

August 15, 2025

IFA Canada Tech & Tax Seminar

2.0

Organized by IFA Canada (in collaboration with TEI, HEC Montréal, and Gowling WLG)

LOCATION: HEC Montréal, Downtown Campus

REGISTRATION: FREE

IFACANADA.ORG

ORGANIZING COMMITTEE







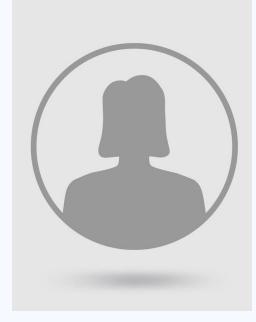
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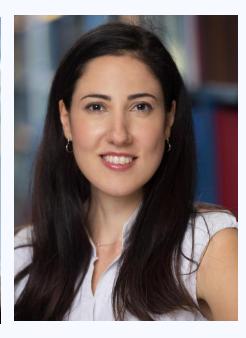
SPEAKERS











ABDI ADID

AL HOUNSELL

ANARELLA CALDERONI

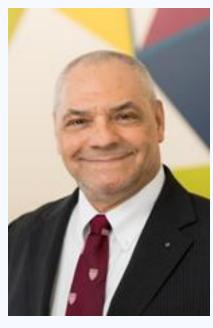
BRIGITTE MUEHLMANN

CHRISTINA DIMITROPOULOU

SPEAKERS











CHRISTINE CHENG

FABIOLA ANNACONDIA

GEORGE SALIS

HERSH JOSHI

JOEY VAN DE PASCH

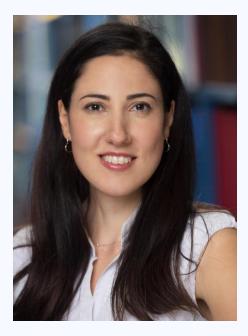
Tax is Cool: Leveraging Big Data and Al in Tax

ABDI ADID, CHRISTINE CHENG, CHRISTINA DIMITROPOULOU, HERSH JOSHI

SPEAKERS PROFILE









ABDI ADID

CHRISTINE CHENG

CHRISTINA DIMITROPOULOU

HERSH JOSHI



OUTLINE

- 1. Introduction
- 2. Overview of the benefits of AI in the automation of selective tax management functions
- 3. Limitations of data analytics and framework for improvements for all stakeholders
- 4. Data analytics and automated tax decision making the future of tax law making



INTRODUCTION

- The tax function has become increasingly data driven
- Big data transform the relationship between taxpayers and tax authorities beyond an efficiency tool
- Data analytics typically used for: responding to taxpayer's queries, initiating tax audits, reviewing tax returns and providing information on tax obligations and deadlines, designing a tax management plan
- The future is based on "compliance by design": assess tax liability as close to real time to the taxable event as possible or providing guidance to avoid misapplication of the law and direct taxpayers' behaviour accordingly
- All is enhancing the capabilities of big data = Both can be decisive in assisting taxpayers shape their decision-making process when it comes to transactions that they wish to undertake or tax reporting positions that they wish to reflect



OVERVIEW OF THE BENEFITS OF AI IN THE AUTOMATION OF SELECTIVE TAX MANAGEMENT FUNCTIONS

Function	Data analytics	Al advantage
Compliance	Dashboards & reports	Real time learning-adaptive logic
Risk management	Historical data flagging	Predictive modeling
TP optimization	Benchmarking	Dynamic allocation and simulation
Tax reporting and transparency	Aggregation	Smart reconciliation
Tax planning strategy	Trend-based analysis	Sentiment analysis- strategy suggestion, generative-interactive learning



OVERVIEW OF THE BENEFITS OF AI IN THE AUTOMATION OF SELECTIVE TAX MANAGEMENT FUNCTIONS

> Summary of benefits: Eliminate decisional bias > Example in civil tax law penalty imposition

Traditional approach	Predictive Analytics Approach
Taxpayer presenting a \$1 million deduction	 A computer screen displaying an Al interface showing a probability gauge (e.g., "Likelihood of Success: 28%")
 Taxpayer & advisor appear puzzled, reviewing case law on the traditional audit process 	 A green/red threshold line shows the penalty is likely due
IRS scrutinizing the deduction manually	 Visual inputs feeding the AI, labeled "Past Cases," "Case Law," and "Legal Precedents"



LIMITATIONS OF DATA ANALYTICS AND FRAMEWORK FOR IMPROVEMENTS FOR ALL STAKEHOLDERS

Limitations

Data quality

- When is a sample considered unbiased?
- What are the criteria to distinguish fraud signals from random errors based on sequence of transactions?
- How often data have temporal disturbances and how to rely on those for predictions? Integration of data from various sources
- Over reliance on data analytics may be counterproductive
- Privacy and security concerns
- Over reliance on data analytics may be counterproductive

Framework for improvement (technical and legal)

- Comprehensive and trustworthy dataset
- Interoperability with third party systems
- Tailor AI and NLP to certain tax functions
- When possible, inbuilt transparency, accountability in the system (human intervention established in stages of the procedure)





- How and to what extent legal norms can be translated into computer logic?
- Nature and structure of legal norms (commands or prohibitions of certain actions) in principle similar to a computational reasoning
 - If X then Y: (X=legal facts), (Y=legal consequence) method of subsumption = legal interpretation

BUT:

■ Inherent ambiguity of legal terminology- Law cannot be easily modelled!



- If modelling law in computational Logic is not feasible or non efficient at least, its self-execution becomes problematic (translation of the logic into a computational language):
 - Computational language is different than human language: "Translation" of wording of the norms does not represent the norm!
 - Must we change the current ways of drafting law?



The Catala example:

 Tax law already contains formalizations but Catala's benefits include:

1: DSL ("Domain Specific programming Language");

2: Pair programming and;

3: Literate programming

• This creates more transparency and accountability while coding the lawcanbe easily accessible



HYPOTHETICAL CASE STUDY FROM U.S TAX LAW

Tax law rule	Inputs & Outputs	Catala Code
IRC §162(a): A corporation may deduct all ordinary and necessary expenses paid or incurred during the taxable year in carrying on a trade or business, provided they are not capital expenditures, not personal, and not specifically disallowed elsewhere in the Code.	INPUTS expense_amount: the dollar amount of a corporate expense is_ordinary: boolean, whether the expense is "ordinary". is_necessary: boolean, whether it's "necessary". is_capital: boolean, whether it's a capital expense. is_personal: boolean, whether it's a personal expense is_specifically_disallowed: boolean, whether disallowed by another provision OUTPUTS deductible_expense: amount that can be deducted under §162.	law us_corporate_tax_expense_deduction context corporation = input expense_amount: money input is_ordinary: boolean input is_necessary: boolean input is_capital: boolean input is_personal: boolean input is_specifically_disallowed: boolean output deductible_expense: money rule deductible_expense = if is_ordinary and is_necessary and not is_capital and not is_personal and not is_personal and not is_specifically_disallowed then expense_amount else 0

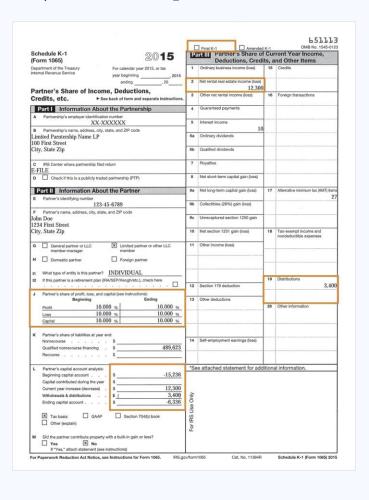


IMAGINING THE POSSIBILITIES

- 1. Automating Routine Tasks
- 2. Identifying new ways to solve old problems
- 3. Processing updates to existing law
- 4. Pushing boundaries



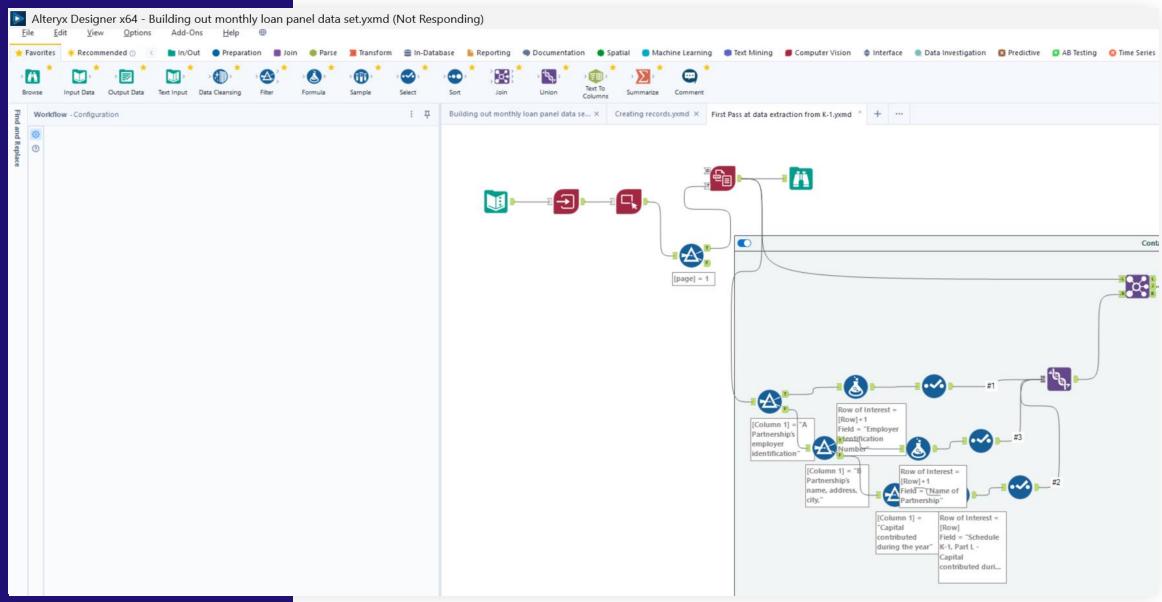
USING OCR/AI TO AUTOMATE ROUTINE TASKS



Move from the manual process to a program which leverages OCR to gather information needed for filling out other tax returns

SPEAKERS: CHRISTINE CHENG





SPEAKERS: CHRISTINE CHENG





August 22nd DEMO DAY | See K1 Aggregator® & 990 Tracker® in Action→



WHAT WE DO CLIENTS ROI CALC RESOURCES EVENTS CONTACT



REQUEST PRICING

Al Automation Software for K-1s, K-3s, 990s, and 1099s

Shift Happens. With tax complexity rising, tax talent tightening, and service demands surging, you need more than just efficiency —you need an X factor.

