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UPRAVA ZA INDIREKTNO - NEIZRAVNO OPOREZIVANJE
УПРАВА ЗА ИНДИРЕКТНО ОПОРЕЗИВАЊЕ

DETECTING VAT TAX FRAUD USING AI

CONCEPT OF ARTIFICIAL INTELLIGENCE (AI)

Artificial intelligence (AI) represents capability of computing based systems to perform tasks typically associated with human intelligence

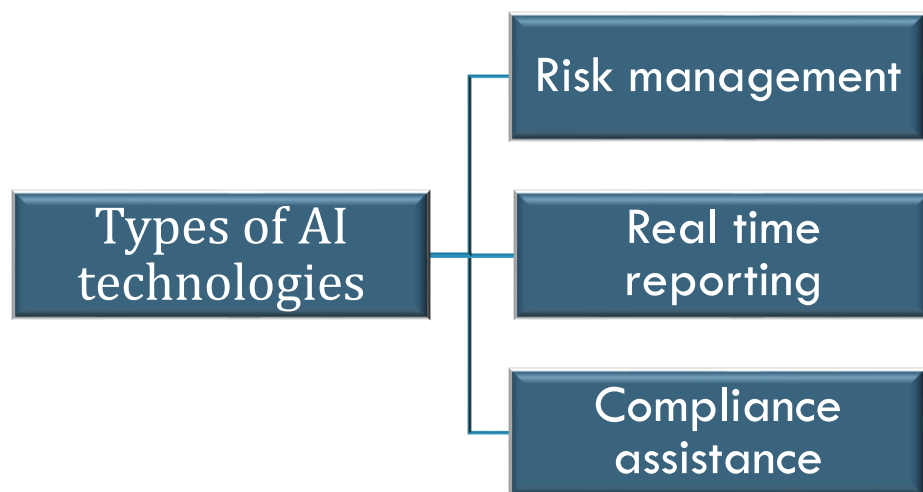
That is technology that allows machines to perform tasks that typically require human intelligence, such as learning, reasoning, problem-solving, and decision-making

AI has ability to discover and analyze large amounts of data by recognizing patterns and learning from previous experiences

In 1970s first time AI technology apply in tax administration (TAXMAN)

Popular AI chat bots: Chat GPT, Gemini, Deepseek, Microsoft Copilot

APPLICATION OF ARTIFICIAL INTELLIGENCE IN TAX ADMINISTRATION



- Risk management algorithms are based on processing data obtained from records, declarations and tax invoices, providing the ability to analyze data in real time
- AI is used to find tax gaps in the submitted data, to identify patterns and risk areas on the basis of which certain conclusions can be drawn and decisions made.
- The key is to test it on a large number of high-quality data with continuous monitoring of the model
- Variety AI tools based on:
 - 1. Predictive analytics (BI tools: Tableau, Microsoft Power BI, Alteryx, RapidMiner, Python)
 - 2. Machine learning (ML)
 - 3. Natural language processing (NLP)
 - 4. Data mining using open source informations search for publicly available information and data from various sources including social networks – OSINT (Open Source Intelligence)
- CAATS (Computer Assisted Audit Tools) : IDEA Caseware, ACL Analytics
- Forensic tools for analytics (EnCase, FTK, Magnet Axion)
- Analytic AI tools: (SAS Fraud framework, IBM SPSS)

