THE IMPACT OF ARTIFICIAL INTELLIGENCE (AI) ON LEADERSHIP

NAVIGATING THE CHALLENGES AND OPPORTUNITIES OF THE AI ERA
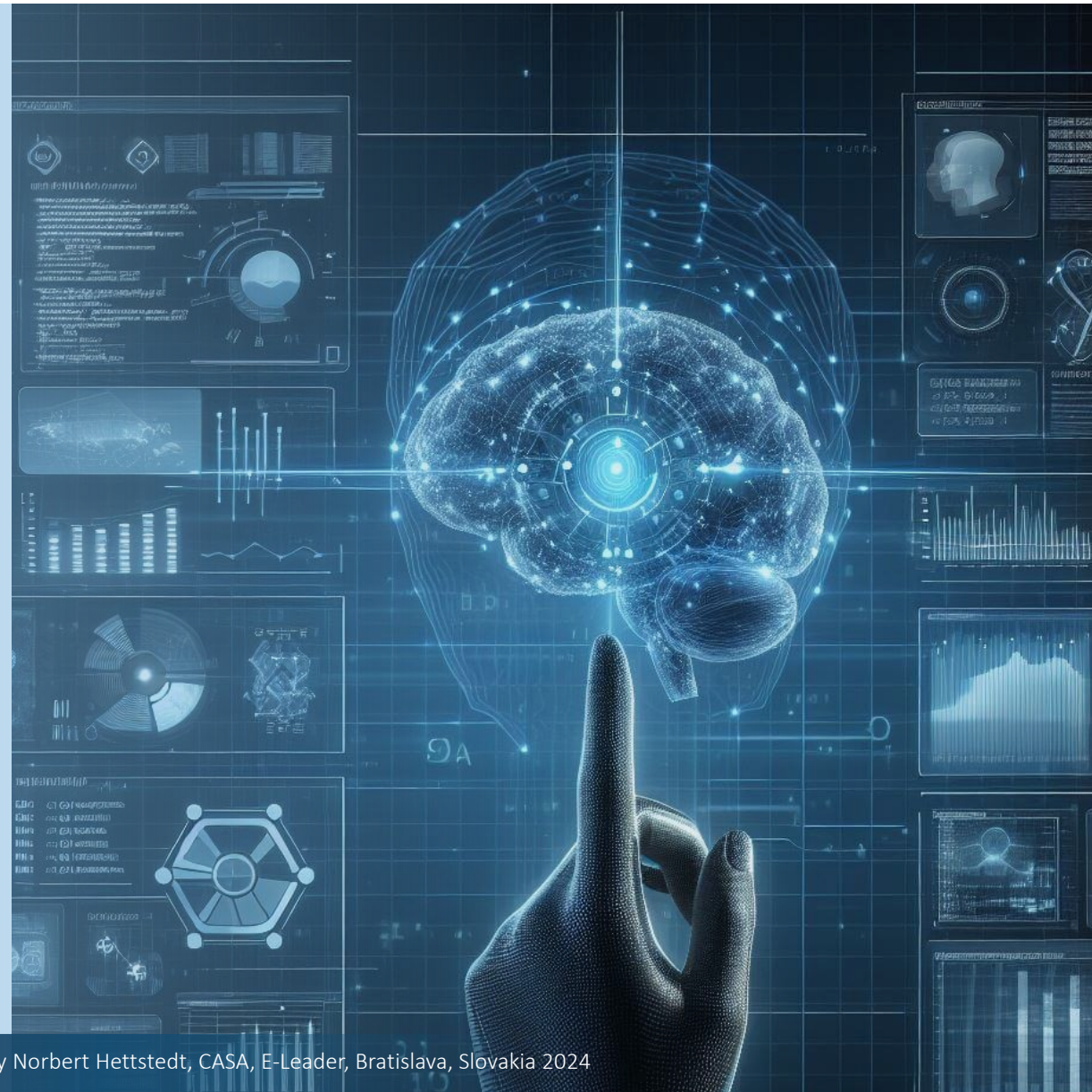
