

Digitalization of Tax Law Developments for AI and Taxation 2023 & beyond

WU

WIRTSCHAFTS
UNIVERSITÄT
WIEN VIENNA
UNIVERSITY OF
ECONOMICS
AND BUSINESS



Prof. Dr. Robert Risse

Department of Public Law and Tax Law

Director of the WU Tax Law Technology Center (TLTC)

Steef Huibregtse

CEO and owner of TPA Global and e-Bright.



Institute for Austrian and International Tax Law • www.wu.ac.at/taxlaw



The Global Tax Technology Community | Cheat Sheet November 2023

THE GLOBAL TAX TECHNOLOGY COMMUNITY

CHEAT SHEET NOVEMBER 2023

e-bright

EVENTS - NOVEMBER / DECEMBER 2023

09-Nov	Latest Developments in Tax Technology: Unlock the Power of AI - Steef Huibregtse & Prof. Dr. Robert Risse - e-Bright
16-Nov	The Future of Tax Talent - Steef Huibregtse - Groningen University
23-Nov	DAC 7 - Robert De Vries - e-Bright
07-Dec	The Key Role of Knowledge Management in Tax Function Transformation : Case Study - Geoff Peck - e-Bright

PEOPLE

ADVISORY

TPA Global

EY

Deloitte

PwC

KPMG

Accenture

IBM

Ryan

Grant Thornton

BDO

Innovate Tax

TRAINING

e-Bright

WU Vienna

Xyto Taxology

TEI

IBFD

UAntwerp

HIRING

EtaxJobs

Harvey John

CBO Search

Hays

COMMUNITIES & LINKEDIN

GLOBAL TAX TECHNOLOGY COMMUNITY

THSL

Tax Group

TIF Synergy

The Tax Prism Magazine

VATupdate

#tacs

TECHNOLOGY AND PROCESSES

HYBRID

AI POWERED

Thomson Reuters

Avalara

VATCalc

eClear

DataSnipper

Armslength.ai

Algonomia

TOOLS

Alteryx

Orbitax

BlueDot

Taxually

Taxback

Marosa

SAS Viya

Wolters Kluwer

insightsoftware

CHALLENGERS

VATCalc

Stripe Tax

Taxdoo

Fonoa

Aibidia

TaxMarc

SOVOS

Loctax

Tax Model

TP Genie

TP Tuned

Blika

FourQ

LCNLegal

Digital Tax Technologies

Ex Nihilo

E-INVOICING & FINTECH

Pagero

Edicom

SNI

Thomson Reuters

SOVOS

Avalara

Basware

Tradeshift

Comarch

TriFinance

Cygnet

Workiva

Finistra

SAP

Microsoft

Oracle

Advance Tax Compliance

ADD-ONS

Keeyns B.V

TaxMarc

Deloitte ITL

Ryan

SOVOS

DataSnipper

Aeolus Compliance Tracker

Onerax

ESTABLISHED & GLOBAL/REGIONAL

Thomson Reuters

Vertex

eClear

TTI

Cygnet

Vertex

Avalara

SOVOS

Meridian

TP Catalyst

Another source of information:
<https://www.taxpunk.de/tools/>

Institute for Austrian and International Tax Law | www.wu.ac.at/taxlaw

2

Technology | *Buzzword Bonanza*

Big Data *Blockchain* *Automated Digital Services* *User Data*

EU Artificial Intelligence Act *Process Mining* *CBDC* *Virtual PE*

Predictive Analytics *Deep Learning* *Sharing and Gig Economy* *Rise of the Robots*

Digital Business Models *OECD Pillars* *AEIO* *Large Language Models*

NFT *SAF-T* *E-Invoicing* *MiCA* *DST* *Platform Economy*

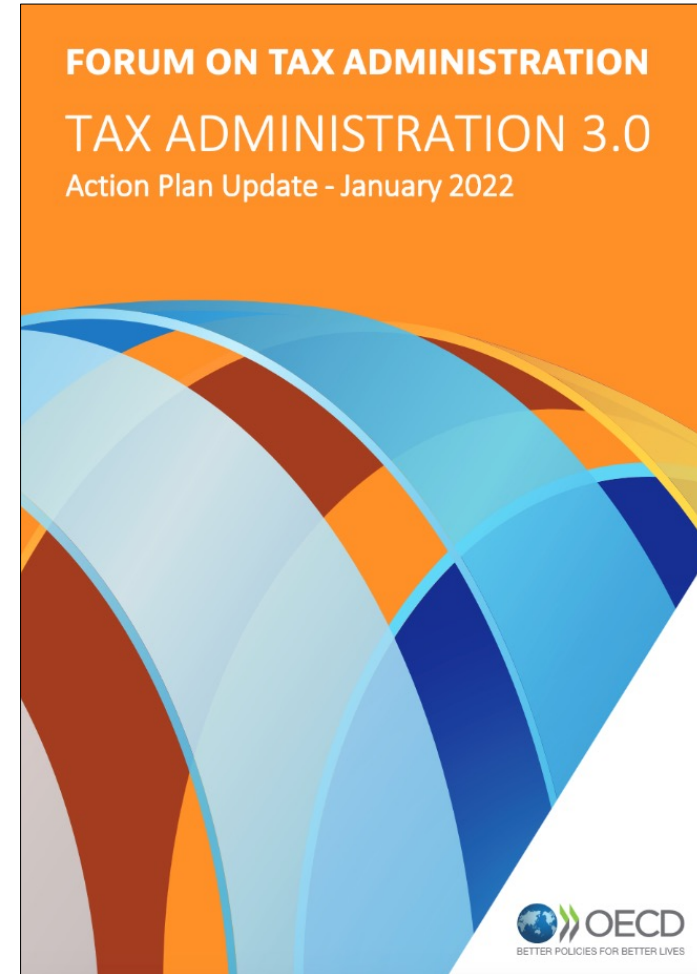
Crypto Assets *Machine Learning* *Generative AI*

DeFi *Smart Contracts* *Neural Networks* *Natural Language Processing*

Virtual Currency *Data Mining*

ChatGTP *Artificial Intelligence* *Tax Administration 3.0*

- ***OECD's "Going Digital" and "Tax Administration 3.0"***
 - Unlocking the Digital Economy – A Guide to Implementing Application Programming Interfaces in Government (2019)
 - Implementing Online Cash Registers: Benefits, Considerations and Guidance (2019)
 - The Sharing and Gig Economy: Effective Taxation of Platform Sellers (2019)
 - Tax Administration 3.0: The Digital Transformation of Tax Administration (2020)
 - Digital Transformation Maturity Model (2021)
 - Supporting the Digitalisation of Developing Country Tax Administrations (2021)
 - Analytics Maturity Model (2022)
 - Tax Administration 3.0 and Electronic Invoicing (2022)
 - Tax Administration 3.0 – Action Plan Update (2022)
 - Tax Administration 3.0 and the Digital Identification of Taxpayers (2022)
 - Tax Administration 3.0 and Connecting with Natural Systems (2022)
- ***OECD's Tax Administration 2022 (2022) and Inventory of Tax Technology Initiatives***



- **Technology** → Big Data (“BD”) + Machine Learning (“ML”) and/or logic/knowledge-based systems (“KBS”) → Output of content, predictions, recommendations, or decisions influencing real or virtual environments (≠ traditional, algorithmic (“if-then”) automated decisional systems) → *A system that uses rules defined solely by natural persons to automatically execute operations is not considered an AI system.*
- **Definition** → EU Artificial Intelligence Act (COM(2021)206 and Doc. 15698/22)

Article 3

Definitions

For the purpose of this Regulation, the following definitions apply:

- (1) ‘artificial intelligence system’ (AI system) means a system that is designed to operate with elements of autonomy and that, based on machine and/or human-provided data and inputs, infers how to achieve a given set of objectives using machine learning and/or logic- and knowledge based approaches, and produces system-generated outputs such as content (generative AI systems), predictions, recommendations or decisions, influencing the environments with which the AI system interacts;

Note on scope (“high risk”):

AI systems specifically intended to be used for administrative proceedings by tax and customs authorities as well as by financial intelligence units carrying out administrative tasks analysing information pursuant to Union anti-money laundering legislation should not be considered high-risk AI systems used by law enforcement authorities for the purposes of prevention, detection, investigation and prosecution of criminal offences.

- Document automation
- Relentless connectivity
- Electronic legal marketplace
- E-learning
- Online legal guidance
- Legal open-sourcing
- Closed legal communities
- Workflow and project management
- Embedded legal knowledge
- Online dispute resolution
- Document analysis
- Machine prediction
- Legal questions answering

This development forecast would also require the legal / **tax consulting** companies, the **public administration**, the **legal function** as well as the **accounting** and **tax function** to drive into a **new area of work**.

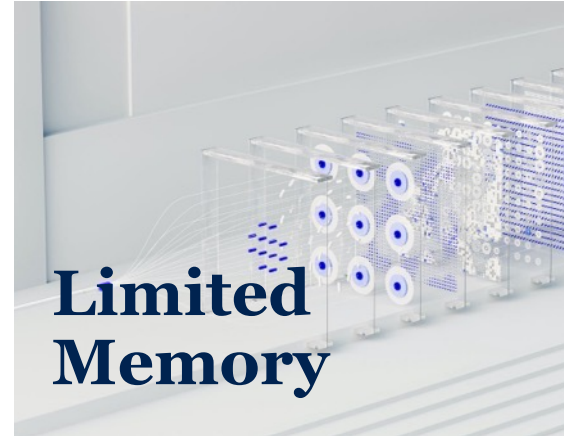
* Richard Susskind: Tomorrow's Lawyers, 2nd edition, Oxford 2017, Page 45

Four Types of Artificial Intelligence

Evolution of artificial intelligence



Classic, weak AI that can only perform a task for which it was specifically programmed.



Most common type of weak AI used today. It collects and analyzes data and applies it to current events.



Theoretical and powerful AI to perceive, understand and respond to human emotions.



An AI that, in theory, can reach or even exceed human-level consciousness.

AI in Taxation

Tax Tech Challenges for taxation

WU

WIRTSCHAFTS
UNIVERSITÄT
WIEN VIENNA
UNIVERSITY OF
ECONOMICS
AND BUSINESS

 e-bright



Institute for Austrian and International Tax Law • www.wu.ac.at/taxlaw



Standard on Ethics of AI

AI in society

Business, politics and society need to be aware of their **ethical responsibility** regarding sustainable data management and AI applications.

At its general conference in November 2021, UNESCO presented a comprehensive **global recommendation** to establish a solid **ethical foundation** for the use of artificial intelligence.

*The aim is to guide countries in building **legal frameworks on ethical AI deployment.***

UNESCO Recommendation on the Ethics of Artificial Intelligence

- Protect human rights
- Data protection
- Prohibit social scoring and mass surveillance
- Guidelines for monitoring and analysis
- Environmental protection

...



- **Risks and Opportunities** → Impact on business models, on society, on productivity, on labor markets etc.
- **Ethics and Regulation** – “Input” (data, models) and “output” (e.g., predictions, recommendations, decisions) → E.g., Trustworthy AI (Policy and Investment, 2019; Ethics, 2019), Ethics of AI (UNESCO, 2021), GDPR (EU Regulation 2016/679) and EU Artificial Intelligence Act (COM(2021)206 and Doc. 15698/22)
- **AI and Law**
 - **General: Impact on Law** → Law enforcement (e.g., Artificial Intelligence and Robotics for Law Enforcement, 2018), criminal law and liability (e.g., The ethics of artificial intelligence: Issues and initiatives, 2020), trade law (e.g., A/CN.9/1012/Add.1), but also AI as legal risk, e.g., cybercrime (Europol, 2023)
 - **Specific: Impact on Taxation**

- **Specific: Impact on Taxation** → Data analytics and/or machine learning
 - **Data** → E-filing (between ~ 85% and 98%), e-invoicing, Central Electronic System of Payment information (CESOP), VAT Information Exchange System (VIES), reporting from private sector (wages and salaries, pensions, dividends, interest, capital gains/losses, donations etc), EOIR, AEOI, internet-scraping tools, ...
 - **Tax practice and administration** (→ OECD, Tax Administration 2022 (2022))
 - Automating tax return preparation and filing
 - Monitoring tax compliance and improvement
 - Enhancing risk assessment, tax audit processes, and fraud/anomaly detection
 - Forecasting and predictive analytics
 - **Tax policy** → Trend identification, policy forecasting, revenue forecasting
 - **Use cases in tax administrations, e.g.,**
 - Advanced Data Analysis Techniques For Assurance Engagements (Canada)
 - AI strategy, including anomaly detection (Singapore)
 - Using machine learning to identify missing traders (Bulgaria)
 - Selecting cases for e-audit (China)
 - Predictive Analytics Competence Center (Austria)
 - Artificial Intelligence Working Group (MIMCS) (Hungary)

- **GDPR** (EU Regulation 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, [2016] OJ L 119, p. 1)
- Rights related to **automated decision making including profiling** (Art. 22)
 - "... decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her ..." → *Required intensity of "human-in-the-loop"?*
- **Taxation** → Balance with public interest (Art. 6, 23)
 - Law-based restriction of GDPR rights and protection for necessary and proportionate measure in matters of "taxation" (Art. 23), but must respects the essence of the fundamental rights and freedoms
 - Tax compliance and tax evasion prevention may justify deviation from personal data protection
- See also the European ethical Charter on the use of Artificial Intelligence in judicial systems and their environment (2018)

Article 22

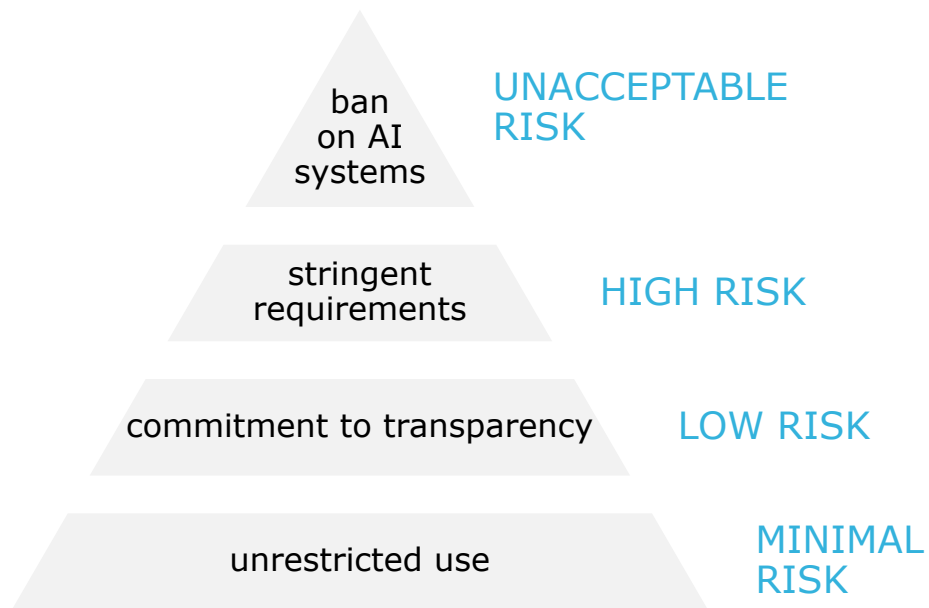
Automated individual decision-making, including profiling