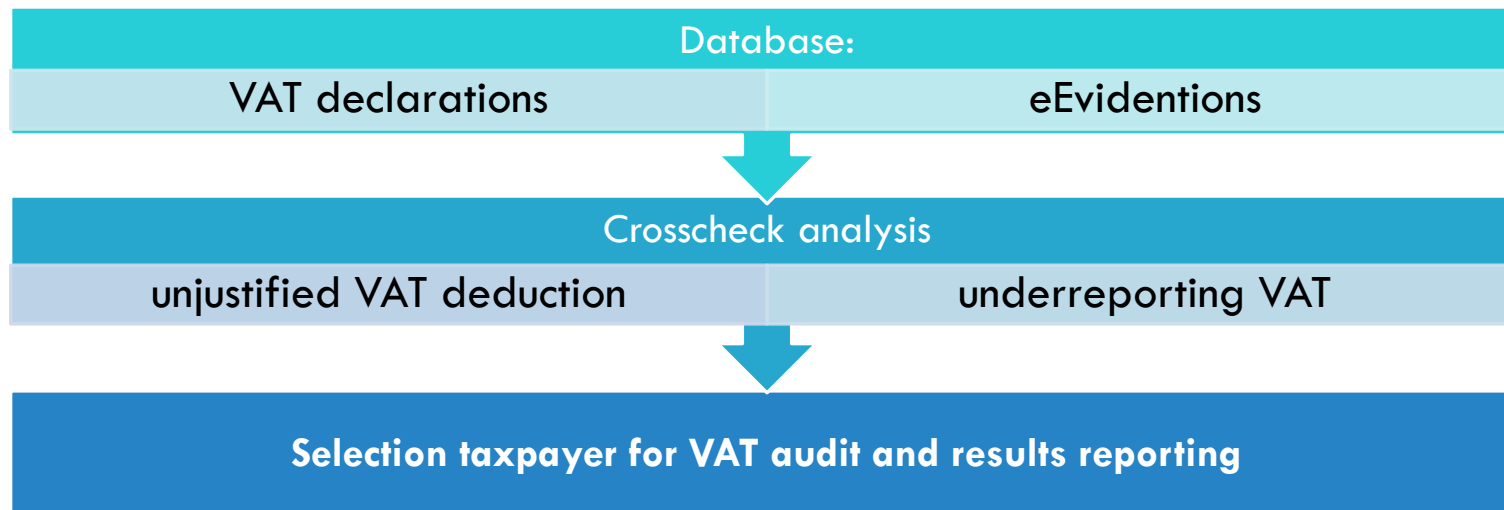
BENEFITS OF USING ARTIFICIAL INTELLIGENCE



The main goal of AI is to autonomously perform tasks wich includes language understanding, text generation, problem solving, and interaction with people

MOST COMMON TYPES OF VAT FRAUD AND CROSS CHECK DATA ANALYSIS

VAT fraud - illegal activities that evade the collection or payment of VAT



SPECIFIC EXAMPLES AND WAYS OF DETECTING VAT FRAUD USING AI



- anomaly detection on VAT declarations data (could use NLP to detect errors)
- checking the compliance between submitted VAT declarations and e-evidentions
- flags inconsistencies between base and VAT amounts
- cross check buyer seller networks to detect VAT fraud schemes
- when analyzing e-invoices, it is possible to use an encoder and decoder to link the text of both the invoice number and the invoice description, and compare it with the industry in which it operates
- detection of purchases from suppliers whose activities suggest that purchases from them generally cannot be used for VAT deduction
- sector analysis based on registered activity code and deviation from average margin or non-inherent purchase
- VAT deduction with duplicate incoming invoices
- missing invoices checking by serial number

EXAMPLE OF USING CHAT GPT IN ANALYSING DATA

The screenshot shows a web browser window with the ChatGPT interface. The user's prompt is: "Analyze irregularities in issued invoices to see if there are any invoices that are missing from the document chronologically according to the invoice number and send me the table".

The AI response includes a table of chronologically missing invoices:

Missing From	Missing To	Previous Invoice	Previous Date	Next Invoice	Next Date
7722	7722	IF-07721-01-22	17.11.2022	IF-07723-01-22	17.11.2022
8220	8220	IF-08219-01-22	07.12.2022	IF-08221-01-22	07.12.2022
8385	8385	IF-08384-01-22	13.12.2022	IF-08386-01-22	13.12.2022
8582	8582	IF-08581-01-22	19.12.2022	IF-08583-01-22	19.12.2022

The AI also notes: "These four invoice numbers are missing chronologically in your dataset. Each entry shows the gap between two consecutive invoices — potentially indicating missing or unrecorded invoices for those specific numbers and dates."

The user's follow-up prompt is: "and now get me the tables with invoices which the base is not harmonized with VAT amount".

The AI responds: "It seems like I can't do more advanced data analysis right now. Please try again later. However, here's what you can expect once the analysis runs: The script will automatically: Detect the base (osnovica) and VAT (PDV) columns in your file,"

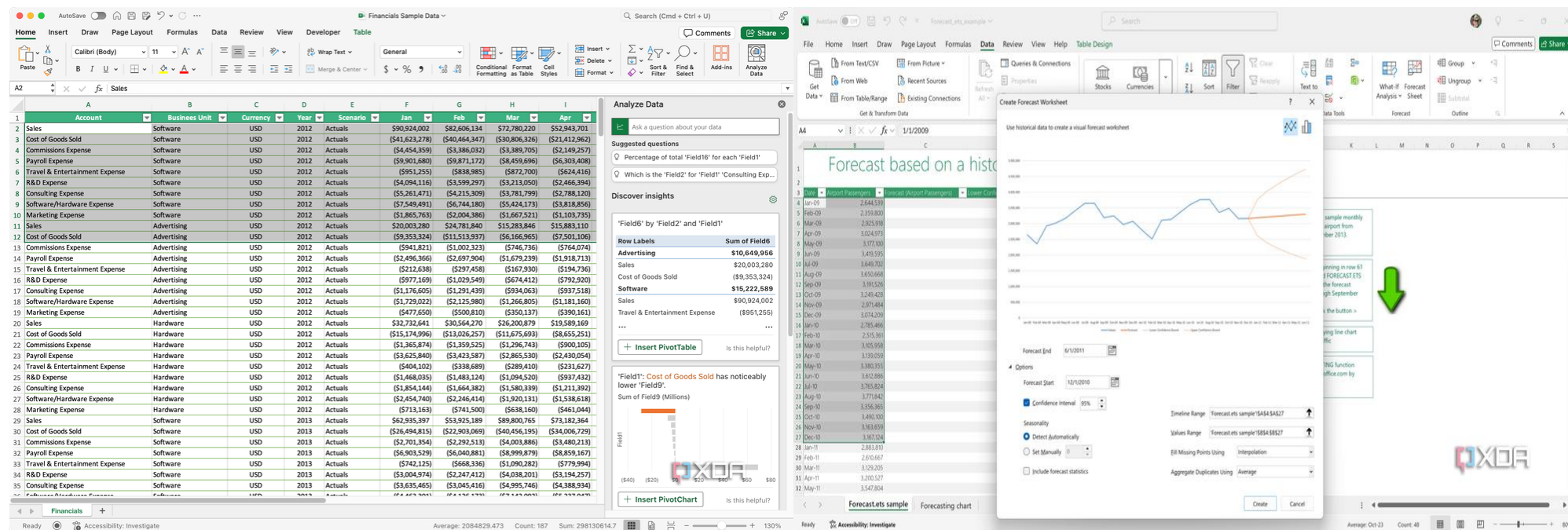
The interface includes a sidebar with options like "New chat", "Search chats", "Library", and "Projects". The bottom of the window shows a Windows taskbar with various application icons and system information.

USING AI WITH MICROSOFT COPILOT IN EXCEL

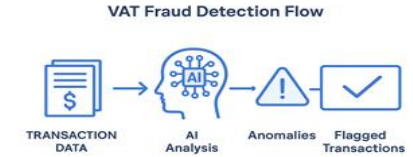
Excel has an integrated powerful artificial intelligence tool with helps us to:

- analyze the data
- make predictions
- forecasting the trends
- ask questions and get answers without complex formulas
- advanced analysis with Python in Excel
- use Microsoft Copilot (quick answer, Smart GPT5 or deep analyze the data)

EXAMPLE OF USING AI TOOLS IN EXCEL



BEST PRACTICES OF USING AI IN TAX ADMINISTRATION



- In Austria Predictive Analytics Competence Center (PACC) which use predictive analytics and artificial intelligence to detect tax evasion in 2023 realised around EUR 185 million tax income
- Italy use AI Tools which name is VeRa – algorithm focused on risk detection (cross-references taxpayer fillings with earnings , property records, bank accounts, and electronical payment data). In 2022 VeRa reported one million high risk VAT cases. In 2023 the Revenue Agency introduced an AI-powered chatbot to support audit processes
- The Australian Taxation Office (ATO) is employing advanced technologies to enhance the accuracy and efficiency of tax return submissions
- UK HMRC is building large language model to help identify VAT evasion
- Malta claims it raised tax by EUR 400 million in 2024 using predictive AI
- Greece is establishing a specialist AI unit using MyDATA VAT transactions for detecting fraud
- Spain implemented a real time VAT reporting system and virtual assistance
- India ADAIT (Advanced Analytics in Indirect Taxes) project which using data analytics

CONCLUSIONS

AI brings better tax fraud detection, improving taxpayer compliance and efficiency TA

AI is a game changer which transforms VAT fraud detection from reactive to proactive with possibility early detection

Also brings easier connection of data from different data sources including social networks

Future of AI in Tax compliance is in DRR for intra-Community B2B transactions based on e-invoicing (is to be introduced EU-wide as od 2030) – both suppliers and customers would need to report data from the e-invoices

Tax authorities would share the data reported by suppliers and customers in a central EU Wide database, allowing that data to be cross – checked (VAT information exchange system) as a part of ViDA package in EU

Also in future it expects better cross border cooperation with much more data share between Tax administration

Artificial intelligence will not replace auditors, it will bring better productivity, but they must be educated to understand how artificial intelligence works and how to use its full potential

Ethical and operational challenges (data quality and privacy) – tax laws must recognise possible ethical implications of AI driven decisions ensuring that systems are used fairly and transparently



THANK YOU ON
ATTENTION

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