

Responsible AI in Public Procurement

Andras HLACS
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- **Data is constantly generated and we possess greater computational capabilities than ever before**
- Data is referred to as **the new oil**
 - **Business of data**
 - The main impact on humanity is related **to the way data can improve our lives**
 - **Proper data governance must be implemented**
- **The demand for AI computing has grown dramatically** for machine learning systems, especially deep learning and neural networks in the last 15 years.
- **The increasing computing needs of AI systems create more demand for specialised AI software, hardware, and related infrastructure, along with the skilled workforce necessary to utilise them responsibly, efficiently, and effectively.**

— **Technology has been challenging human performance**

- ❑ IBM's Deep Blue beat the Chess World Champion Garry Kasparov (1997)
- ❑ Google's DeepMind AlphaGo learned to play Go alone (i.e., through reinforcement learning policies) and beat the Go World Champion Lee Sedol (2016)
- ❑ BlueDot spotted what would come to be known as COVID-19, 9 days before WHO's alert to the novel coronavirus (end of 2019)
- ❑ Google's DeepMind published a paper in Nature suggesting that “its model was able to spot cancer in de-identified screening mammograms with fewer false positives and false negatives than experts” (2020)
- ❑ ChatGPT, the AI-powered chatbot, programmed to simulate human conversation, took the world by storm (30 November 2022)

— **“Good old times” versus today**

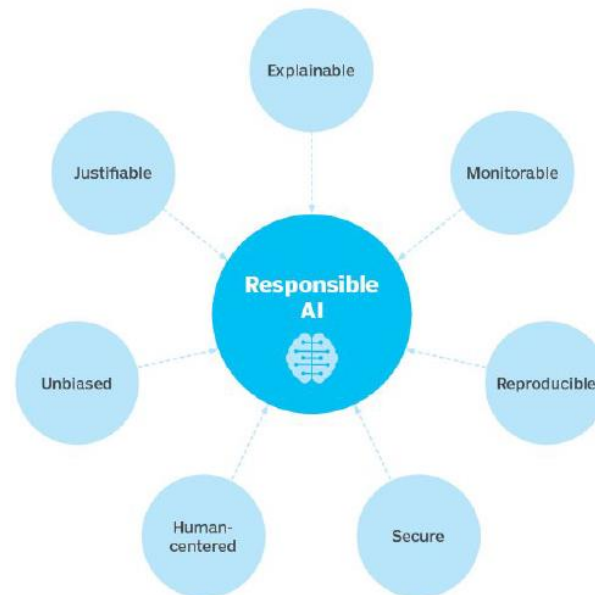
- In the beginning, **AI systems were based on algorithms:**
 - An algorithm is a set of instructions that the system will follow to achieve a certain goal (direct programming)
 - These explicit rules were often based on domain knowledge
 - Hence, they were “easy” to explain and to understand
- Nowadays, **AI uses available data to automatically learn programs/functions:**
 - In machine learning, we learn from data and make predictions (indirect programming)
 - These algorithms work by optimising an objective function
 - Hence, the “rules” often are implicit and difficult to understand (question of transparency and explainability)

— **What is an AI system?** And what is responsible AI?

An AI system is a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment.

Source: OECD AI Principles

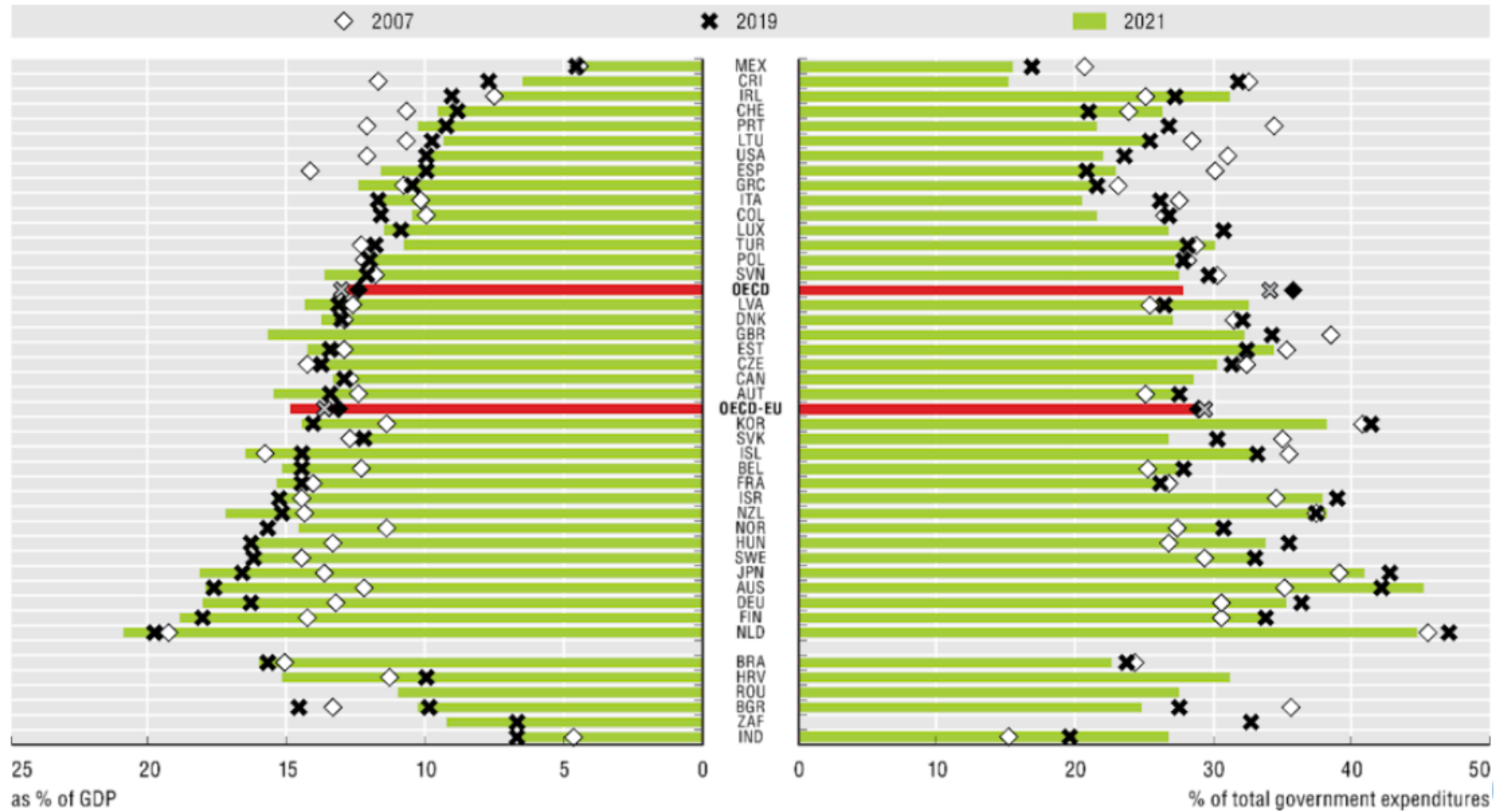
Responsible AI is a framework that guides how we should address the challenges around artificial intelligence from both an ethical, technical, and legal point of view.



In line with

- **OECD AI Principles**
- **Recommendation on the Ethics of AI**
- **Universal Guidelines of AI**
- **Council of Europe's Convention on AI, human rights, democracy, and the rule of law**
- **EU AI Act**

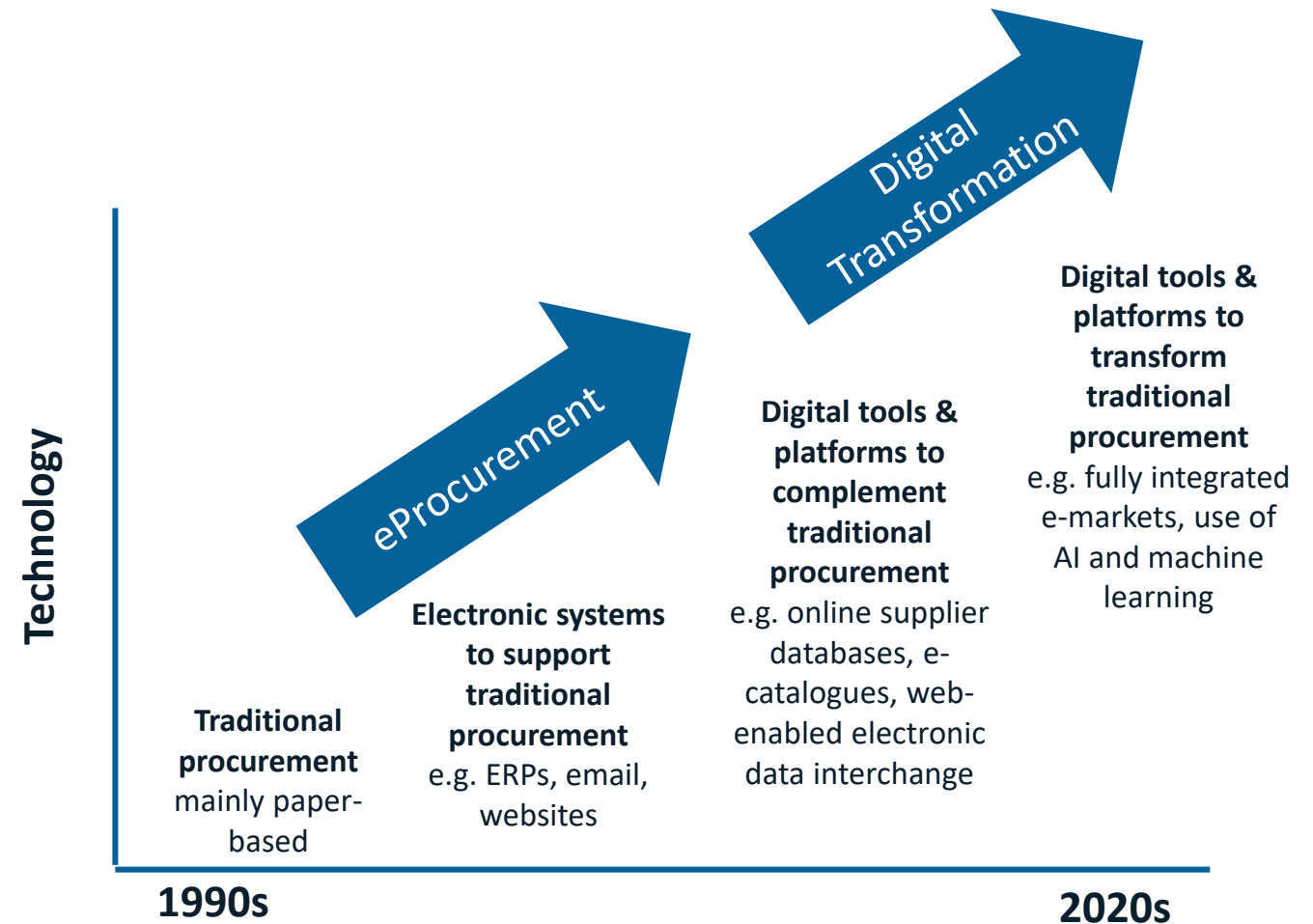
Public procurement accounts for a large share of the global economy



Source: OECD National Accounts Statistics (database).

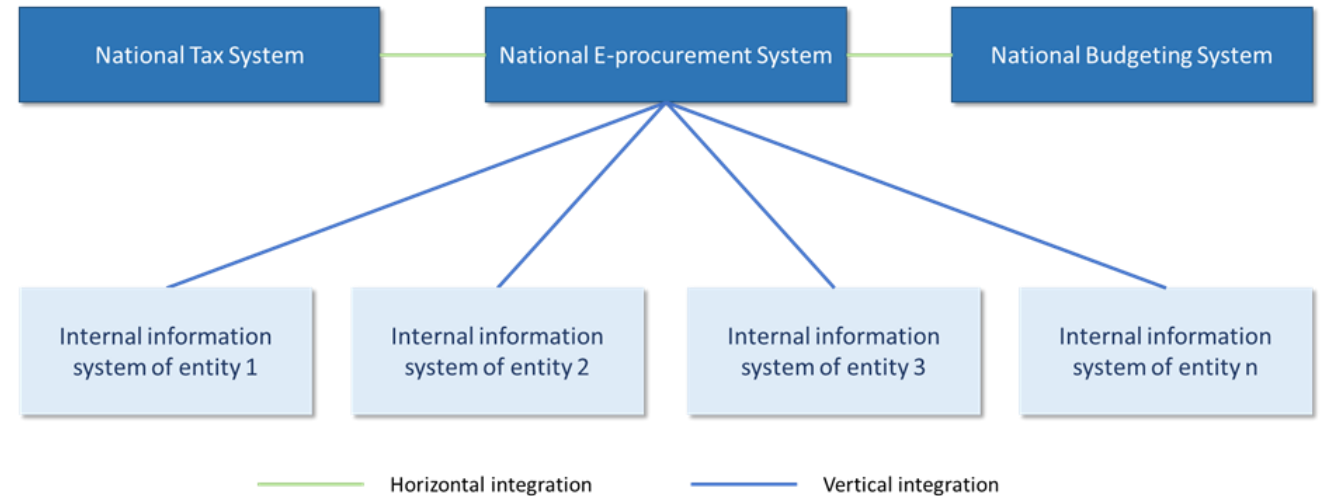
— **There is an ongoing digitalisation in Public procurement**

- