019 Objectives Report to Congress 47-51 (Area of Focus: *The IRS’s Enterprise Case Management Project Shows Promise, But to Achieve 21st Century Tax Administration, the IRS Needs an Overarching Information Technology Strategy with Proper Multi-Year Funding*).

13 See IRS Pub. 3744, Internal Revenue Service Strategic Plan FY 2018-2022, at 10-12 (rev. 4/2018).

14 Practitioner Priority Service (PPS) is a nationwide toll-free, account-related service for all types of tax practitioners. PPS serves tax practitioners as the first point of contact for assistance regarding account-related issues. For more information about PPS, see IRM 21.3.10, *Taxpayer Contacts Practitioner Priority Service (PPS)* (Sept. 17, 2018).

15 Pub. L. No. 105-206, § 1102(b), 112 Stat. 685, 703 (1998) (codified at IRC § 6212(a)).

which specific TAS office is aligned with the taxpayer's location and requiring IRS employees to perform work that should be fully automated.¹⁶

Identification of SSDI Recipients. In 2016, the Commissioner decided not to assign collection cases involving taxpayers who receive Social Security Disability Insurance (SSDI) to private collection agencies (PCAs) because SSDI recipients are, almost by definition, taxpayers who are in economic hardship and would be placed into “currently not collectible – hardship” status if the IRS were to perform a financial analysis. The IRS still has not implemented this decision. Although the IRS receives and processes Forms SSA-1099 with respect to SSDI recipients, the IRS system used to assign cases to PCAs cannot currently be programmed to pull information from the IRS system that houses Form 1099 information. Therefore, the IRS reports there is no practical way for it to exclude these cases.

RECOMMENDATION

Provide the IRS with additional dedicated, multi-year funding to replace its core legacy IT systems pursuant to a plan that sets forth specific goals and metrics and is evaluated annually by an independent third party.¹⁷

PRESENT LAW

The IRS receives its funding through annual appropriations acts.¹⁸ The IRS budget is divided into four accounts: Taxpayer Services, Enforcement, Operations Support, and Business Systems Modernization (BSM). The BSM account is the principal source of funding for replacing the IRS's core IT systems.

Funding for the BSM account has fluctuated considerably in recent years with Congress reducing BSM funding by 62 percent from FY 2017 (\$290 million) to FY 2018 (\$110 million). Even at the higher level, BSM funding constitutes just a small fraction of the IRS's overall budget, as shown in Figure 2.1.1:

16 For additional discussion of this issue, see Statutory Notices of Deficiency: *The IRS Fails to Clearly Convey Critical Information in Statutory Notices of Deficiency, Making It Difficult for Taxpayers to Understand and Exercise Their Rights, Thereby Diminishing Customer Service Quality, Eroding Voluntary Compliance, and Impeding Case Resolution*, *supra*.

17 The GAO has also recommended that the IRS modernize and replace legacy systems. See GAO-18-153T, *Information Technology: Management Attention Is Needed to Successfully Modernize Tax Processing Systems* 10 (Oct. 2017).

18 The IRS receives a relatively small amount of additional funds from charging user fees for certain services.

FIGURE 2.1.1, IRS Appropriations – FYs 2017–2019¹⁹

Fiscal Year	BSM Funding	Total IRS Funding	BSM as % of Total IRS Funding
2017	\$290 M	\$11.24 B	2.6%
2018	\$110 M	\$11.43 B	1.0%
2019 (House Bill)	\$200 M	\$11.62 B	1.7%
2019 (Senate Bill)	\$110 M	\$11.26 B	1.0%

Most IRS funding is required to be spent within the fiscal year for which it is appropriated, but the IRS is generally given up to three years to spend its BSM funding.

REASONS FOR CHANGE

IRS IT leaders regularly point out that there is an important distinction between modernizing IT capabilities and modernizing IT core systems. New applications generally can be added to existing systems, and in the short term, those applications are generally sufficient to accomplish their intended goal. But as the IRS’s former chief technology officer has emphasized in congressional testimony, the programming language and data structures of the IMF, BMF and other legacy systems “were built decades ago when computer infrastructure, such as computer memory and storage media, were tape-based, and computational machinery was extremely expensive.”²⁰

As a result, the former IRS chief technology officer said:

[W]e have upgraded the underlying hardware and operating systems of these legacy systems, while the application programming language and data structures have essentially remained static The situation is analogous to operating a 1960’s automobile with the original chassis, suspension and drive train, but with a more modern engine, satellite radio, and a GPS navigation system. It runs better than the original model but not nearly as efficiently as a system bought today.”²¹

As discussed above, the pervasive technology limitations the IRS faces stem from the age of its core systems. It is always cheaper and easier in the short run to apply a patch than to replace a core system, but patch upon patch is simply not sustainable for several reasons.