1. The data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her.
2. Paragraph 1 shall not apply if the decision:
 - (a) is necessary for entering into, or performance of, a contract between the data subject and a data controller;
 - (b) is authorised by Union or Member State law to which the controller is subject and which also lays down suitable measures to safeguard the data subject's rights and freedoms and legitimate interests; or
 - (c) is based on the data subject's explicit consent.
3. In the cases referred to in points (a) and (c) of paragraph 2, the data controller shall implement suitable measures to safeguard the data subject's rights and freedoms and legitimate interests, at least the right to obtain human intervention on the part of the controller, to express his or her point of view and to contest the decision.
4. Decisions referred to in paragraph 2 shall not be based on special categories of personal data referred to in Article 9(1), unless point (a) or (g) of Article 9(2) applies and suitable measures to safeguard the data subject's rights and freedoms and legitimate interests are in place.

EU's Artificial Intelligence Act

Proposed regulatory framework on the use of artificial intelligence

RISK ASSESSMENT AS PER THE AIA:



The Artificial Intelligence Act (AIA) is a proposed legislative package that addresses the use and regulation of AI.

It aims to reconcile artificial intelligence with **EU values** and ensure its safe use in society.

The AIA is expected to be passed by the **end of 2023**.

AI in Taxation

Tax Tech

How to apply?

WU

**WIRTSCHAFTS
UNIVERSITÄT
WIEN VIENNA
UNIVERSITY OF
ECONOMICS
AND BUSINESS**

 e-bright

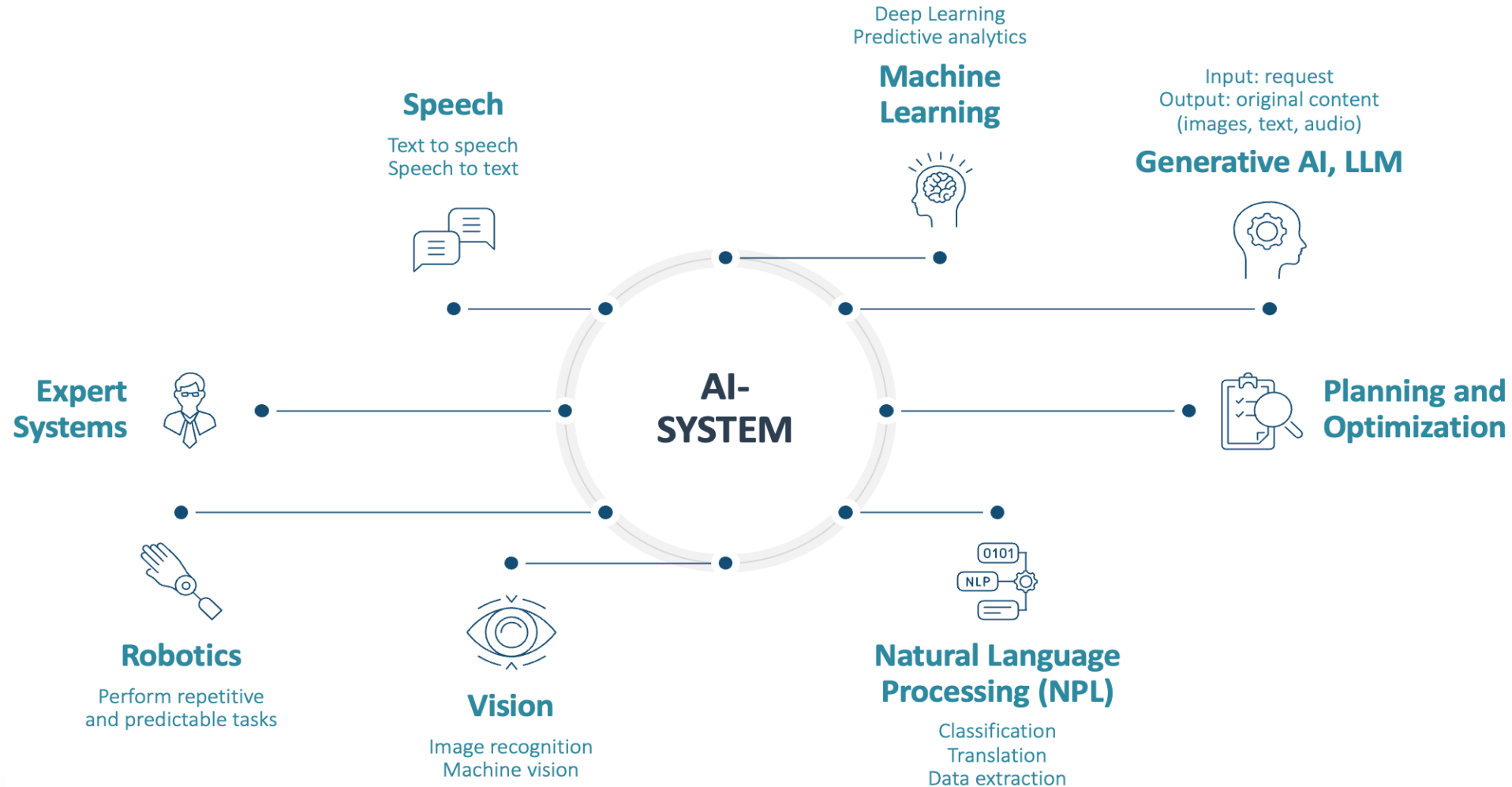


Institute for Austrian and International Tax Law www.wu.ac.at/taxlaw



AI SUB-FIELDS

What can artificial intelligence do for YOU ?



