



AI and the Modern Tax Agency

Adopting and Deploying AI to Improve Tax Administration

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The first contribution to this forum focuses on how artificial intelligence could improve tax administration while minimizing some of the risks. Driven by common access to AI and the potential benefits of generative AI, the U.S. Internal Revenue Service (IRS) and tax agencies around the world are now in the mist of calibrating the right balance for the use and application of this technology. To better understand opportunities and considerations, the IBM Center, in collaboration with the Kogod Tax Policy Center at American University, hosted a global discussion on *AI and the Modern Tax Agency*.

What follows are insights, analysis, and recommendations for the IRS and tax agencies around the world to leverage AI to improve customer service and education, compliance and enforcement, and risk management—and to do so while mitigating risk and building trust using AI. These are excerpted from the IBM Center report *AI and the Modern Tax Agency: Adopting and Deploying AI to Improve Tax Administration* by Caroline Bruckner and Collin Coil.

Opportunities for Tax Administration in the U.S.

The U.S. Internal Revenue Service is embarking on a transformative IT overhaul to modernize the taxpayer experience, made possible by a substantial funding boost from the Inflation Reduction Act (IRA) in August 2022. This funding enables the IRS to invest in new technology and integrate AI across operations, targeting areas like taxpayer filing, enforcement, and internal processes. Despite collecting over \$4.9 trillion and processing about 260 million tax returns in FY 2022, the IRS faces challenges due to outdated technology and a budget reduction since 2010. Its responsibilities have also expanded, including administering programs from significant legislative acts.

To manage the growing demands, AI adoption is crucial for the IRS. The IRA funding allocated \$45.6 billion for enforcement, \$25.3 billion for operational support, \$4.8 billion for systems modernization, and \$3.2 billion for taxpayer services. AI is already used in some IRS functions, like audit selection and call redirection, but more widespread deployment faces challenges. These include ensuring security, privacy, and compliance with a complex tax code, which AI cannot fully simplify due to statutory intricacies.

International tax agencies, such as those in Australia and Singapore, have successfully implemented AI-driven tools like virtual assistants, which streamline user support. The IRS, however, has yet to deploy a similar accessible AI system, though potential exists. The IRS's extensive digital framework and tax law complexity present unique hurdles to AI deployment, which differs from the seamless user experiences seen in the private sector. For the IRS, these challenges stem from both the extensive existing IRS digital footprint and the overwhelming (and increasing) complexity of U.S. tax laws.



AI in Customer Service, Outreach, and Education to Support Tax Agencies

Taxpayers in the U.S. often struggle with filing compliance, particularly those with nontraditional income like gig work, which lacks tax withholding, contributing to the tax gap (estimated at \$688 billion in 2021). Compliance challenges also stem from low tax literacy; many taxpayers lack the knowledge to navigate complex tax rules. Despite the importance of refunds, especially for low-income individuals, education around tax obligations is limited. Research shows that only a small portion of U.S. taxpayers receive tax education, contributing to errors in filings and unintentional non-compliance.

AI could play a significant role in assisting tax agencies by improving customer service, education, and outreach. AI chatbots and virtual assistants can provide 24/7 help with routine tax queries, allowing human agents to focus on complex cases. AI tools can scan forms, offer guidance in real-time, and personalize assistance based on taxpayer data, reducing filing errors and improving the taxpayer experience. Personalization, facilitated by AI, could make tax agencies more responsive and encourage voluntary compliance, ultimately leading to better outcomes for both taxpayers and tax authorities. Additionally, targeted information campaigns using AI can educate taxpayers on benefits and free assistance programs, further enhancing compliance and satisfaction.

AI in Tax Compliance and Enforcement

When deciding which AI tools to use to improve tax compliance activities, tax agencies should consider which AI implementations have the highest return on investment, weighing factors such as increasing accuracy of tax filings, enhancing the taxpayer experience, and improving compliance with the ever-evolving complex tax rules. One area where AI is likely to have an immediate impact is efforts to combat tax scams.

Disrupting Emerging Tax Scams: AI could provide the “night vision goggles” that enable the IRS to detect tax scams and tax cheats shielding income. Recent research advancements on AI anomaly detection can facilitate development of tools that identify filings involving fake W-2 forms, Employee Retention Credit schemes, fraudulent claims for unemployment compensation, or detection of ghost preparers. Using automated AI detection tools can greatly enhance the speed of detecting these scams. AI tools can also help to disrupt scams impacting taxpayers that do not directly appear in annual tax filings. For example, telephone or mail scams use generative AI (e.g., ChatGPT) to design fake IRS correspondence and target elderly populations with “notices” of fines or penalties. Tax agencies will need to deploy AI systems to counter and mitigate the effects of the growing use of generative AI in tax scams.



Audit Selection and Process: Audits represent one of the most common reasons taxpayers interact with tax agencies and are often stressful experiences for taxpayers. The IRS recognizes the utility of incorporating AI to help IRS compliance teams better detect tax cheating, identify emerging compliance threats and improve case selection tools to avoid burdening taxpayers with needless ‘no-change’ audits. Recent AI advances in task-agnostic anomaly detection may also help with managing audit selection processes by reducing the need to train new detection models from scratch every filing season. During the audit process, AI tools may provide invaluable assistance tackling intentional tax evasion schemes, which grow more complex every year.