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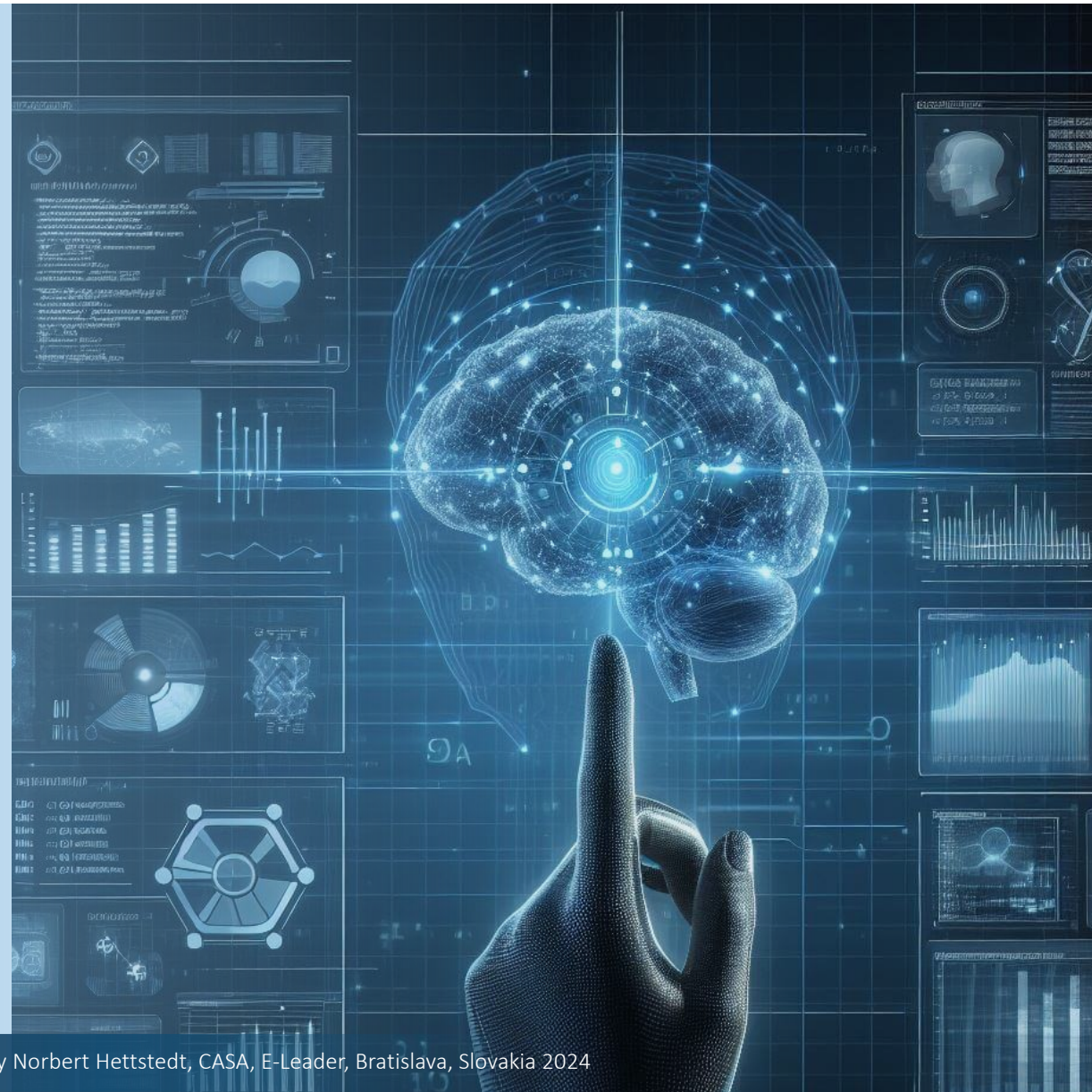# Agenda
The Impact of AI on Leadership

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01 Basics

Development phases of AI

1950

Turing test: Can a computer be considered intelligent?

1956-1960

Perzeptron von F. Rosenblatt 1958

Darthmounth Summer Research Project 1956

1970-1985

AI research becomes widely known through expert system technologies (e.g., Mycin, KI-Winter)

2011

IBM develops Watson, which wins a quiz show

2014

Google Brain Autonomous electric car

2018

Google develops BERT, a framework for pre-training NPL models

2030

AI for industry, aotonomus driving, medicine, agriculture......

First functioning AI program

Terminus is introduced by John McCarthy

1956

First chatbot named Eliza is developed by MIT professor Joseph Weizenbaum

1964/1965

IBM's AI chess machine, Deep Blue, becomes world chess champion

1997

Google develops AlphaGo

2015/2016

OpenAI releases chatbot ChatGPT and image generation AI DALL-E 2, astonishing the world

2022

AI programs, such as Microsoft's Copilot, Midjourny, GPT-4 and Perslexity AI, are gaining traction in the corporate world

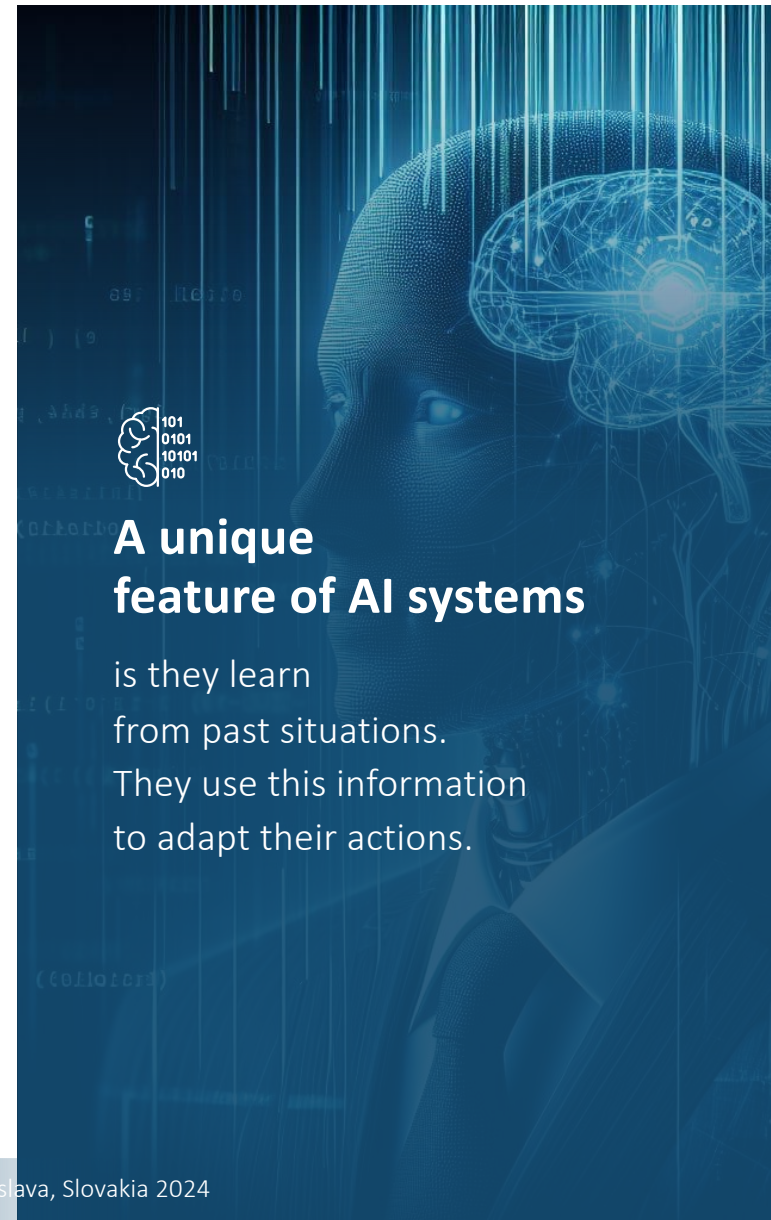**2024**

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01 Basics

Definition e.g.

Bitcom, the Federal Association for the Information Industrie and Telecommunications and New Media defined it like this:

"Artificial intelligence (AI) is the property of an IT-System to show "human-like", intelligent behavior"
(Bitcom 2017, p. 28)

Cornelius 2019, p.6 expends the term as follows:

"It stands for the machine simulation of every aspect of learning and other skills human intelligence, such as language compensation, abstraction and the development of ideas"
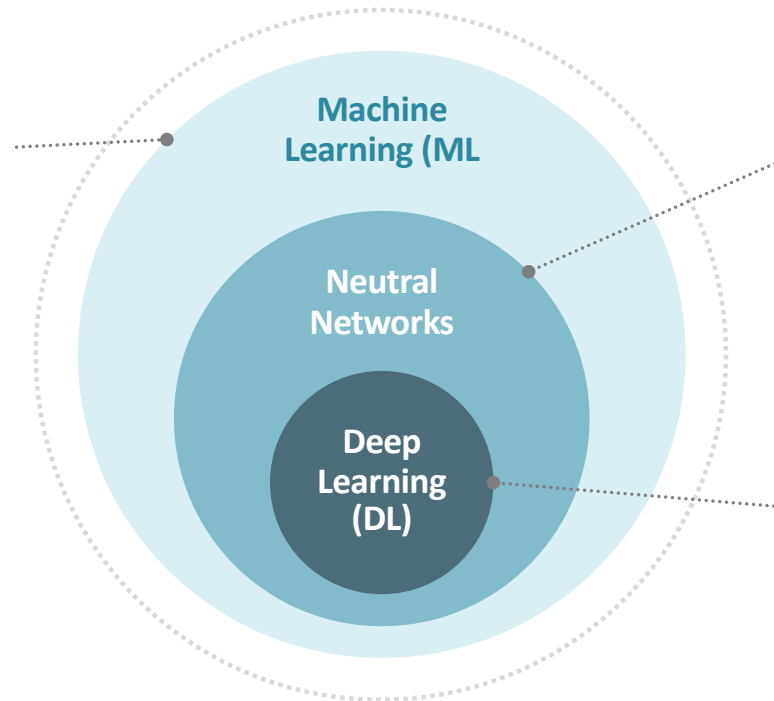
A unique feature of AI systems

is they learn
from past situations.
They use this information
to adapt their actions.

Artificial Intelligence: Subgroups and how do they work

A machine's ability to independently solve tasks with large amounts of data

Example:
face recognition to unlock a smartphone

Machine Learning (ML

Neutral Networks

Deep Learning (DL)

Technologies that allow machines to mimic human intelligence

Example:
self-driving car

A machine's ability to train itself through neural networks and big data.

Example:
ChatGPT

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01 Basics

Artificial Intelligence: Subgroups and how do they work

Is the umbrella term for techniques in which computers are taught to use data lears and make predictions or decisions without being explicitly programmed to do so. ML is the basis for almost all AI systems.

Example:
face recognition to unlock a smartphone
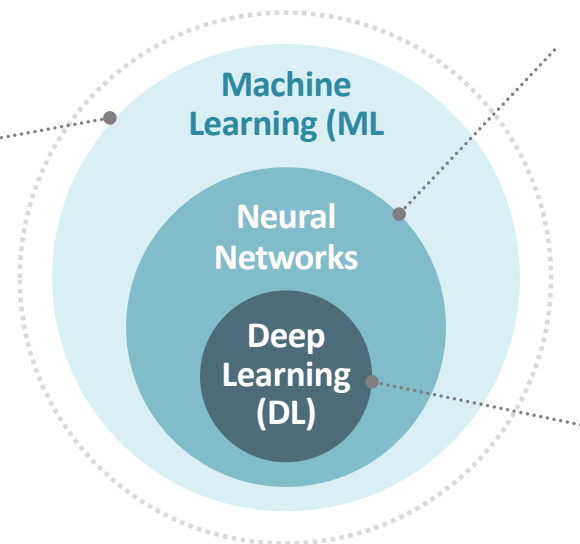
A neural network is a machine learning model inspired by how the human brain works. It consists of layers of neurons that can process data. By training these networks with large amounts of data they learn to recognize patterns and correctiuons.

Example:
self-driving car

Is a subset of machine learning, which uses deep neural networks. DL models are particularly good at recognizing patterns in unstructured data such as images, speech or text and from the basis for advanced AI applications.

Example:
ChatGPT

Machine Learning (ML

Neural Networks

Deep Learning (DL)

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02 Introduction to The Impact of AI on Leadership

❖ Introduction and Key Areas

➤ The rapid* advancement of AI is transforming also leadership *(see page 5)

➤ AI presents both challenges and opportunities for leaders

❖ This presentation explores four key areas:

    ❖ Changing roles and responsibilities of leaders

    ❖ AI-supported leadership practices

    ❖ AI for team development and performance

    ❖ Ethical considerations and responsible AI leadership

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03 The Impact of AI on Leadership

Changing Roles and Responsibilities of Leaders

➢ The AI era requires new leadership competencies

➢ Digital literacy and AI fluency are critical

➢ Leaders must effectively manage human-machine collaboration

➢ Ability to lead diverse, distributed teams is essential

Changing roles and responsibilities of leaders

Change Manager ✓

The leader accompanies and moderates the transformation process at different levels

e.g. Speficic Tasks of him/her:

- communicattes openly, honestly and transparently
- shows potential, outlines goals and the way to get there
- Anticipates and proactively modertates fears, ambiguities and conflicts
- Shows sensifity to ethical and social issues and takes risk transperently
- Promotes a climate-frindly corporate and team culture with people in focus
- Treats existing knowlage, skills and structures with appriciation

Learning Leader ✓

The learning leader constantly develops and stays adaptable and willing to learn – and pass this on to his team

e.g. Specific Tasks of him/her:

- Learns basic skills in AI
  - Stratioegic application areas and business cases
  - Selection and use of specific tools and add-ons
  - All in the context of ethical and legal guidlines
- Positions him/her as a learning leader and shares knolages, is curious, willing to learn and lead s by example
- Promotes a learning culture in teams and the company

Designer of Interaction ✓

You moderate and shape collaboration to get the best out of people and machines as a leader

e..g. Specific Taks of him/her:

- Develops an AI strategy: What are the strategic goals, why and at what level should Ai be used and what are the long-term goals?
- Use and Business Cases: work out, with the team, which task can be taken over by AI and which by humans, or where AI can provide support
- Diversity, Data protection and ethics: Ensure that AI models are free of bias and that a wide variety of perspectives are incorporated into the development process
- Give yourself and your team room for experiments and to try thinks out – be prepered and willing to implement, adaptations needed or for discards
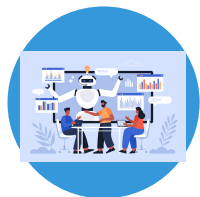
AI-Supported Leadership Practices

Process automatization

AI can Streamline processes and automate routine tasks

An AI mindset

Developing an AI mindset is crucial for leaders

Strategic advisor and coach

AI can serve as a strategic advisor and coach

Data-driven decision-making

Data driven decision-making is enabled by AI

The Impact of AI on Leadership

AI For Team Development and Performance

AI enhances team communication and collaboration

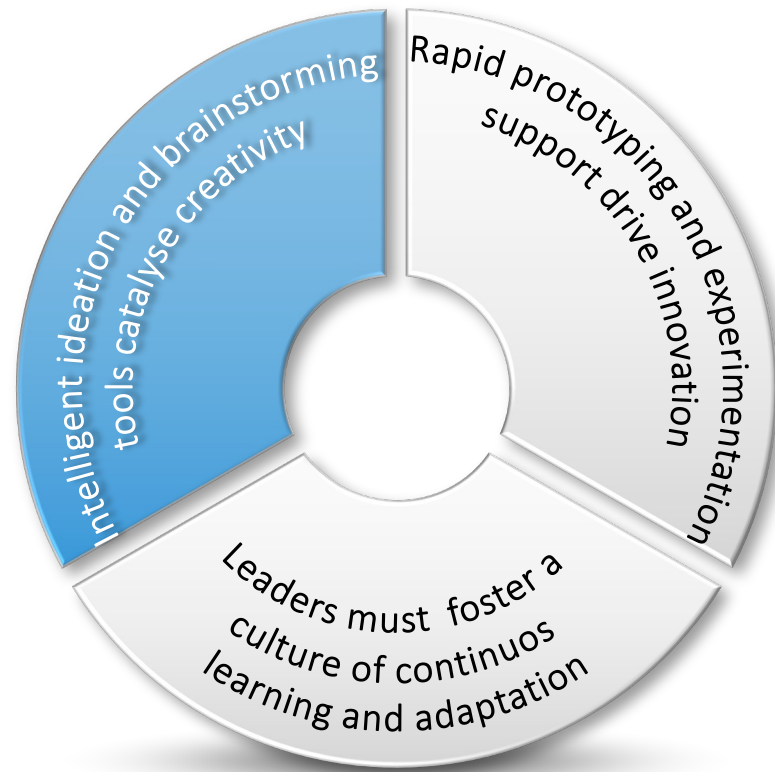Skill gaps can be identified and targeted upskilling facilitated

AI supports employee growth and teambuilding

AI tools boost productivity and results

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AI For Creativity and Innovation

Intelligent ideation and brainstorming tools catalyse creativity

Rapid prototyping and experimentation support drive innovation

Leaders must foster a culture of continuos learning and adaptation

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Ethical Considerations and Responsibilities

➤ Addressing bias and ensuring fairness in AI systems is critical

➤ Transparency and explainability of AI-sided decisions are essential

➤ Privacy, security, and governance of workforce data **must** be prioritized

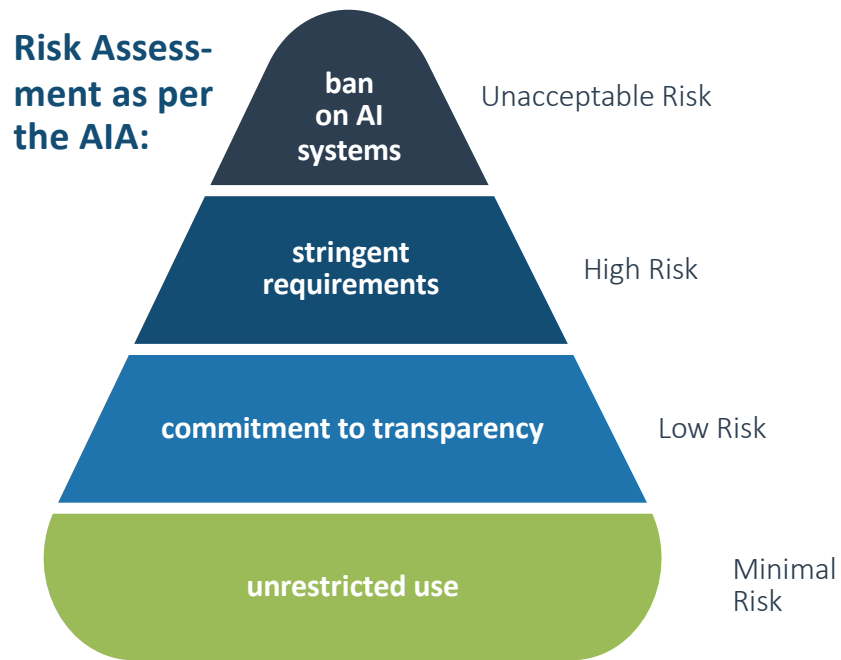➤ Human agency and accountability must be enabled

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

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EU's Artificial Intelligence Act

Proposed regulatory framework
on the use of artificial intelligence

Risk Assess-ment as per the AIA:

- ban on AI systems — Unacceptable Risk
- stringent requirements — High Risk
- commitment to transparency — Low Risk
- unrestricted use — Minimal Risk

Der Artificial Intelligence Act (AIA)

is a legislative package that focuses on the deployment and regulation of AI.

Its purpose is to align artificial intelligence with EU values and ensure its safe use in society.

On December 9, 2023, the European Parliament and the Council of the European Union reached an agreement on the AI Act.

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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

Misinformation

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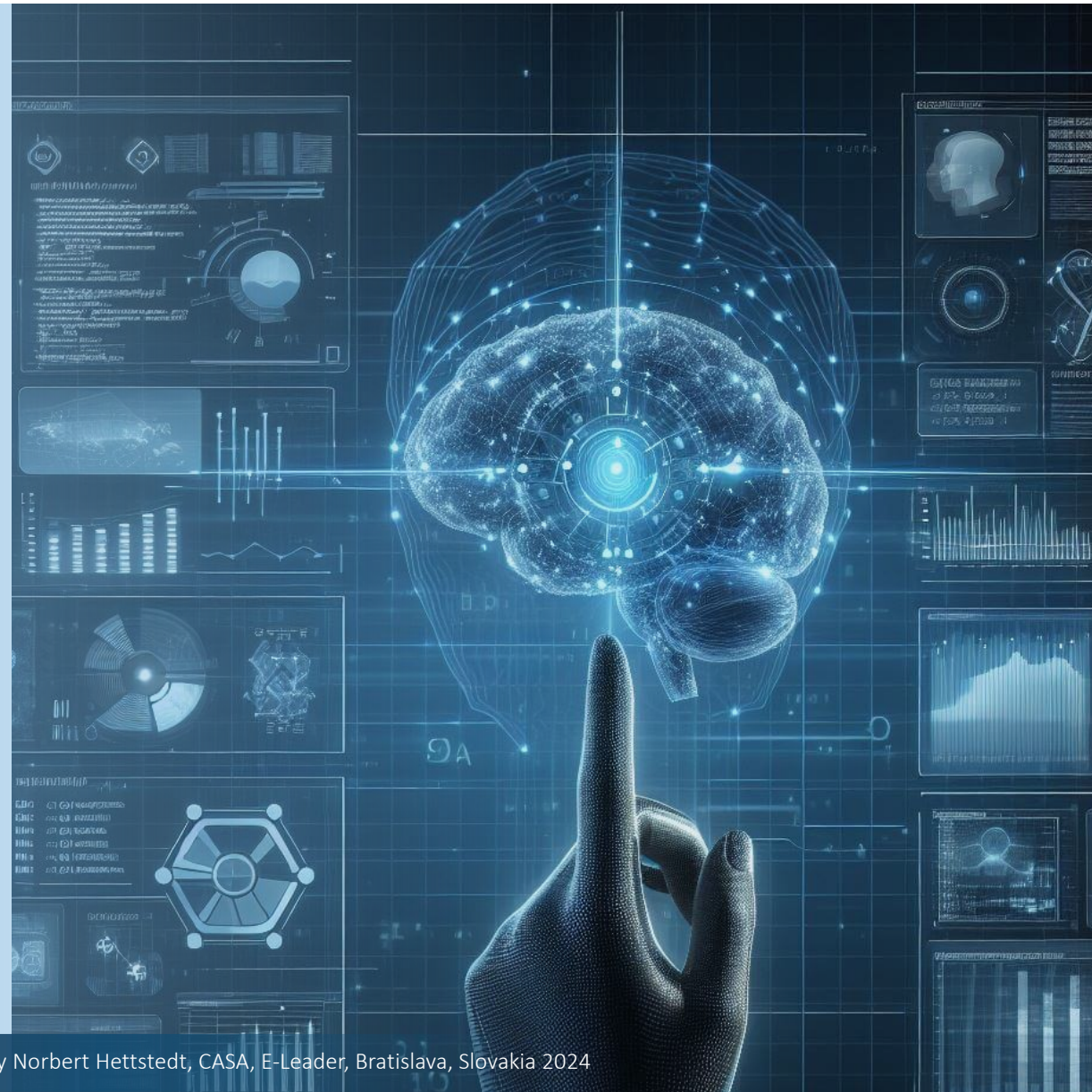
Summary – AI Bsasic Knowledge for Leaders

The goal of AI is this:

Making machines so smart that they can do task that people normally do, such as learning and planning, speaking and decision making.

AI has:

A major influence on organizations and leadership and is causing profound changes in various areas of business management.

Ai as a co-leader:

AI systems can serve as a complement and support to human leaders. However, human remain (still) responsible for the final decisions and their implementation

If Ai increasingly supported and partially replaces our work by technological possibilities, people should not be less important, but on the contrary, even more important!

Summary – Leadership

Ai based leadership has many potentials. Leaders shloud be brave, trying it out and still have it critical spirit

With AI-based leadership:

The roles of change manager, learning leader and interaction designer become even more fundamental

As a manager:

It will be important to create an AI-friendly culture that focuces on people

Requirement areas:

Such as the development of strategy and goals as well as AI-use cases interrelated and must be continuously developed and tested

AI can support:

Leaders can support on various levels to work more efficiently, make decisions or give employees impulses as a coach
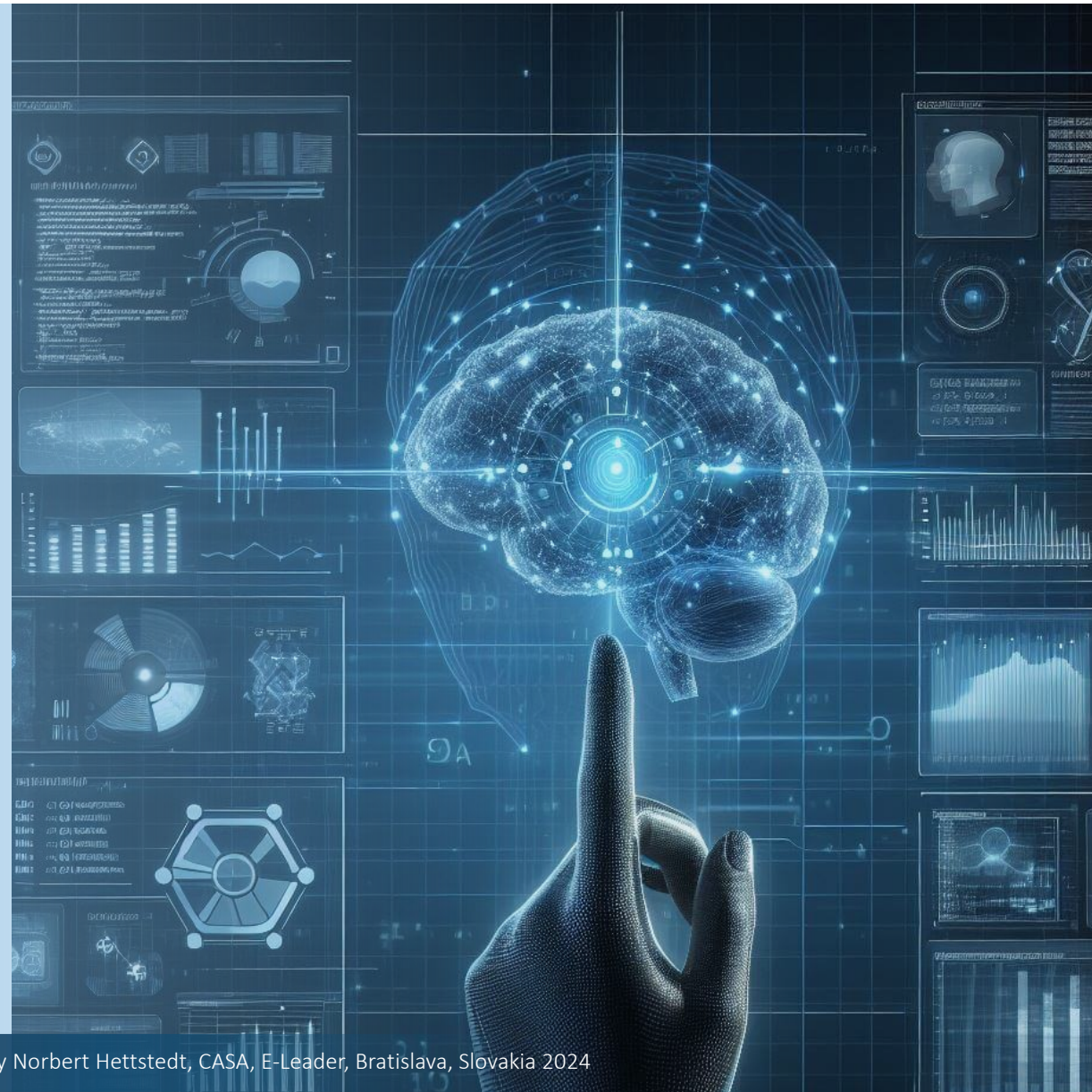
When using AI in leadership:

Leaders should pay attention to various topics, including data protection, privacy, the explainability of AI solutions and the effects of AI on how we interact with one another

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05 Future persepective on AI-supported leadership

AI-Augmented Leadership and redesigning the world of work

AI-Augmented leadership

- Human leaders and Ai systems work together symbiotically

- AI augments and enhances leaders' capabilities

- Responsible and ethical use of AI is championed

- Culture of continuous learning, experimentation, and adaptation

Redesigning the world of work. Reorganize workplaces and areas of responsibility

- Leaders must together with the company design workplaces to enable and optimize collaboration between people and AI-Systems

- Some roles focus more on interacting with AI-Systems, while others focus on tasks, human creativity and emotional intelligence require

Train the workforce

- A Key component is employee training in the areas of AI and machine learning

- It must be ensured that they have the skills to work effectively with Ai

05 Future persepective on AI-supported leadership

What will we probally see in the next years to come

- In the next few years, AI agents, autonomous programs that make decisions and execute actions, will become increasingly important ⟶

  Companies/leaders must prepare for the integration and management of these agents.

- In the next app.5 years there will be large-scale productivity increases through the use of generative AI in standard software

- In the next app.10 years, we could rethink the role of humans in the world of work ⟶

  In the long term, the question will be how productive we want to be and what role humans will play in an economy that is increasingly driven by machines

05 Future persepective on AI-supported leadership

Call-To-Action for Leaders

➢ Invest in learning and development to build AI fluency

➢ Proactively identify areas where Ai can support leadership

➢ Develop skills and strategies to lead in an AI-augmented world

➢ Couple AI with human judgment, empathy, and ethics

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Conclusion

- ➢ AI is transforming the nature of leadership

- ➢ Leaders must embrace the opportunities and challenges of AI

- ➢ Striking the right balance between AI and human qualities is key

- ➢ By harnessing AI responsibly, leaders can drive success and positive impact

- ➢ The future of leadership is Ai-augmented, but human - centred

Thank for your attention