OPPORTUNITIES AND CHALLENGES

Benefits and risks of artificial intelligence



Benefits

Automation of routine tasks

Improved decision making

Personalized services

Progress in medical research

Increased efficiency in
production and logistics

Creativity and innovation
through recognizing patterns
and problems

Risks

Data protection and privacy

Ethics and accountability

Job displacement

Fairness and discrimination

Security and opportunity
for misuse

Transparency and
explainability of AI systems



AI in Taxation Tax Tech Development in 2023

WU

WIRTSCHAFTS
UNIVERSITÄT
WIEN VIENNA
UNIVERSITY OF
ECONOMICS
AND BUSINESS



Institute for Austrian and International Tax Law www.wu.ac.at/taxlaw



OPENAI AND CHATGPT

Latest development

ChatGPT

This AI was released by OpenAI in November 2022 and has created buzz around the world.

The chatbot is built on deep learning and helps its users solve their problems. Its capabilities range from creating texts and business plans and generating codes.

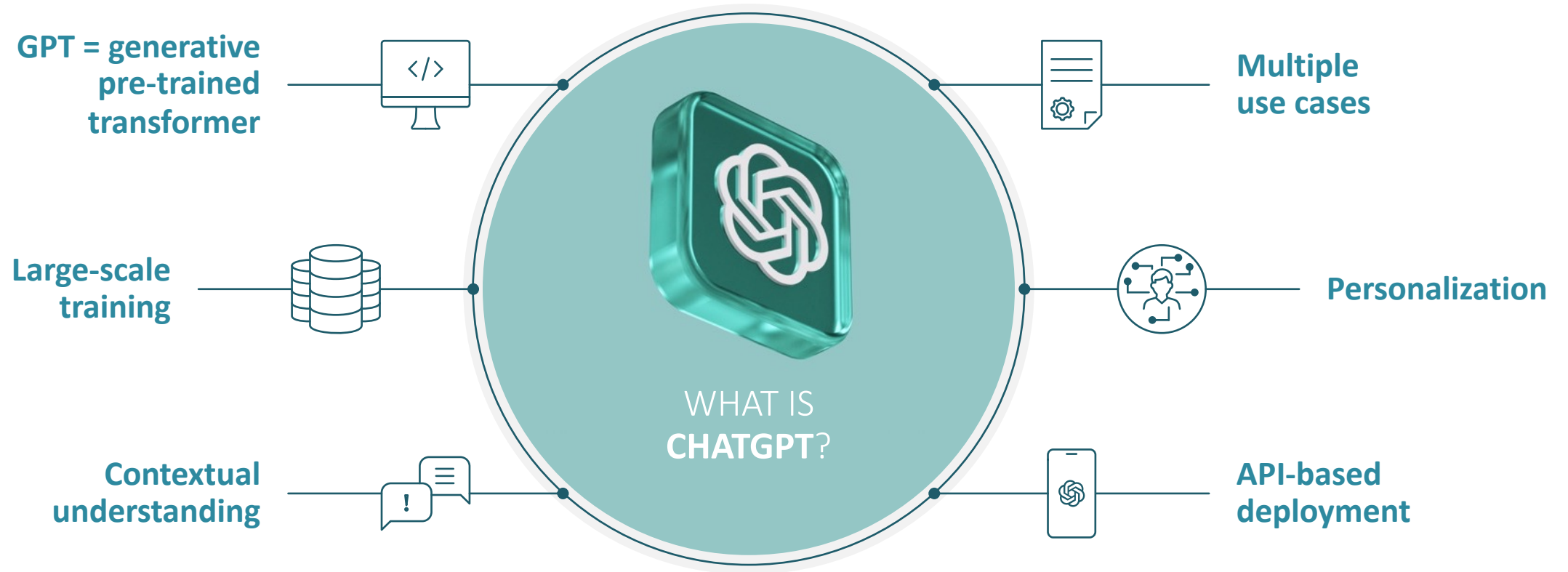
Progress in artificial intelligence development:

US-based OpenAI is engaged in artificial intelligence research. The goal is to offer an adaptive artificial intelligence.



WHAT IS CHATGPT?

ChatGPT as generative AI



WORKING WITH CHATGPT

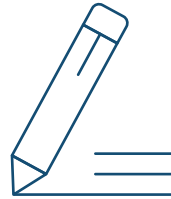
ChatGPT can already perform these tasks

Answer Questions



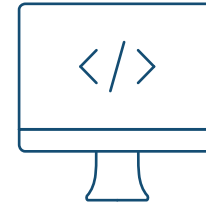
ChatGPT uses a **dialog to answer questions** on a wide variety of topics. This allows the chatbot to respond to older questions and information from the chat.

Translate



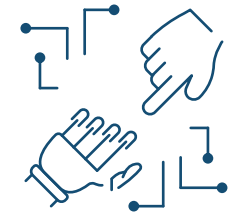
ChatGPT can be used to translate text into different languages. Specific styles can also be applied (e.g., business English).

Automate Tasks



ChatGPT can be used to **automate tasks**. This includes creating texts, generating codes and even answering e-mails.

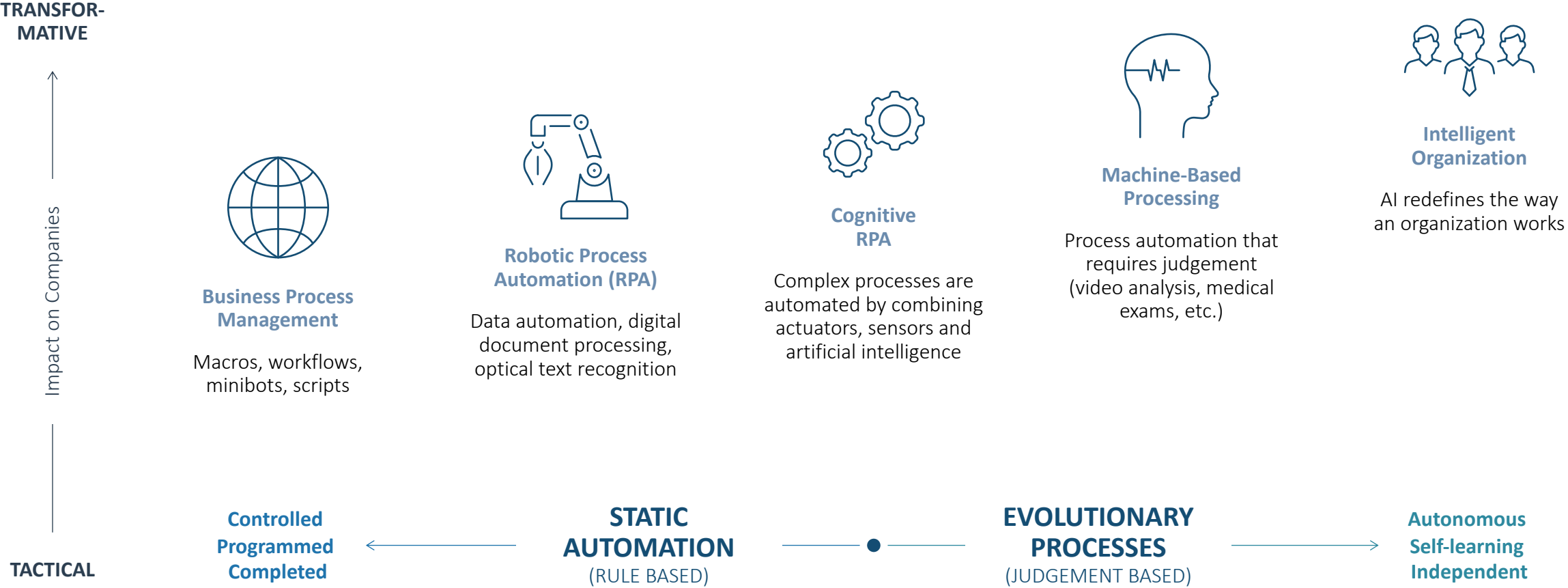
Integrate



Through **interfaces such as API, SDK**, and other methods, Open AI's software should be able to integrate with various other systems like **Python** programming etc.

