INSIDE THE IRS:

Use of Artificial Intelligence and Data Analytics to Modernize Operations

The IRS's growing use of AI and data analytics is reshaping compliance, enforcement and taxpayer interactions.

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Writing an article on technology applications and artificial intelligence at the IRS is difficult – changes are occurring faster than we can type. However, the pace of change at the agency has slowed somewhat after Congress clawed back funding in the Inflation Reduction Act of 2022 from $79.4 billion to $37.6 billion and failed to include any funds for business systems modernization in either the 2023 or 2024 IRS budget. And with the government shutdown, furloughs and layoffs, there's further slowing that may allow our keyboarding skills to at least provide a status report. Perhaps we should use artificial intelligence to write this article, hoping that maybe it can keep up with itself!

The IRS has used rudimentary data analytics and artificial intelligence for many years, actually forming an artificial intelligence laboratory in 1986 as part of an initiative to explore new technologies for tax return processing. The IRS Discriminant Income Function (DIF) used basic artificial intelligence and data analytics to help select returns for audit, and "flowcharted" responses to taxpayer inquiries were used in telephone service centers to almost turn humans into chatbots.

Collection and analysis of tax return data was automated to produce the IRS "Statistics of Income Bulletins." With all this early background, new chips, computers and programs will enable IRS computers to powerfully use generative artificial intelligence to learn and evolve as they work, potentially bringing revolutionary change in all IRS mission areas.

As of 2024, the IRS had initiated 68 projects involving artificial intelligence, with the number likely increasing since then.[1] These projects span various areas, including taxpayer services, encouraging compliance and automating IRS processes to make operations more efficient.

In the area of taxpayer services, the IRS is using AI chatbots to respond to taxpayer questions, thereby reducing the number of employees needed to answer the phone.

In the taxpayer compliance area, AI and data analytics are being used to select returns for audit and to detect errors and fraud. For example, LB&I discovered that its traditional audit selection criteria were inadequate and resulted in a high no-change rate. After implementing an AI model, it was able to locate noncompliant returns more effectively while simultaneously relieving employees from the classification function.

Similarly, in the criminal investigation function, the agency is using AI programs developed by Palantir to sift through large volumes of data (including suspicious activity reports) to identify patterns and locate noncompliance – a process that used to take an agent many hours.[2]

Before the recent reductions in force, IRS CI had hired a number of data scientists to use AI to develop a software engine that suggests future actions based on historical analysis of agent decisions. The prior CI Chief stated that its 2,000 agents were instructed to use the tool to develop cases and that doing so had "sped up" its investigations and "what used to take hours; now it's taking minutes."[3]

REALLY BIG DATA!

Data analytics tools are ideal for the massive amount of information collected by the IRS. Almost all tax returns are submitted electronically or scanned into IRS computers, providing the IRS with

years of tax records for all taxpayers that can be readily analyzed.

The IRS also purchases data and analytical programs from various outside providers. In December 2023, the IRS solicited bids for a commercial off-the-shelf AI tool to meet specific criteria.[4] A 35-page performance work statement indicated that the IRS intended to use the tool to assist with a number of very specific goals.

For example, the IRS Collection Division apparently receives a lot of undelivered mail. The IRS hopes to use AI to find a way to locate the current address of a delinquent taxpayer without having to involve personnel.

The challenge with implementing AI thus lies in utilizing information and tools to efficiently enhance results across the IRS's various missions.

IRS ORGANIZATION TO LEVERAGE BENEFITS FROM AI AND DATA ANALYTICS

The IRS Office of Research, Applied Analytics and Statistics (RAAS) works across the various silos of the IRS to share information and analytic techniques, to collaborate on projects, identify learning and training opportunities, and to encourage the use of technology throughout the IRS. The Chief Data and Analytics Officer is in charge of this division and reports directly to the Deputy Commissioner of Operations Support.

Their work has become increasingly important due to current staffing restrictions and other budget constraints. This group employs a range of research methods, including:

- Economic modeling,
- Forecasting,
- Compliance studies,
- Analysis of proposed legislative initiatives, and
- Strategic program evaluations.

It combines advanced analytics, dynamic testing, reporting, and prototyping with scientific applications using the expertise of various IRS divisions to provide practical and actionable recommendations for improvements. It is responsible for evaluating and improving the quality of data for various IRS applications, including the Statistics of Income report. RAAS also provides recommendations to support budgeting and human resources deployment.

USES OF DATA ANALYTICS

The IRS understandably provides general (rather than specific) information on its use of artificial intelligence and data analytics to avoid giving tempted taxpayers a map to the audit minefield. This is similar to the approach taken with the currently used criteria in computer analysis of returns for audit selection. However, the IRS should be doing better.