First, there are inherent limitations in using nearly 60-year-old information technology. The examples above identify some of them. Although the IRS is constantly developing new systems and applications to meet new needs, the static data structures and programming language impede their effectiveness. The former IRS chief technology officer put it this way: “The main challenge posed by our legacy

19 For FY 2017 IRS funding levels, see Consolidated Appropriations Act, 2017, Pub. L. No. 115-31, Division E, 131 Stat. 135, 331-334 (2017). For FY 2018 IRS funding levels, see Consolidated Appropriations Act, 2018, Pub. L. No. 115-141, Division E, 132 Stat. 348, 540-543 (2018). At this writing, the FY 2019 appropriations act that funds the Treasury Department has not been finalized. For House-proposed funding levels, see H.R. REP. No. 115-792, at 14 (2018) (accompanying H.R. 6258, which was subsequently incorporated into and passed by the House as H.R. 6147, Division B, at 168-176, 115th Cong. (2018)). For Senate-proposed funding levels, see S. REP. No. 115-281, at 25 (2018) (accompanying S. 3107, at 12-19, 115th Cong. (2018)).

20 IRS Legacy Information Technology Systems: Hearing Before the House Comm. on Oversight and Government Reform, 114th Cong. (2016) (statement of Terence Milholland, Chief Technology Officer, Internal Revenue Service).

21 *Id.*

systems is that their data structures do not allow us to easily use the data in our downstream service and compliance systems to best serve taxpayers.”²²

Second, the older a system becomes, the more difficult it is to maintain. Fewer and fewer computer programmers are conversant with assembly language code and other old programming languages. Because significant programming of legacy systems is still required to prepare for each filing season and for other purposes, the shrinking pool of qualified programmers poses a significant and growing concern.

Third, the older a system becomes, the more expensive it is to maintain. Warranties on IRS legacy systems have long since expired, and some parts are no longer manufactured. Over time, the costs of maintaining legacy systems will continue to increase. For that reason, replacing these systems sooner rather than later is likely to reduce maintenance costs substantially.

Fourth, systems upgrades become more challenging when they are implemented over extended periods of time. Technology that is current at the time a new system is conceived may be obsolete five years later. Therefore, managers of long-term projects are more likely to confront difficult decisions about whether to hew to original plans or to modify them to incorporate newer technology. Newer technology often is more robust and effective, but changing plans mid-stream can create complications and increase costs. If the IRS were given the resources to modernize its systems at a pace comparable to the private sector, some of these challenges could be avoided.

EXPLANATION OF RECOMMENDATION

We believe the IRS requires significant additional funding to replace its core legacy systems with new IT systems. Given the central role technology and automation play in virtually every aspect of IRS operations, the IRS budget should reflect their importance. It is hard to imagine a large corporation as dependent on technology as the IRS would spend only one percent or two percent of its budget on IT systems upgrades.

Rather than making overall progress in modernizing its legacy systems, some indicators suggest the IRS is still losing ground. According to the Treasury Inspector General for Tax Administration, the percentage of the IRS’s IT hardware classified as “aged” increased from 40 percent at the beginning of FY 2013 to 64 percent at the beginning of FY 2017.²³ The IRS requires sufficient resources to reverse that trend.

We also believe the IRS requires a more predictable flow of funds. Fluctuations in BSM funding from \$290 million in FY 2017, to \$110 million in FY 2018, to somewhere between \$110 and \$200 million in FY 2019 preclude the agency from defining the scope of its upgrades and delivering its projects on time and on budget. If the agency developed an IT plan in FY 2017 on the assumption that it would continue to receive \$290 million a year, it necessarily would fail to meet its goals when the FY 2018 BSM funding level was cut by 62 percent.

22 IRS Legacy Information Technology Systems: Hearing Before the House Comm. on Oversight and Government Reform, 114th Cong. (2016) (statement of Terence Milholland, Chief Technology Officer, Internal Revenue Service).

23 Treasury Inspector General for Tax Administration, 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).

We are not advocating that Congress provide the IRS with a blank check. Significant IT projects are challenging, and historically, the IRS has often failed to produce projected results timely and at budgeted levels. While a portion of its IT failures are likely attributable to insufficient funding or uneven funding streams, another portion is attributable to poor planning and execution. Therefore, we believe that before Congress provides additional funding, it should (i) require the IRS to present a comprehensive IT modernization plan with time frames and cost projections; (ii) directly or through the IRS request an independent assessment of the plan's effectiveness and feasibility from a third-party entity with technology expertise; and (iii) require annual reports on the IRS's progress in meeting its targets from an independent third party with technology expertise.

On balance, we believe the IRS has done a better job of developing and executing its IT modernization plans in recent years. We note that the GAO had included the BSM program on its "High Risk List" for 18 years beginning in 1995, but removed it in 2013 based on agency progress.²⁴ Similarly, a recent Senate Appropriations subcommittee report said that "the IRS has, in recent years, satisfied the majority of developmental milestones planned for competition early, under budget, or within ten percent of cost and schedule estimates."²⁵ These are positive signs. With additional funding and proper oversight, we are optimistic the IRS can continue to modernize its IT systems, produce better taxpayer service and compliance results, and ultimately reduce its IT systems maintenance costs as well.

24 IRS Legacy Information Technology Systems: Hearing Before the House Comm. on Oversight and Government Reform, 114th Cong. (2016) (statement of Terence Milholland, Chief Technology Officer, Internal Revenue Service).

25 S. REP. No. 115-281, at 34 (2018).