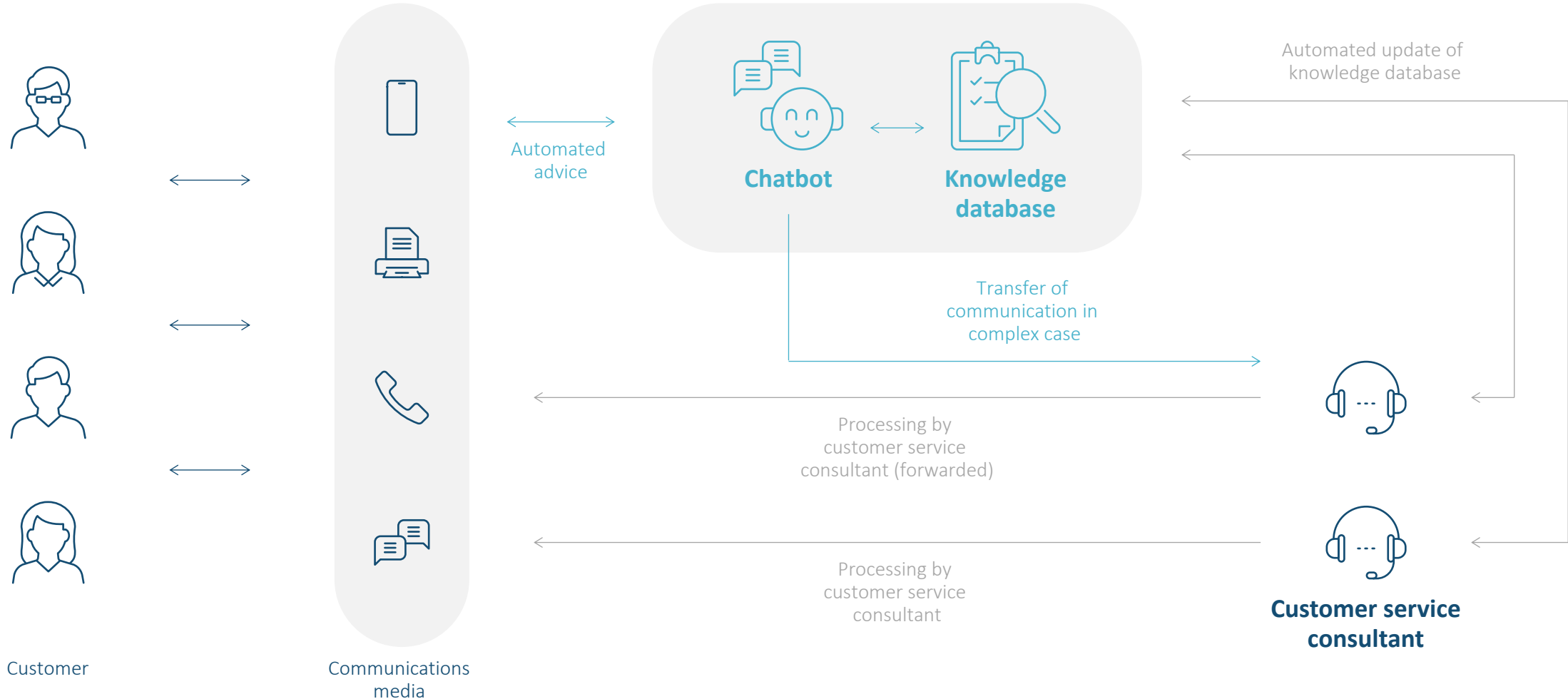
CORPORATE TRANSFORMATION THROUGH AI

From static automation to self-optimizing processes



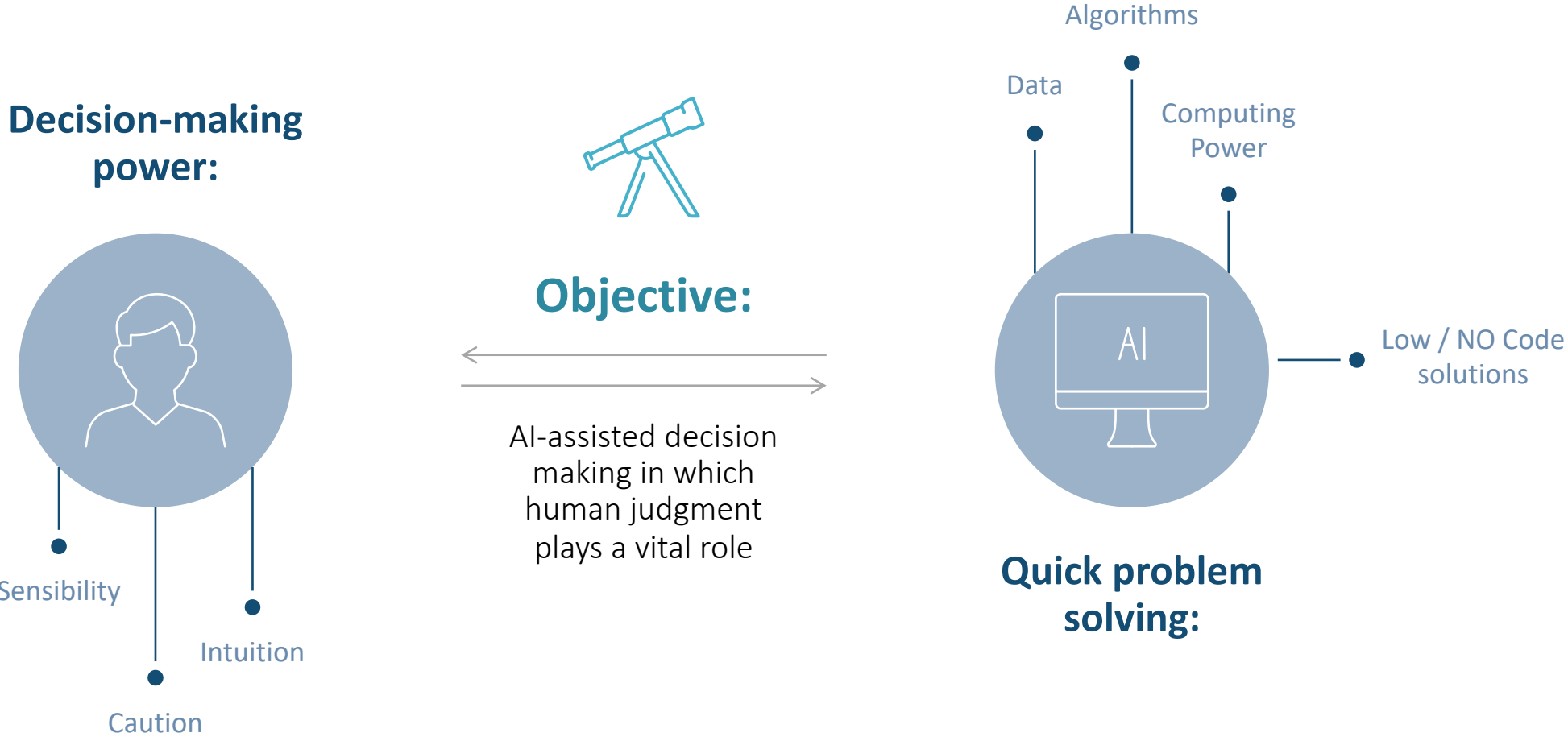
EXAMPLE: PROCESS OF A CHATBOT REQUEST

AI in customer service



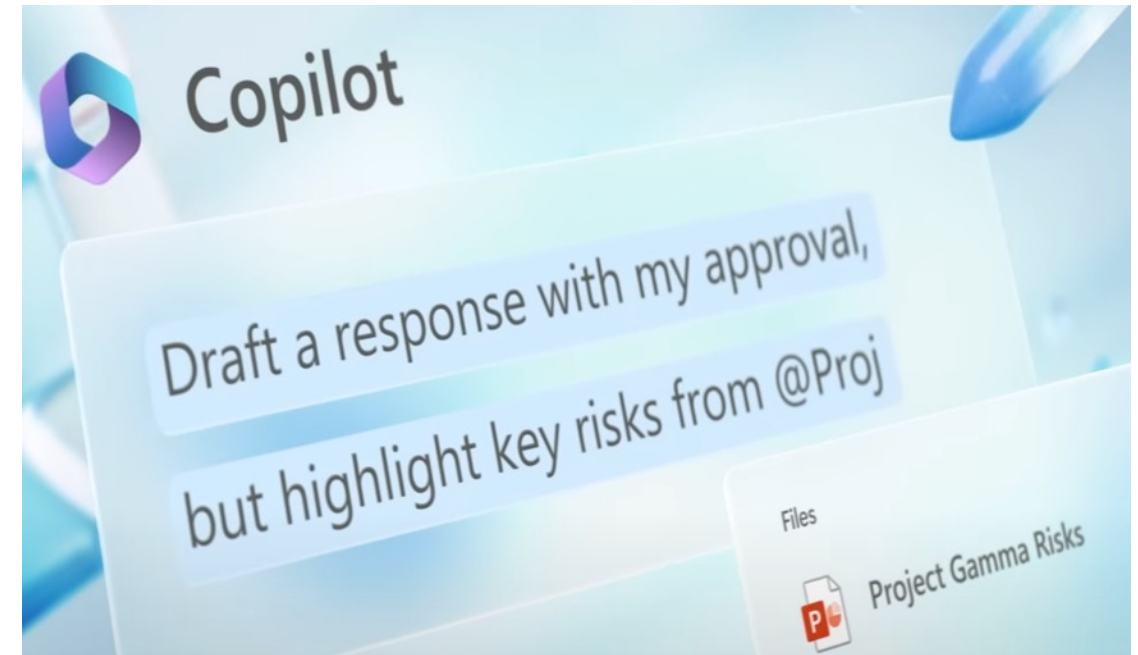
MEANINGFUL COOPERATION BETWEEN HUMANS AND AI

Humans have control and ultimate authority



Microsoft Copilots- coming soon

- Microsoft is uniquely positioned to deliver enterprise-ready AI with the Copilot System.
- Copilot is more than OpenAI's ChatGPT embedded into Microsoft 365.
- It's a sophisticated processing and orchestration engine working behind the scenes to combine the power of LLMs, including GPT-4, with the Microsoft 365 apps and your business data in the Microsoft Graph — now accessible to everyone through natural language.



THREE TRENDS THAT WILL SHAPE AI

Foundation models, synthetic data and human understanding

Foundation Models

01

Foundation models are high-performance AI models that provide a reusable base system that acts as the foundation for additional systems.

They are trained with a large, uncategorized data set and can solve various tasks. Initial examples include ChatGPT, BERT, and DALL-E.

Synthetic Data

02

Data is essential to the continued development of AI systems. But human data is fraught with flaws, gaps and can be biased.

Synthetic data is data generated by computers to augment or replace real data.

Human Understanding

03

For AI systems to interact easily with humans, they need to be capable of understanding human emotions.

This development is still several years away. However, once it progresses, the next level of AI systems can be developed.



VIENNA UNIVERSITY OF
ECONOMICS AND BUSINESS

Department for Public Law and Tax Law
Institute for Austrian and International Tax Law

Prof. Dr. Robert Risse
Building D3, 2nd floor
Welthandelsplatz 1
1020 Vienna

Robert.Risse@wu.ac.at

www.wu.ac.at/taxlaw

T +43-1-313-36-5989

M +49 172 692 1417

Thank you very much for
your attention!