Going forward, AI will enable tax authorities to identify these schemes and assist auditors during the review process. The IRS has already initiated the rollout of AI models to help identify risk of noncompliance in large partnerships. Overall, AI tools have the potential to enhance the speed and accuracy of audits. This can increase efficiency and enforcement effectiveness. Deploying AI can allow for more audits of highly complex evasion schemes at a lower burden to the public. This will—with compliance and reducing the tax gap—help to restore the public’s trust in the IRS’ ability to conduct audits expeditiously and fairly.

AI in Governance, Risk, and Authentication for Tax Agencies

Even with many benefits from incorporating AI across tax agency functions, the risks are real. In the U.S., leaders recognize the issues and opportunities widespread adoption of AI across agencies present and have endeavored to lead on AI governance issues and risk mitigation.

Following the Artificial Intelligence in Government Act of 2020 and Advancing American AI Act, President Biden’s Executive Order 14110 (EO 14110), issued on October 30, 2023, outlines over 100 actions for safe and responsible AI development, with eight main focus areas:

1. **Safety and Security:** Ensuring AI does not compromise biosecurity, cybersecurity, or infrastructure
2. **Innovation and Competition:** Attracting AI talent, protecting intellectual property, and supporting small business innovation
3. **Worker Support:** Addressing potential workforce disruptions from AI
4. **AI Bias and Civil Rights:** Mitigating biases in AI, especially in criminal justice and federal programs



5. **Consumer Protection:** Enforcing regulations to protect consumers
6. **Privacy:** Safeguarding personal data against AI-related privacy risks
7. **Federal Use of AI:** Creating an interagency AI council to coordinate federal AI use and provide risk management guidance, with a focus on secure generative AI (GenAI) adoption
8. **International Leadership:** Collaborating internationally to establish responsible AI standards

Subsequent guidance from the Office of Management and Budget (OMB) includes strategies for Treasury and IRS implementation of EO 14110, such as designating a Chief AI Officer, establishing AI governance boards, and performing periodic AI risk assessments. This governance framework aims to foster transparency, accountability, and a balanced approach to adopting AI within tax agencies and other federal entities.

How Can Tax Agencies Work to Mitigate AI Risks?

To mitigate AI risks in tax agencies, several strategies have been proposed, focusing on data quality, model fine-tuning, architecture, and human oversight:

1. **Robust Training Data:** Quality data is essential, as biased or erroneous data can lead to unreliable models. Tax agencies should ensure data accuracy, completeness, and representation. Using labeled data from audits and judicial cases can help improve model reliability. Additionally, diversity in the data is critical to avoid perpetuating biases, especially given past concerns with IRS algorithms.

2. **Fine-Tuning Foundation Models:** Using general foundation models, which are initially trained on massive datasets, tax agencies can fine-tune these models with tax-specific data to boost accuracy and relevance, potentially reducing errors in AI outputs.
3. **Model Architectures:** Choosing appropriate AI architectures, such as adversarial AI, can help mitigate biases and enhance performance. An “adversary” model that critiques the main model’s outputs can be effective for bias reduction, among other risks.
4. **Human Role in AI Systems:** Human oversight is crucial, particularly in complex or novel tax situations where AI may struggle. Strategies like red-teaming (testing for system weaknesses) and deploying AI as an advisory tool rather than a replacement allow humans to use critical reasoning to verify and interpret AI outputs, which is essential for minimizing risks in tax administration.

These approaches, with a strong emphasis on human involvement, aim to improve AI reliability, prevent errors, and safeguard against unintended biases or privacy violations.

How Can AI Be Used to Build Trust in the Modern Tax Agency?

To build trust in AI, tax agencies need to improve the taxpayer experience and prioritize accuracy, transparency, inclusivity, education, and continuous monitoring:

1. **Transparency and Interpretability:** Tax agencies can increase trust by being open about where and how AI is used, especially in data handling. Clear, interpretable AI models help users understand AI’s decisions, making it easier to interact with and trust these systems.
2. **Inclusive Development:** Creating AI tools based on taxpayer needs and ensuring accessibility for all, including those with disabilities or limited digital literacy, enhances trust. Building diverse development teams fosters inclusivity and ensures tools address a broad range of perspectives.
3. **AI Education:** Educating taxpayers on using AI tools and understanding their limitations increases confidence and uptake. Walkthroughs, guides, and transparency about AI’s capabilities and limitations can prevent misunderstandings that may erode trust.
4. **Continuous Monitoring and Evaluation:** Tax agencies should regularly update AI models to reflect changes in tax laws, track and address errors, and respond to taxpayer feedback. Publishing reports on AI performance, including benefits and error rates, demonstrates accountability and commitment to accuracy.

These strategies help tax agencies ensure AI tools are reliable, fair, and accessible, reinforcing taxpayer trust.