Executive Order 13960 titled "Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government" requires agencies to publish an inventory of all its AI use cases. The IRM (at 10.24.1 et seq) provides instructions in that regard.[5] And apparently, the IRS historically complied with that mandate, at one time publishing 68 use cases on Treasury's website.[6] Unfortunately, that is no longer the case. There has been little transparency regarding specific algorithms and programs. And while that may be appropriate for law enforcement activities, it should not be a blanket rule.

That said, there are some general stated goals and some specific discernible results from IRS AI and Big Data applications, including:

- Analyzing data to identify patterns and anomalies, particularly with emphasis on large and complex partnerships,
- Better understanding the taxpayer environment and assessing compliance risks to understand relationships among non-compliant actors,
- Combatting identity theft,
- Estimating and recommending steps to reduce the tax gap and encourage voluntary compliance,
- Increasing the efficiency of audits by focusing limited resources on likely issues,
- Enhancing customer service and reducing wait times at call centers by using AI applications and chatbots to handle routine taxpayer inquiries and reduce human staffing of this function,
- Identifying and analyzing abusive tax shelters,
- Catching unreported cryptocurrency transactions,
- Finding employers who have not properly remitted payroll taxes, and
- Identifying tax return preparers who have helped clients fraudulently claim employee retention and other credits for which they did not qualify.

The RAAS also helps the IRS identify administrative needs for newly enacted legislation and can develop recommendations for legislative corrections where needed. It assesses the compliance burden on taxpayers and tries to develop ways to make compliance more cost effective for them.

POTENTIAL PROBLEMS IN AI AND DATA ANALYTICS AT THE IRS

The IRS has provided some guidance to ensure that the power of AI is used fairly and supports taxpayer compliance and confidence in the system. AI will often automatically learn and improve itself based on experience, without needing specific human programming, which raises some concerns.

There are numerous examples of potential issues, including whether certain algorithms, databases and queries may contain biases that unfairly target specific groups for audits. With workforce cuts, are there sufficient human resources to review artificial intelligence conclusions and will employees be reluctant to challenge the power of artificial intelligence? While the IRS clearly focuses on taxpayer privacy, are there sufficient safeguards as they

How the IRS Uses AI to Streamline Operations

These are a few of the ways the IRS is leveraging artificial intelligence:

- **Taxpayer services:** AI chatbots handle routine questions, reducing the need for human staff
- **Compliance and audits:** AI and data analytics improve audit selection, detect errors and fraud, and reduce employee workload
- **Criminal investigations:** AI tools analyze large data sets to identify noncompliance, speeding up investigations from hours to minutes
- **AI-driven decision support:** Historical data analysis helps IRS agents develop cases more efficiently
- **Collections:** AI is being explored to locate delinquent taxpayers' current addresses, reducing the need for personnel to handle undelivered mail

use external databases and contractors to assist them with AI applications?

Nina Olsen, former National Taxpayer Advocate, highlighted Australia's debt recovery system, "Robodebt" as a cautionary tale. It used an automated data matching technique in a catastrophic fashion, wrongfully sending debt notices to welfare recipients.[7] And further concerns with respect to the IRS's use of AI in the audit selection process were highlighted in a May 2025 TIGTA report.[8]

It thus remains to be seen whether the efficient use of Big Data by AI will bring about enough increased efficiency to offset cuts in human resources at the IRS and maintain confidence in its audit credibility.

Footnotes

[1] Governance Efforts Should Be Accelerated to Ensure the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence, TIGTA, November 12, 2024.

[2] IRS Using Data Analytics for Bigger, Better, Faster Investigation, Nathan J. Richman, Tax Notes, 12/5/2018.

Related CPE

- The AI Advantage: Leveraging AI for Efficiency and Impact
- Data Analytics: Practical Insights for Today's Accountant
- Data Science for Accountants Business

[3] Artificial Intelligence Yields Promises, Risks for IRS, William Hoffman, Tax Notes, 10/9/2018.

[4] https://www.highergov.com/contract-opportunity/24-4-ira-oita-research-applied-analytics-statis-24-4-ira-oita-r-59dd9/

[5] https://www.irs.gov/pub/foia/ig/spder/raas-10-0325-0001-public.pdf

[6] https://www.irs.gov/pub/irs-pdf/p3415.pdf at 30.

[7] Report: IRS Brushed Off Suggestions for Improvement, Lauren Loricchio, Tax Notes 4/10/2023.

[8] The IRS Could Leverage Examination Results in Artificial Intelligence Case Selection Models and Improve Processes to Evaluate Performance, TIGTA, May 19, 2025, Report Number 2025-308-022.

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