With K1x as your force multiplier you save more and gain more by:

√ eXtracting K-1 and 1099 data with 90% less manual effort



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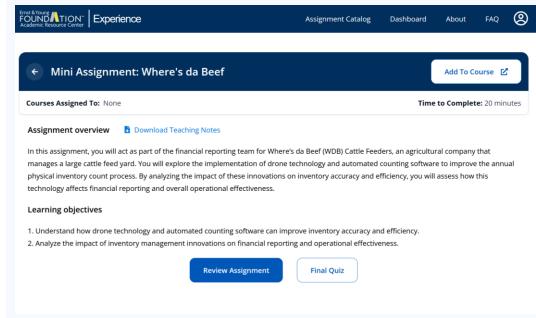


IDENTIFYING NEW WAYS TO SOLVE OLD PROBLEMS

Undeclared pools in France uncovered by AI technology



The discovery of thousands of undeclared private swimming pools in France has provided an unexpected windfall for French tax authorities.





PROCESSING UPDATES TO EXISTING LAWS

Instructional resource:

On July 4, 2025 Public Law No: 119-21 became law. Public Law No: 119-21, more commonly referred to as H.R. 1 – One Big Beautiful Bill Act contains tax reform provisions that impact materials commonly taught in undergraduate and graduate tax courses. When accessed via pdf, H.R. 1 has 330 pages and 10 sections. While many tax provisions are contained in Section 7, tax faculty often include related expenditure provisions in their classes. As such, faculty who want to update their course materials to incorporate H.R. 1 face a daunting task.

To help faculty identify the provisions that affect their course materials, this instructional resource focuses on how a commonly accessible AI tool, specifically NotebookLM, can be used to facilitate the effective digestion of H.R. 1.

SPEAKERS: CHRISTINE CHENG



IDENTIFYING CHANGES TO INDIVIDUAL TAXATION

- Child tax credit
- Adoption credit
- Standard deduction
- 5. Since we are interested in the changes related to qualifying children, type in the question "What changes are made to the child tax credit?" in the chat box

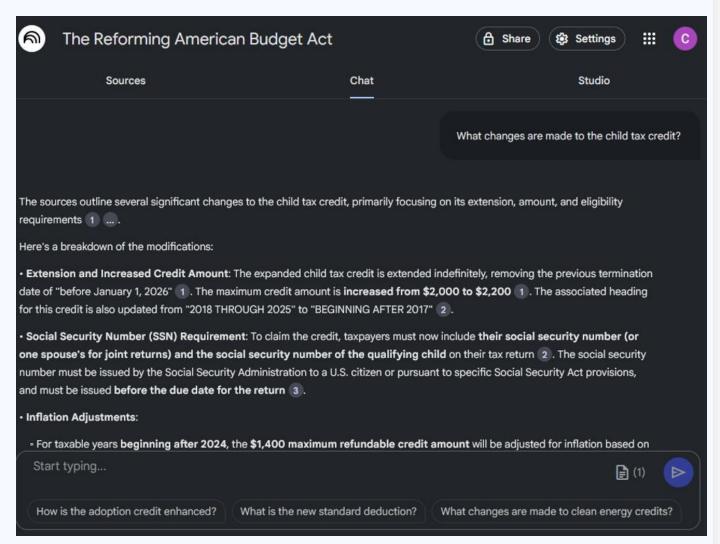


SPEAKERS: CHRISTINE CHENG



IDENTIFYING CHANGES TO INDIVIDUAL TAXATION

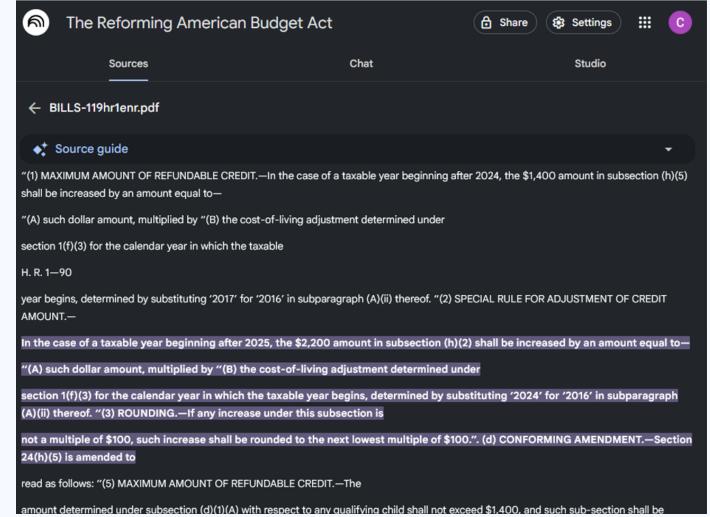
- Child tax credit
- Adoption credit
- Standard deduction
- 6. Hitting enter, or pressing the play button promotes the response shown below





IDENTIFYING CHANGES TO INDIVIDUAL TAXATION

- Child tax credit
- Adoption credit
- Standard deduction
- 7. Clicking on each number, for example, the number 5 in the bubble above takes you to the location where the inflation index adjustment is included in H.R.1.





IDENTIFYING RESULTS THAT ARE NOT DIRECTLY MENTIONED IN H.R.I.

The standard deduction for married filing joint taxpayers

- 10. The above results do not provide a standard deduction for married filing joint filers. This makes sense because H.R.1 did not have to update the standard deduction for married filing joint taxpayers, since the married filing joint standard deduction is identified by reference to the standard deduction for not otherwise classified (Single) taxpayers. While this result might be obvious to some, it is useful to consider how NotebookLM might be leveraged to identify information when it is not contained in the source document.
 - a. Clicking on the number 2 reference provides the code reference: Section 63(c)(7). We could pull this source document and manually read it to find that the married filing joint and surviving spouse standard deductions are 200% of taxpayers who are not otherwise classified (e.g., married filing joint, surviving spouse, or head of household).

SPEAKERS: CHRISTINE CHENG



- b) Alternatively, we can upload the additional source document for serction 63(c)(7) to the same notebook.
 - i. Click + Add on the Sources Panel



SPEAKERS: CHRISTINE CHENG



While the sources do not directly state a single dollar amount for the standard deduction for "married filing joint" taxpayers, they provide the information necessary to calculate it based on the underlying tax code structure and the recent amendments (1)

Here's how the standard deduction for married filing joint taxpayers is determined:

- Original Structure: According to Internal Revenue Code Section 63(c)(2)(A), the basic standard deduction for a joint return is 200 percent of the dollar amount in effect under subparagraph (C) of that section (3) (4). Subparagraph (C) refers to the standard deduction amount for "any other case" (4).
- Previous Increase (2018-2025): For taxable years beginning after December 31, 2017, and before January 1, 2026, the amount in subparagraph (C) was substituted from \$3,000 to \$12,000 5. This would have made the joint standard deduction \$24,000 (200% of \$12,000).
- Extension and Further Enhancement: The recent amendments extend indefinitely the increased standard deduction by removing the "and before January 1, 2026" limitation 1. The heading is also updated to "BEGINNING AFTER 2017" 1.
- Specific Dollar Amount Increase: The dollar amount that was "\$12,000" (from subparagraph (C) as amended for 2018-2025) is now increased to \$15,750 2.
- Calculation for Married Filing Joint: Applying the original rule that a joint return's standard deduction is 200 percent of the "any other case" amount (subparagraph (C)), the standard deduction for married filing joint taxpayers will be 200% of \$15,750.
 - Therefore, the standard deduction for married filing joint taxpayers would be \$31,500 (\$15,750 x 2).

These changes, including the increased dollar amounts, apply to taxable years **beginning after December 31, 2024** 2 . Additionally, the base calendar years for future inflation adjustments have been updated: "2018" is changed to "2025" and "2017" is changed to "2024" 2 .



PUSHING BOUNDARIES

- Great data + Innovative People = Unlimited possibilities
 - Which country offers the best R&D incentives for this client?
 - Integration of FDII, GILTI, & BEAT rules for longrange tax planning
 - Evaluating outliers (large profitable companies that pay no tax) and identify similarities/differences
 - Evaluating tax incentive offers with non-tax considerations

SPEAKERS: CHRISTINE CHENG



TAX WORK IN THE AUTONOMOUS FUTURE

Abdi Aidid, University of Toronto Faculty of Law



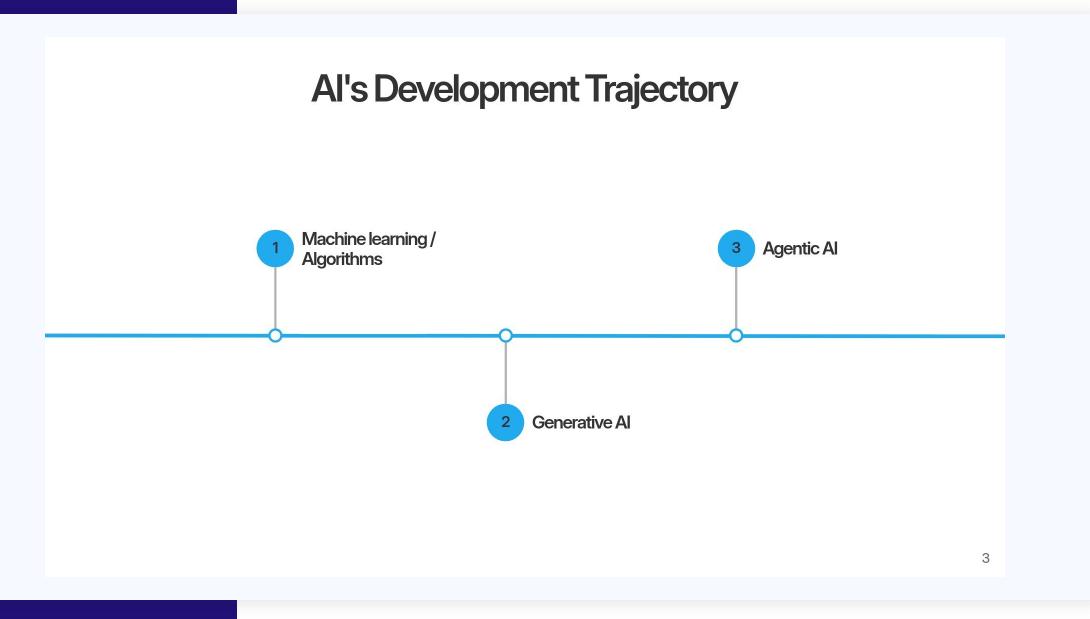
WHAT IS AI, REALLY?

"Making machines behave in ways that would be considered intelligent if a human were so behaving" - John C. McCarthy











Al's Development Trajectory

1 Machine learning / Algorithms thinking like humans

2 Generative Al

looking/sounding like humans

4



STANFORD CENTER FOR HUMAN-CENTRED ARTIFICIAL INTELLIGENCE

"Legal models hallucinate in 1 out of 6 (or more) benchmarking queries"



"It appears that Ms. Lee's factum may have been created by Al and that before filing the factum and relying on it in court, she might not have checked to make sure the cases were real or supported the propositions of law which she submitted to the court in writing and then again orally."

KO V. LI, 2025 ONSC 2766 (CANLII)











- Early Al models had wide-ranging abilities but lacked specificity for specialized fields
- Specific data science techniques such as retrieval augmented generation (RAG) are improving performance, including by reducing incidence of hallucinations
- increased expert participation and industry maturation = more purpose-built legal Al tools

9



Al's Development Trajectory

1 Machine learning / Algorithms
thinking like humans

2 Generative Al

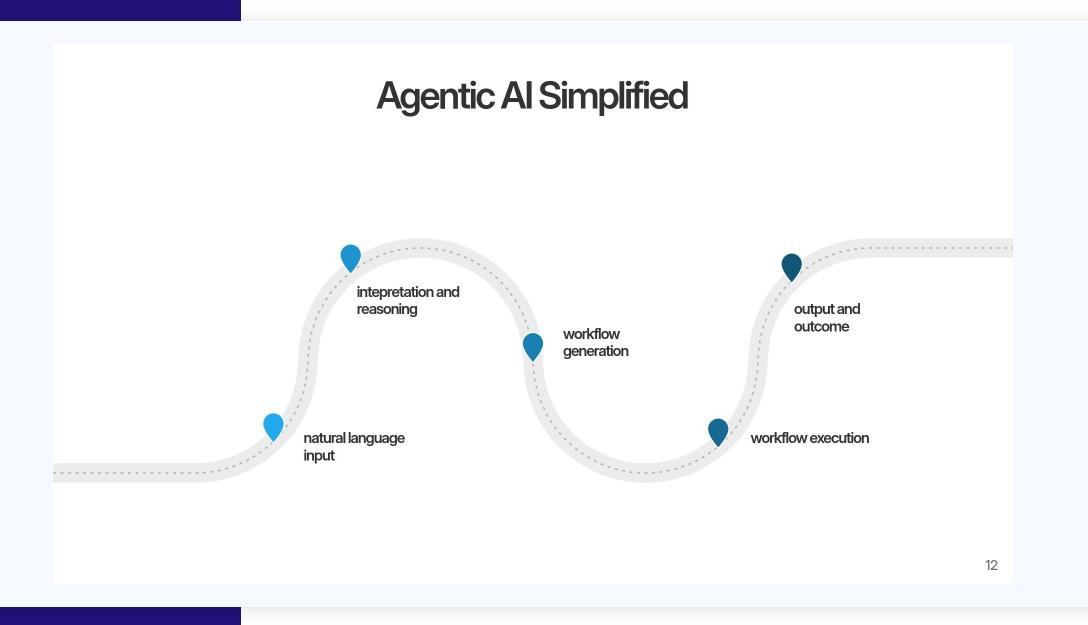
looking/sounding like humans

4



- the next stage is agentic artificial intelligence
- "Agentic AI" refers to systems capable of goal-directed, multi-step behavior with minimal human oversight.
- These agents can execute complex sequences (e.g., drafting, filing, and even responding to legal correspondence) by integrating planning and memory functions.
- This raises questions about authorship, accountability, and control, particularly when errors or misconduct occur through autonomous agent behavior.









- Agentic AI presents a second layer of complexity, as legal systems may need to evaluate the process by which AI evidence was created.
- For example, when Al agents autonomously retrieve, summarize, or draft legal communications, evidentiary questions arise about intent, chain of custody, authorship, and procedural regularity.
- Courts and rulemakers may need to establish new categories of disclosure and new burdens of proof tailored to Al-originated content.
- This is particularly important where AI systems operate without contemporaneous human oversight.



Audit trail review

Al to track business transactions related to income, expenditures, work processes, project phases, and accounting

3 Error detection and process verification

Real time supervision of tax professional service

2 Simulating tax scenarios

Developing responsive models that forecast tax outcomes and allow users to toggle/modulate

Optimizing decision making

Informed guidance, recommendations and work plans

3



goal-driven autonomy



context-aware anomaly detection



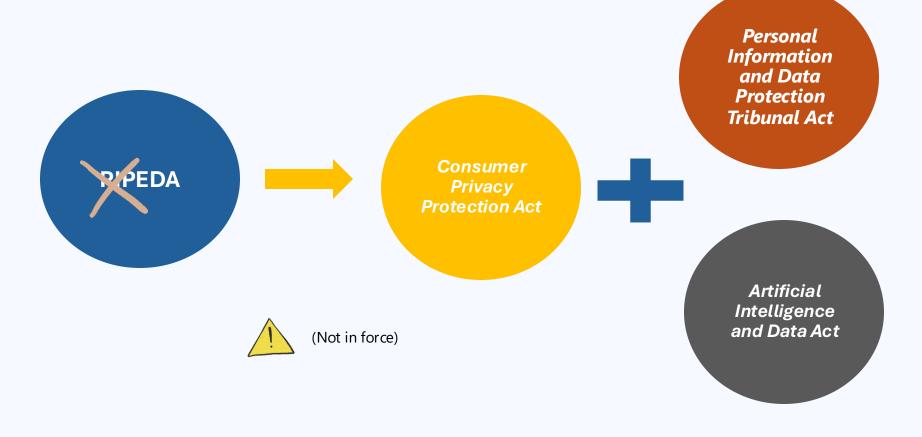
autonomous data validation across sources



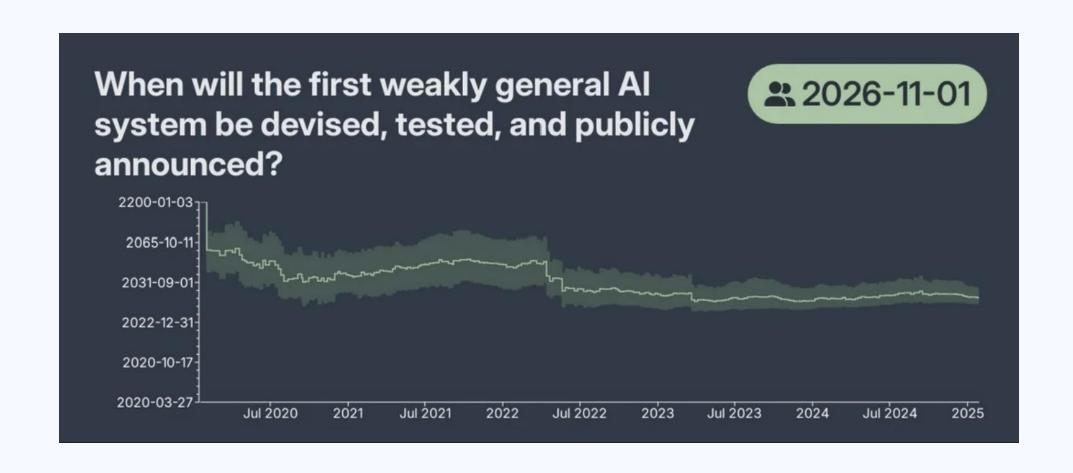
learning from historical patterns



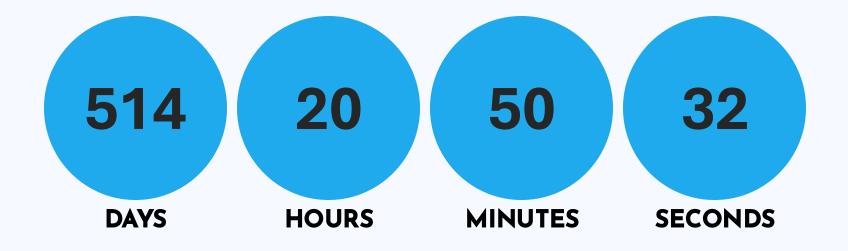
BILL C-27













A NEW FRONTIER

We are entering an era when we shall create resources which shall be so constantly renewed that the only loss will be not to use them. There will be such a plenteous supply of heat, light and power, that it will be a sin not to use all we want.

- Henry Ford, 1922

- Serious consideration of the future outcomes from Al is necessary, as hubris and shortsightedness can lead to unintended consequences
- As the developers and deployers of AI, private enterprise and today's business leaders are positioned to make the most positive impact
- We have both the opportunity and responsibility to prevent harm while extracting the greatest possible good from AI

SPEAKERS: HERSH JOSHI 52



ENTERPRISE EXPERIENCE

Step 1: Data

- Data is critical Golden copy, "One source of truth"
- Use AI to convert unstructured data to structured data

Step 2: Use cases

 No one size fits all: Enterprise Tax use cases would be different from Investment Tax

Step 3: Tool

- Choosing the Right tool Proprietary tools or prompt engineering using Enterprise GPT
- Care and feeding of the tools is inhouse IT function capable to support?

SPEAKERS: HERSH JOSHI 53

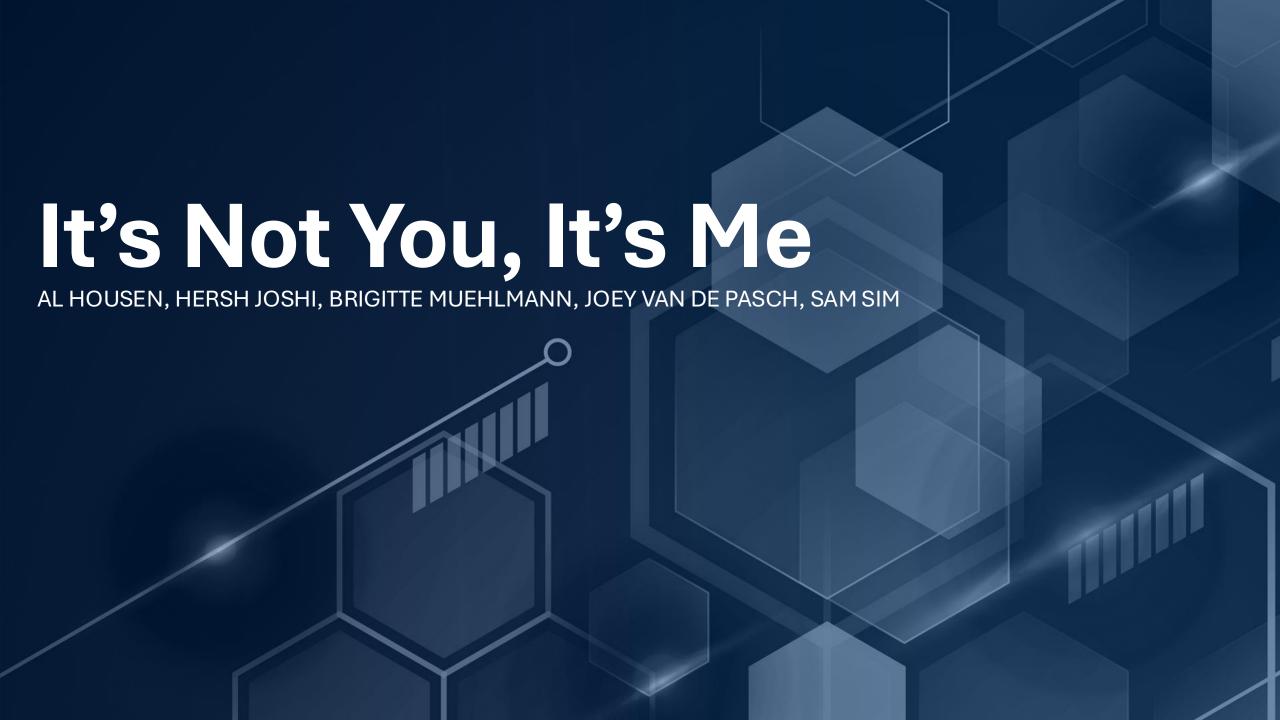


QUESTIONS?



BREAK





SPEAKERS PROFILE









AL HOUNSELL

HERSH JOSHI

BRIGITTE MUEHLMANN

JOEY VAN DE PASCH



AI'S IMPACT: HEADLINES FROM LEGAL & TAX

Recent reports highlight the accelerating influence of AI on professional services, shaping workforce dynamics and operational efficiency.



"Al Is Taking Over Accounting Jobs As People Leave the Profession"

Forbes, May 2024 - Firms are increasingly leveraging Al to compensate for the significant exodus of talent in the accounting profession, signaling a shift in workforce strategy.



"Intuit to Cut ~1,800 Jobs as It Increases Al Investment"

Reuters, July 2024 - Major players like Intuit are reallocating resources, reducing traditional roles to intensify investment in Aldriven tools and services, reflecting a broader industry trend.



"Generative Al Could Automate Almost Half of All Legal Tasks"

Goldman Sachs, March 2023 - Analysts estimate that nearly half of all legal tasks, particularly research, drafting, and document review, are highly susceptible to automation by generative AI.



"Can Al Replace Tax Professionals? The Future of Tax Automation"

Bloomberg Tax, April 2025 - Generative Al is already transforming tax compliance and client reporting. However, a significant challenge remains in bridging the cultural and competency gaps within the profession.



TECH MOVES FAST. STRATEGY SHAPES THE RESPONSE.

You're not planning for Al today—you're planning for where it's headed next.





Phase 1

Al tools are clunky, limited, and easily dismissed by professionals

Phase 2

Tech breakthroughs reset client expectations and pricing models

"Al strategy = defining what you'll need your people to be good at two years from now."

The strategic imperative: Don't train for today's tools—build people and processes for where the technology is *going*.



PEOPLE STRATEGY: ROLES, READINESS & CHANGE

A successful AI transformation depends on reimagining your workforce strategy.

ΑŻ

Al Translator

Skilled in prompting, interpreting, and validating Al outputs

Bridges domain expertise with model capability



Process Engineer

Understands legal/tax workflows and how to redesign them

Enables scalable, repeatable, automation-ready processes



Data Steward

Ensures structured, accurate, and compliant data inputs

Critical for reliable outputs and long-term learning

4 Change Drivers



- 1. Co-design with users
- 2. Train in real work
- 3. Normalize friction
- 4. Incentivize experimentation
- "Adoption isn't a rollout it's a behavior shift."



PROCESS STRATEGY: WORKFLOW BY DESIGN

"Al succeeds when it's built into the way you already work - and improves it."

You don't get Al value from simply patching old workflows. Strategic process redesign is essential.

Intake

Traditional: Email, ad hoc triage

Al-enabled: Auto-classification and routing via portals

Review

Traditional: Junior reads line-by-line

Al-enabled: LLM highlights issues, summarizes content, flags anomalies

Quality Check

Traditional: Second manual pass

Al-enabled: Human-in-the-loop reviews Al outputs and escalates edge cases Al-enabled: Structured outputs, reusable formats, real-time dashboards

Delivery

Traditional: Email attachments, unstructured notes

✓ Embed checkpoints where judgment matters ✓ Use process data to improve both humans and AI

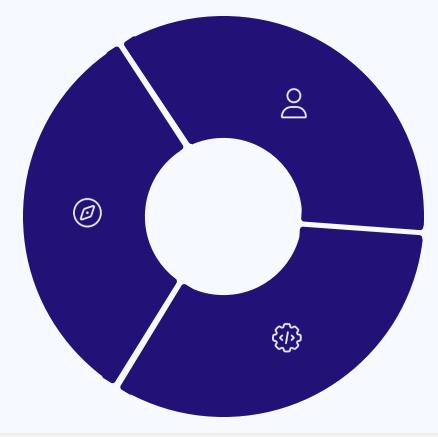


IT ALL HAS TO CONNECT

"If your AI roadmap isn't matched by a people and process roadmap, it's not a strategy — it's a gadget."

Strategy

Sets direction \rightarrow defines people needs



People

Deliver value → only if they're supported to change

Process

Makes it all work \rightarrow or makes it impossible



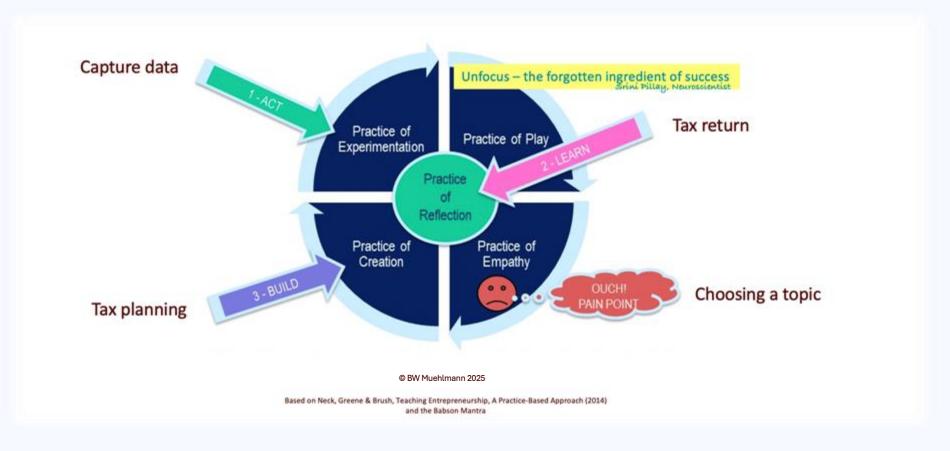
OUTLINE

- Tax risk management & design-thinking mindset
- 2. Tax risk management with technology process
- 3. Innovating Dell patent example "Automatically detecting data anomalies using Al techniques"
- 4. Joining the innovators



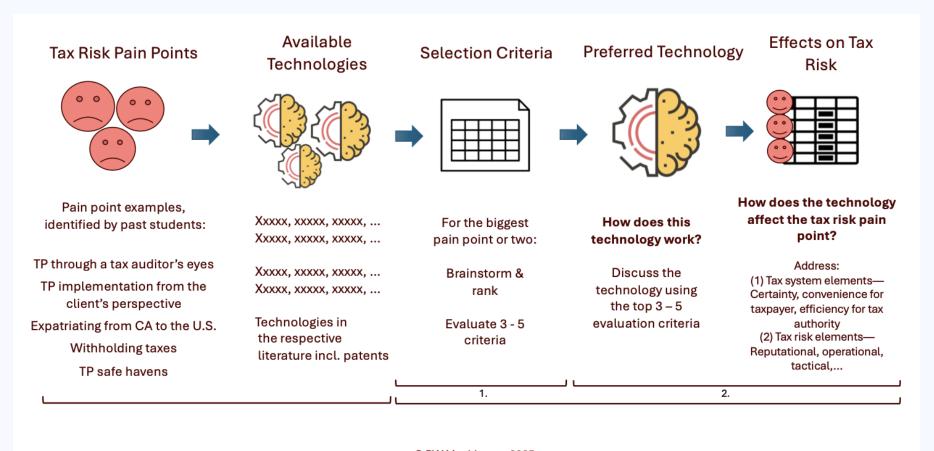
1. TAX RISK MANAGEMENT - DESIGN-THINKING MINDSET

Tax risk: "Possible unforeseen financial losses or unfavorable outcome caused by taxation issues, specifically, some **unforeseen negative factors** in the taxation process."





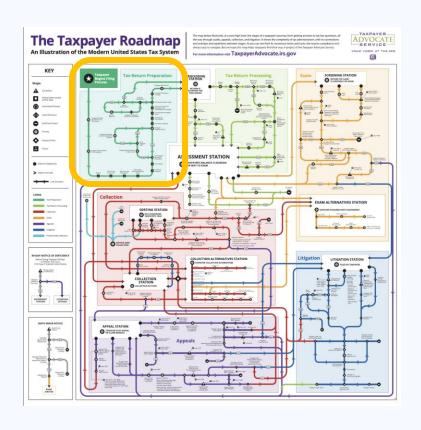
2. TAX RISK MANAGEMENT WITH TECHNOLOGY - PROCESS

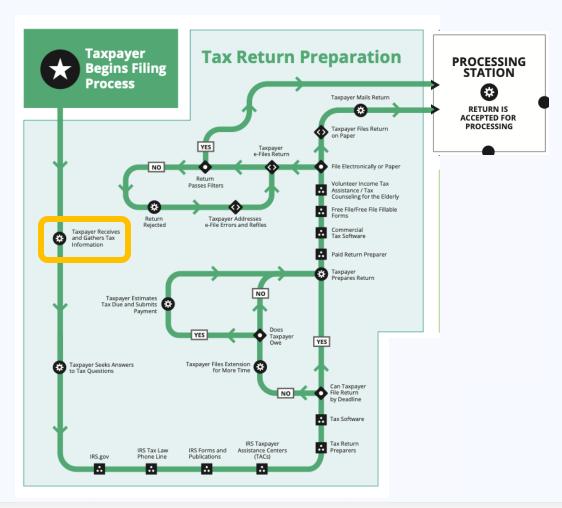


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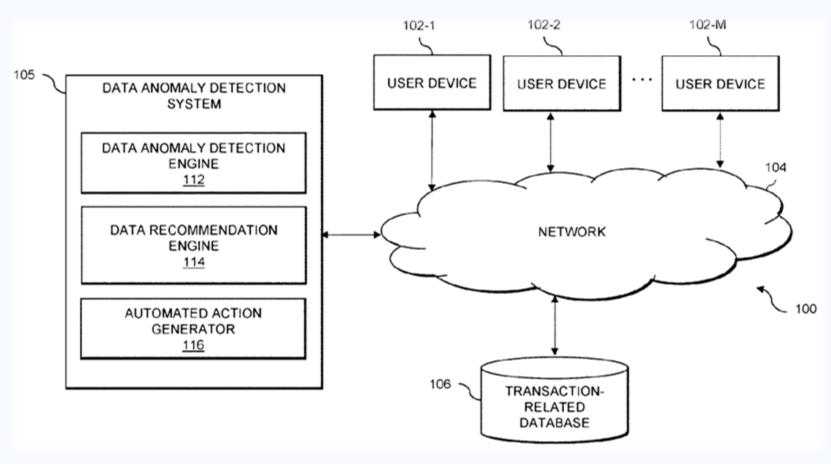
3. AUTOMATICALLY DETECTING DATA ANOMALIES USING AI TECHNIQUES







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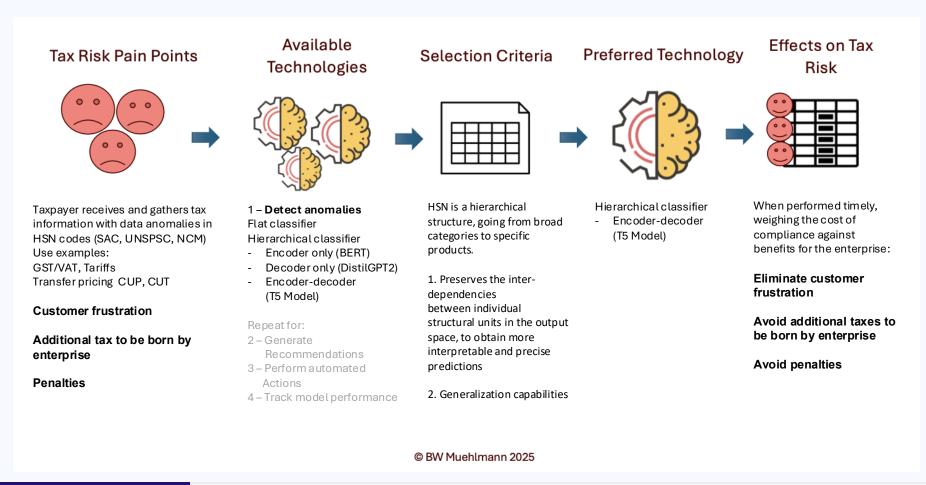


From: U.S. Patent 12,367,530, issued to Dell Technologies, Inc., July 22, 2025



3. AUTOMATICALLY DETECTING DATA ANOMALIES USING AI TECHNIQUES

From: U.S. Patent 12,367,530, issued July 22, 2025, to Dell Technologies, Inc.;
Nath, Wadhwa & Perez, 2025, Domain-Adaptive Small Language Models for Structured Tax Code Prediction, https://arxiv.org/pdf/2507.10880



SPEAKERS: NAMES GO HERE 68

4. JOINING THE INNOVATORS

U.S. Patent 12,367,530, issued July 22, 2025, to Dell Technologies, Inc.



(Re-)Evaluate tax risks

Approach them with empathy toward the key stakeholders of a taxpayer Customers – Employees – Suppliers – Community (Government) – Shareholders Liberate "quiet lives of desperation"

Collaborate to create innovative solutions

12 inventors in 6 countries, of whom 3 are in tax (Years with Dell)

Lead Inventor: Senior Product Manager (6)

Tax Automation Director (26)

Tax Director, EMEA (13)

Tax Compliance, Cross-Product Lead (14)

Embrace digital workers

Their complementary strengths create greater possibilities

Think CUP/CUT in transfer pricing

Focus on your human strengths and become a better version of yourself every day



PEOPLE AND PROCESSES



Articulation of the WHY?



Automating a process Vs Process reengineering



Change management and Training



What's Next?

SPEAKERS: HERSH JOSHI



AI SAFETY = A HUMAN RESPONSIBILITY

If we use, to achieve our purposes, a mechanical agency with whose operation we cannot efficiently interfere once we have started it, because the action is so fast and irrevocable that we have not the data to intervene before the action is complete, then we had better be quite sure that the purpose put into the machine is the purpose which we really desire and not merely a colorful imitation of it.

- Norbert Wiener, 1960

- Safety cannot be an afterthought it should be baked into the design and management of the system
- Al systems can only do what designers and operators permit them to do
- We must ensure the tools meant to aid our efficiency and productivity are socially acceptable in their application and innocuous in their operation

SPEAKERS: HERSH JOSHI 71



DIFFUSION



Al as part of broader digitalization/automation Not just Al for Al's sake

- Not to over-engineer, maximise existing tools e.g. UIPath, Tableau, RPA
- IIR threshold vis outsourcing



Set framework, governance, safety (manin-the-middle)

Diffusion via Tiering

- Prompt engineering class
- Citizen developer
- Hackerthon: bottom's up ideation



Asia

- Broader diffusion (DeepSeek experimentation down each product/business line) rather than centrally led
- Budget constrained



Issues

- Data integrity & confidentiality (usage rights in contracts with 3^{rd} parties)
- Security vs Speed
- Auditability, Control
- Taxpayer's rights

SPEAKERS: SAM SIM 72



EDUCATION AND TRAINING

Taxation of technology

Technology for taxation



EDUCATION AND TRAINING

Taxation of technology

How should taxation rules and practices deal with the digital transformation of society?

Technology for taxation

How should taxation processes use technology?



EDUCATION AND TRAINING

Taxation of technology

How should taxation rules and practices deal with the digital transformation of society?

Technology for taxation

How should taxation processes use technology?

Scientific methods involved in formulating a TAX PROBLEM and expressing its solution in a way that a computer can effectively carry out.



What do I need to research?



PROCESS STRATEGY: WORKFLOW BY DESIGN

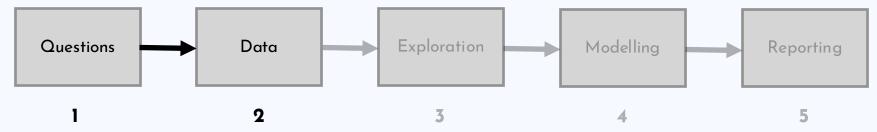
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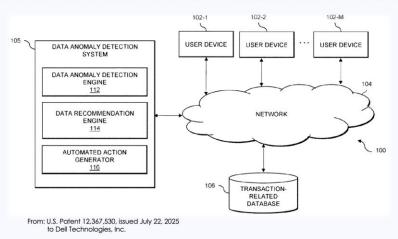
1	2
Intake	Review
Traditional: Email, ad hoc triage	Traditional: Junior reads line-by-line
Al-enabled: Auto-classification and routing via portals	Al-enabled: LLM highlights issues, summarizes content, flags anomalies
3	4
Quality Check	Delivery
Traditional: Second manual pass	Traditional: Email attachments, unstructured notes
Al-enabled: Human-in-the-loop reviews Al outputs and escalates edge cases	Al-enabled: Structured outputs, reusable formats, real-time dashboard
□ ✓ Embed checkpoints where judament matters ✓ Use proces	s data to improve both humans and Al



Acquiring data Cleaning data Storage



3. AUTOMATICALLY DETECTING DATA ANOMALIES USING AI TECHNIQUES

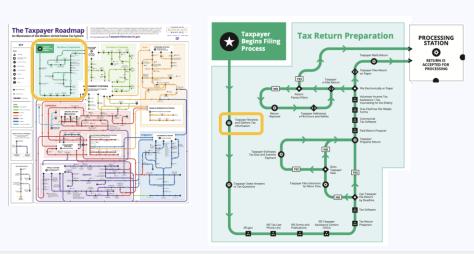




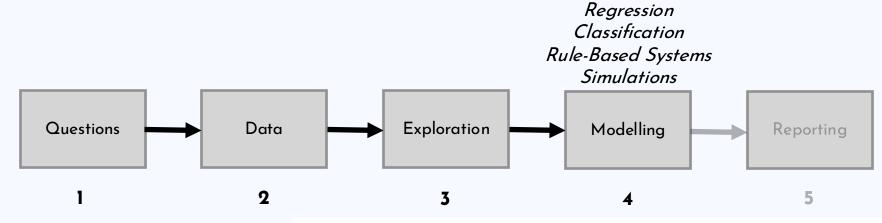
Visualizing data Correlation Outliers Statistical analysis



3. AUTOMATICALLY DETECTING DATA ANOMALIES USING AI TECHNIQUES

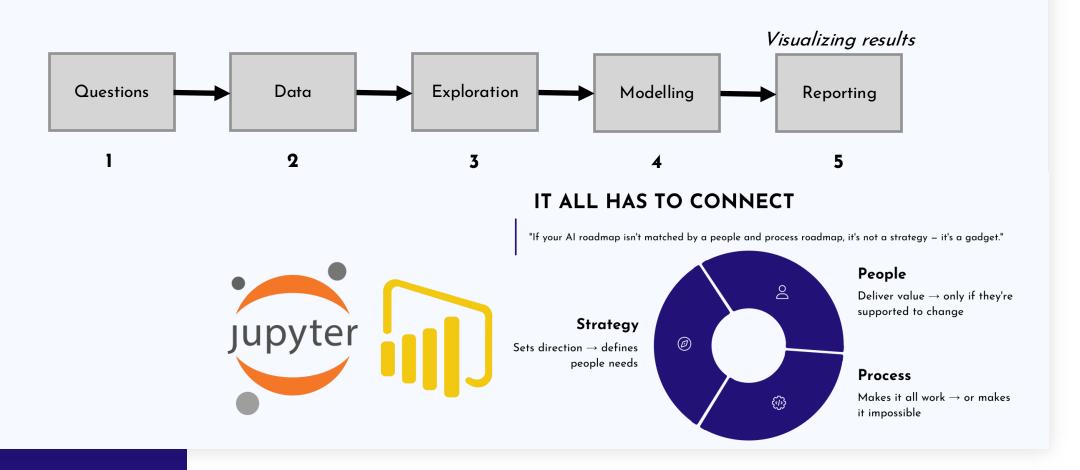






ML Tasks Broad Categories	Supervised	Unsupervised
Discrete	Classification Computer vision Image Classification Speech, handwriting recognition Drug discovery	Clustering K-means, mean-shift Large-scale clustering problem Hierarchical clustering, GMM
Continuous	Regression Computer vision Object Detection Linear, logistic regression	Reduction of Dimensionality PCA, LDA (Kernel) Density Estimation







QUESTIONS?





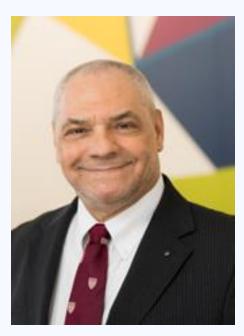
FABIOLA ANNACONDIA, ANARELLA CALDERONI, CHRISTINA DIMITROPOULOU, GEORGE SALIS

SPEAKERS PROFILE









FABIOLA ANNACONDIA

ANARELLA CALDERONI

CHRISTINA DIMITROPOULOU

GEORGE SALIS



OUTLINE

Introduction to CIAT

Digitalizing Core Functions of the Tax Administrations

- 1. Taxpayer registry
- 2. Declarations
- 3. Taxpayer Control Processes
- 4. Dispute Prevention and Resolution
- 5. Other services

Conclusion



WHAT IS CIAT?

- Public international organization
- Founded in 1967
- 42 member countries from American, Africa, Asia and Europe
- Objective: modernization, strengthening, support for tax administrations via: international cooperation, exchange of experiences and information, technical assistance, studies, training, etc.













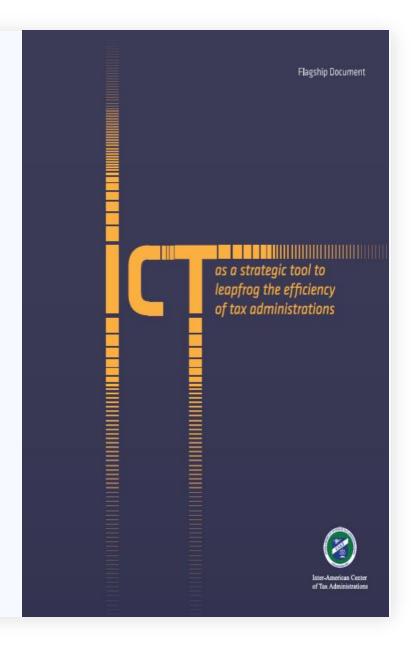






DIGITALIZATION OF THE TAX ADMINISTRATION







DIGITALIZATION OF THE TAX ADMINISTRATION: TAXPAYER REGISTRY



- Biometric identification
 - Mobile updating services
- •Electronic tax domicile for digital communications (CRA mailbox)
- •Digital identification certificates (use technology to unify taxpayer accounts and verify identities)
 - · Used for electronic invoicing
- •Integrating secure data systems and cyber platforms (customs and social security)
 - One stop shop: register, company number, TIN, social security number, city license, fire department, health code, etc.
 - Blockchain based natural persons or legal entities registry



DIGITALIZATION OF THE TAX ADMINISTRATION: DECLARATIONS



- Online filing and notification systems
- Prefilled income tax / VAT returns
- •Online or mobile phone payment systems
 - Recent trend: crypto-payments
- Managing the tax current account holistically
- •CIAT's Digital Economy Compliance tool



DIGITALIZATION OF THE TAX ADMINISTRATION: ELECTRONIC INVOICING



"An electronic document that supports a commercial transaction."

- •Differences between E-reporting and E-invoicing
- •Standardize electronic relationships in the country
 - Mandatory information required for all invoices
 - XML format
- Processing of e-invoices
- •CIAT's anomaly detector for e-invoices



DIGITALIZATION OF THE TAX ADMINISTRATION: TAX CONTROL PROCESSES



- •Neuronal networks/algorithms to detect fraudulent transactions
- Using Al to analyze tax returns and identifying discrepancies
- •Machine learning models to analyze historical data for risk profiling and detecting relationships
- Computerized auditing units
- •Generative Al to predictive taxpayer trends
- •Scoreboard technology to show the level of compliance



DIGITALIZATION OF THE TAX ADMINISTRATION: DISPUTE PREVENTION AND RESOLUTION



- •Enhanced relationship technologies for cooperative compliance (secure communication channels, real time data sharing, monitoring bots)
- •Automation of dispute resolution in cases where arguments can be standardized and tabulated
- •Use of Al to analyze of previous case results to ascertain their consistency
- •Use of Al to analyse of administrative or juridical precedence for informed decision making



DIGITALIZATION OF THE TAX ADMINISTRATION: OTHER SERVICES



- •E-services: chatbots, virtual assistants, personalized nudges/reminders based on the taxpayers' circumstance
- Interactive portal
 - Integration with other government agencies
- Access to authentic/verified digital documents
 - Barcodes, electronic signatures, digital stamp, etc.
- Predictive analytics to forecast revenue collection
- Tax policy (reform) scenario modelling
- Boost employee productivity via automation and copilots



ARTIFICIAL INTELLIGENCE

Al application in **transfer pricing**:

- NLP Processing of financial data to determine information relevant for the functional analysis
- Model what independent companies would have done to determine:
 - economic rational
 - value chain assesment
 - benefits test for intragroup services

Some cautionary remarks:

- Regulatory framework is essential
- Use with discretion
- Potential negative impact on public trust
- Potential to reinforce existing biases
- Privacy and data security issues

ANARELLA CALDERONI Classification : Public 93



OUTLINE

- 1. Introduction
- 2. Digital Tax Administration in LATAM
- 3. The EU experience with E-Invoicing
- 4. Legal Challenges from Digitalization and Automation in Tax Procedures
- 5. The EU Approach to Mitigation of Al risks



1. INTRODUCTION

- **Digitalization is reshaping the DNA of tax administration**, challenging long-standing bureaucratic models and redefining how states engage with taxpayers
- Core Functions Go Digital:
 - e-Registration: Smarter identification & onboarding
 - e-Filing & Pre-filling: Automation of return processes
 - e-Assessment & e-Payments: Real-time compliance and collection
 - Digital Audit & Risk Profiling: Data-driven enforcement
 - Automated Taxpayer Services: Chatbots, Al-driven guidance, proactive alerts
- Not One Size Fits All: Countries vary in: legal framework, institutional capacity and digital maturity
- International bodies (OECD, IMF, IDB) are actively shaping the digital agenda through standards and benchmarks (e.g. e-invoicing frameworks, e-audit guidelines), soft law, and technical assistance and funding



2. DIGITAL TAX ADMINISTRATION IN LATAM

LATAM	Digital services tax	E-invoice system
Brazil	 Online services through web portal and mobile applications (i.e. registration, tax filling, access to tax-related information, requests for refunds, etc.); online real-time chats with a TA agent or an automated tax assistant; pre-filled tax returns; digital book-keeping for corporate taxpayers 	-E-invoicing became mandatory for all taxpayers in 2008; - Advanced clearance electronic invoicing model, where suppliers must submit e-invoices to the tax authority to be cleared before issuing them to a client; - Brazil's e-invoicing system is complex, as it uses different systems depending on the product category, and penalties apply for non-compliance
Chile	-Pre-filled VAT returns; -Electronic communication and processing of tax returns; -Integrated Taxpayer Assistance System (ITAS); -electronic tax payments	-E-invoicing since 2003 (first LAC to introduce!) - Clearance model (centralized model): the TA directly validates and certifies the e-invoices issued by taxpayers. B2B and B2C transactions subject to VAT are reported online
Mexico	Virtual assistant for tax filling	-E-invoicing involves participation of private trusted third-party providers, that validate the e-invoice sign and seal them, and remit them to the issuers and the TA: (i) the taxpayer obtains the e-firma, (ii) a digital seal certificate is issued; (iii) an application is used to issue e-invoices by extensible markup language (XML), and; (iv) an authorized provider is contacted or the (free) online platform of SAT-M is used to submit e-invoices

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3. THE EU EXPERIENCE WITH E-INVOICING



• E-Invoicing is the electronic exchange of an invoice document between a supplier and a buyer. An elnvoice is an invoice that has been issued, transmitted and received in a structured data format which allows for its automatic and electronic processing, as defined in Directive 2014/55/EU

- Southern and Eastern Europe (e.g., Italy, Spain, Greece, Poland, Romania): Tend to push mandatory B2B e-invoicing primarily for VAT control and anti-fraud.
- Northern and Western Europe (e.g., Germany, Netherlands, Nordics): often start with B2G only, with voluntary B2B adoption or future roadmap.
- Clearance: Invoice must be pre-approved by tax authorities before being sent to the customer. Used in Italy, France (future), Spain, Poland, Romania.
- Post-Audit/Reporting: Invoices sent freely, but details must be reported to tax authorities. Used in Hungary, Portugal.

- The ViDA (VAT in the Digital Age) proposal by the European Commission aims to harmonize digital reporting and e-invoicing requirements EU-wide by 2028.
- This will likely require mandatory digital reporting and e-invoicing across the EU for cross-border B2B transactions using structured e-invoices (EN 16931 compliant).





4. LEGAL CHALLENGES FROM DIGITALIZATION AND AUTOMATION

- 1. Lack of Explicit Legal Framework for Algorithmic Transparency
- 2. Data Governance and Cybersecurity
- 3. Transformation of TA-Taxpayer Relationship
- 4. Due process, accountability
- 5. Discretion vs automation
- 6. The "black box" paradox
- 7. Decision for in-house or outsourced technology





5. THE EU APPROACH TO MITIGATION OF DIGITALIZATION'S RISKS

- Risk-Based Regulation under the Al Act
 - Al systems used by tax authorities for fraud detection or risk profiling may qualify as **high-risk**, triggering strict obligations, although big carve out for systems used in tax
- Data Protection by Design (GDPR)
 - Automated processing of taxpayer data must comply with GDPR principles, including lawfulness, purpose limitation, and proportionality, with special safeguards for automated decision-making (Art. 22 GDPR) (again huge carve out for public interest reasons)
- Fundamental Rights Impact Assessment (FRIA)
 - The Al Act requires **ex-ante assessments** for high-risk Al, which may make tax authorities anticipate impacts on taxpayer rights (e.g. discrimination, due process, data misuse)





OUTLINE

- 1. Reasons to apply technology in VAT
- 2. For what we can use technology?
- 3. EU: historical development on e-invoicing
- 4. New real time digital reporting system (e-invoicing)
- 5. Digital reporting Variation of approaches
- 6. Timeline Adoption of B2B e-invoicing in the European Union
- 7. Examples

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REASONS TO APPLY TECHNOLOGY IN VAT

- VAT systems are vulnerable to VAT fraud (Combat fraud)
- Reduce administrative burden of honest businesses
- Reduce burden of tax administrations
- Reduce VAT Gap

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FOR WHAT WE CAN USE TECHNOLOGY?

- E-invoicing
- Billing and invoicing
- Accounting systems
- Reporting
- Invoice matching
- Tax determination
- Tax data management
- Logistics, etc



EU: HISTORICAL DEVELOPMENT ON E-INVOICING

- 2001: Council Directive 2001/115 amended Sixth VAT Directive (simplifying, modernising and harmonising invoicing)
- 2010: Council Directive 2010/45 amending VAT Directive (rules on invoicing)
- 2014: Council Directive 2014/55 (mandatory electronic invoices complying with the European standard for public procurement)
- 2017: European standard on e-invoicing (EN 16931) was developed and published by the European Committee for Standardization (CEN)
- **2022**: ViDA proposal (8 December 2022)
- 2025: ViDA adoption (Mandatory implementation from 1 July 2030/1 January 2035)

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NEW REAL TIME DIGITAL REPORTING SYSTEM (E-INVOICING) - 2030/35

- For B2B transactions within the EU (all suppliers and customers submit data to local tax authorities) transaction by transaction
- Centralize VIES system
- No later than (10) ten working days after the taxable event
- By taxable person or third party
- Domestic and intra-Community transactions
- Obligatory: E-invoices (not necessary acceptance by receiver)
- Condition of prior authorization of validation by tax administration
- Elimination of summary invoices
- New data to include in the invoice, for example, bank account, etc.
- Eliminate recapitulative statements



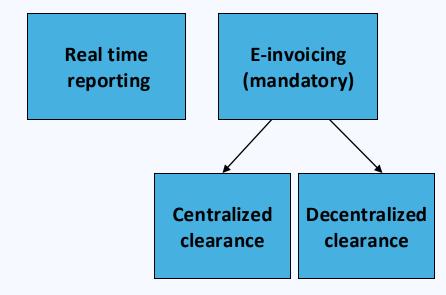
DIGITAL REPORTING - VARIATION OF APPROACHES

Periodic Transaction Controls (PTCs)

Continuos Transaction Controls (CTCs)

VAT listings

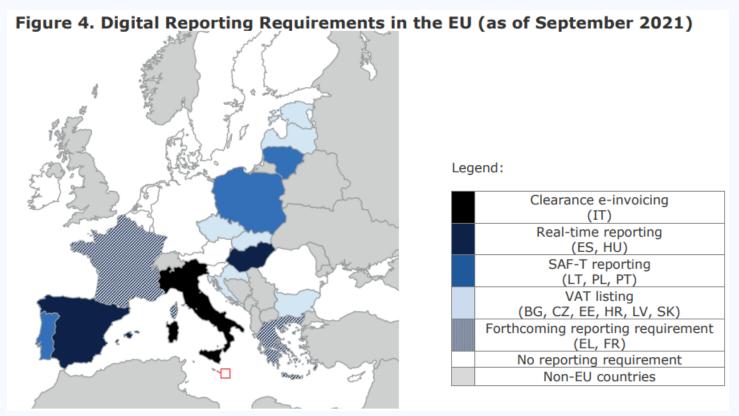
SAF-T



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DRR IN THE EU (VIDA FINAL REPORT)



Source: European Commission - VAT in the Digital Age - Final report

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TIMELINE - ADOPTION OF B2B E-INVOICING IN THE EU

2019 Italy

2025Estonia*
France*
Germany*
Hungary**

2027
Estonia*
France*
Germany*
Greece
Spain*













2024 Romania 2026
Belgium
Croatia
France*
Poland
Spain*

2028Finland
Germany*
Latvia



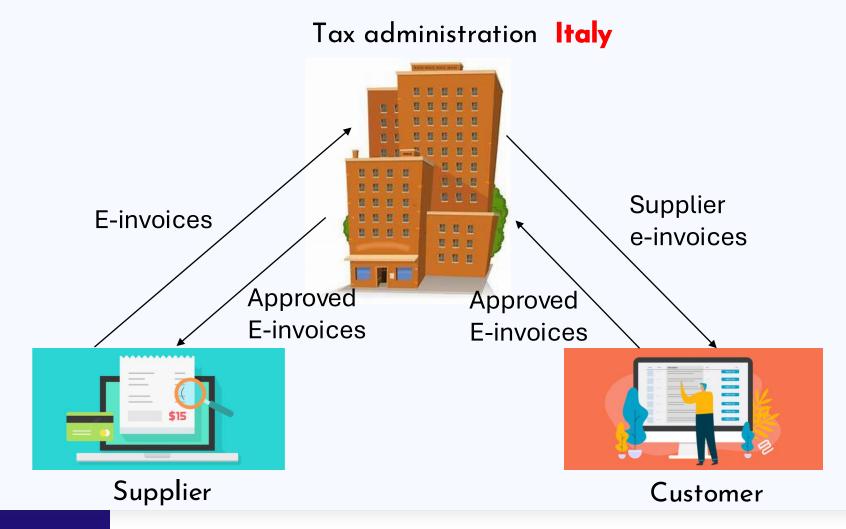
REAL TIME REPORTING

Tax administration Transaction data Hungary: 24 hs Invoices Spain: 4 days received Invoices **Payment** Supplier Customer

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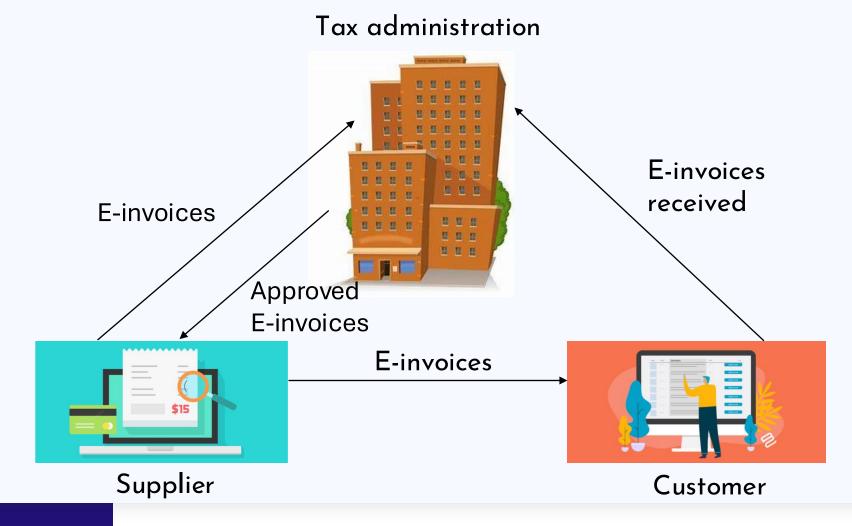
ITALY E-INVOICES: CENTRALIZED CLEARANCE SYSTEM



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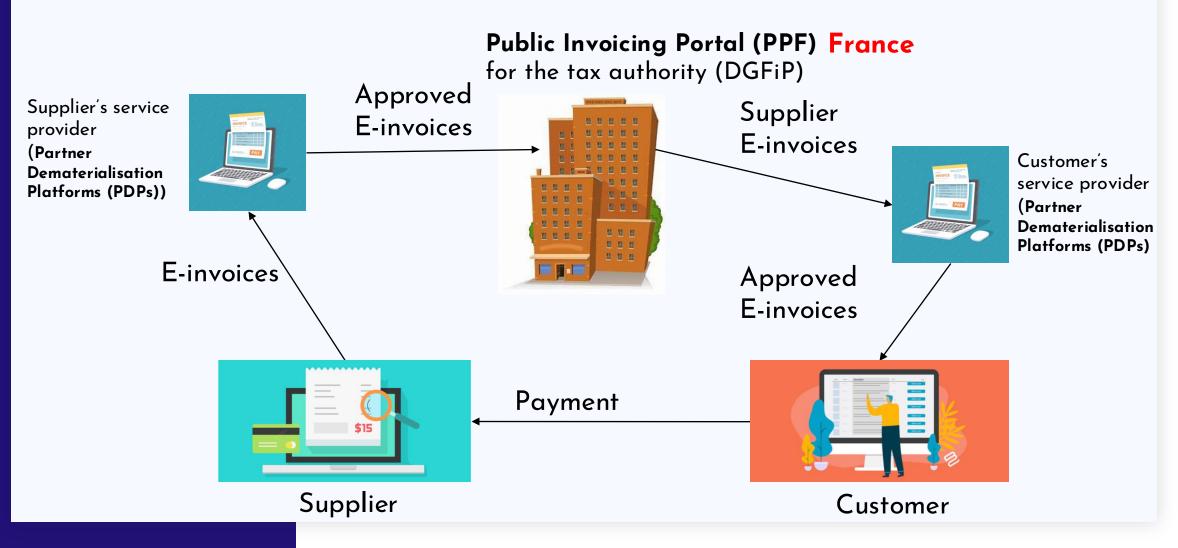
E-INVOICES: DECENTRALIZED CLEARANCE SYSTEM



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FRANCE E-INVOICES: CTC (5 CORNER MODEL)



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UNITED KINGDOM

Making Tax Digital (MTD)

The UK's digital VAT reporting system, MTD, has been mandatory since April 2022 for all VAT-registered businesses. It requires:

- VAT records to be extracted from ERP systems.
- Submission of VAT returns via API to HMRC.
- Use of digital links between systems if multiple software tools are involved
- E-invoicing
 - **B2G** mandatory since 2020
 - **B2B** voluntary, requires customer consent

Public consultation in Feb. 2025 titled "Promoting electronic invoicing across UK businesses and the public sector"

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RETHINKING & APPLYING DIGITAL TAX TECHNOLOGIES IN A DYNAMIC GLOBAL TAX COMPLIANCE ENVIRONMENT

TRANSFORMING THE CORPORATE TAX FUNCTION & ENHANCING COMPLIANCE THROUGH B2G INNOVATION

OUTLINE

- 1. Adopting advanced Tax Technology in Automation in Corporate Tax Functions
- 2. Bilateral (B2G) Tax Data Management & Addressing Regulatory Complexity
- 3. Best Practices for Applying Digital Tax Compliance
- 4. Transforming Tax Functions with Connected Digital Compliance Technology
- 5. Understanding Technology Disparities & Uneven Pace of Adoption between Taxpayers & Tax Administrations

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ENHANCING EFFICIENCY & COMPLIANCE PRECISION

Increasing Efficiency & Accuracy

Automation streamlines repetitive tasks in tax compliance, reducing human error and enabling resources for more valuable activities.

Adjusting Scalability for B&G Alike

Automated digital systems can process large volumes of tax data & information, ensuring consistency and accuracy as corporate tax operations scale with transactional growth and reposting requirements.





ADJUSTING SCALABILITY TO EFFICIENT TAX DATA INTEGRATION

Continuous Data Integration & Management

Advanced technologies facilitate the seamless integration of tax data from various business systems, enhancing reporting accuracy and compliance for both corporations and tax administrations.

Continued Agility in Regulatory Changes & Accurate B2G Reporting

Technology-driven approaches enable organizations to quickly adapt to regulatory changes, ensuring accurate compliance with evolving laws and regulations.





Global Compliance & Real-Time Reporting

Impact of Shifting Global Regulation & Reporting Standards Shifting Global regulations create tax uncertainty and a complex tax environment, characterized by varying international, national, and local laws that companies must navigate.

Digital Technologies in Regulatory & ComplianceAutomation simplifies cross-border compliance by standardizing processes, making it easier to manage complicated tax regulations and reducing risks.

Increasing Real-Time Reporting & E-invoicing Requirements
The increase in digital tax authorities' mandates related to real-time
reporting and e-invoicing emphasizes the necessity of timely and
accurate tax data reporting.

Reducing Taxpayer Penalties & Accelerating Revenue Collection

Automated reporting supports meeting deadlines and minimizes the risk of penalties due to inaccuracies.



TAX DATA ANALYTICS, AI, & INTERNATIONAL COMPLIANCE

❖ The Peril, Risks, & the Promise - Are we there yet?

Advanced Analytics and Al Applications

 Advanced analytics utilize AI to identify patterns and flag potential compliance risks, enhancing decision-making processes.

PwC Report & Vertex - Agentic Al offers dynamic autonomy for the tax function, creating new opportunities to boost accuracy and efficiency.

Compliance & Regulatory Tracking Technologies

 Applying technology plays a central role in tracking and reporting global transactional shifts, as well as ensuring accurate compliance with diverse regulatory standards.





Cloud-Based Solutions & Al Automation Tools

Cloud-Based Solutions

Cloud-based solutions facilitate real-time data management, empowering organizations to continuously monitor and respond to tax obligations.

Automation Tools

Automation tools significantly reduce the administrative burden, streamlining tax preparation and submission processes for organizations.

Real-world Applications of AI in Global Tax Compliance
Generative AI - Tax Research Applications

Agentic Al - human-centric tax operations models accelerate the transformation of the digital tax function



DISPARITY IN THE PACE OF ADOPTION & RESOURCE CONSTRAINTS

Agility of Business (MNCs) vs. Tax Administrations

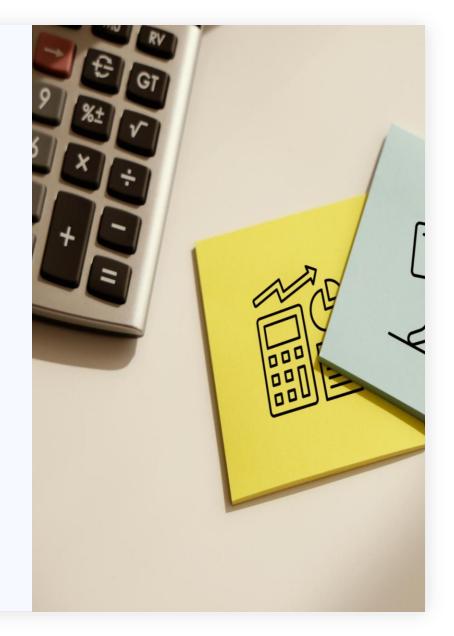
 Businesses are more agile in adopting tax compliance automation technologies due to their focus on efficiency and risk management.

Challenges for Governments' Tax Administrations

 Tax administrations face significant resource constraints, including budget and infrastructure limitations, which hinder their adoption of technology.

Investment in Digital Technologies & Automation

 Private organizations prioritize investments in automation technologies to gain a competitive advantage in the marketplace.





PROCESS ALIGNMENT, CC & TCF COLLABORATION OPPORTUNITIES

Understanding Technology Capacity & B2G Process Alignment

Disparities in tax functions automation can lead to misalignment between corporate & government processes, thereby complicating compliance, creating obstacles to efficiency & precision.

Importance of Collaboration

Narrowing the technology adoption gap enables smoother data exchanges and reduces compliance burdens for all parties.

Improving Compliance Efficiency

Efficient collaboration can streamline processes and enhance compliance, benefiting both corporate and government entities.





CONCLUSION - THE CBA & THE "REAL" SOCIAL COST

Enhancing **Operational** Efficiency

Tax technology automation significantly improves efficiency in tax functions (B2G), reducing time and manual processes required.

Ensuring Accurate B2G & G2B -Compliance

Technology helps organizations ensure compliance with tax regulations, minimizing the risk of errors and penalties.

Addressing Regulatory Complexities

Tax technology enables **B&G** organizations to navigate complex regulations and adapt quickly to changes in the tax landscape.



QUESTIONS?





August 15, 2025

IFA Canada Tech & Tax Seminar

2.0

Organized by IFA Canada (in collaboration with TEI, HEC Montréal, and Gowling WLG)

LOCATION: HEC Montréal, Downtown Campus

REGISTRATION: FREE IN-PERSON EVENT

IFACANADA.ORG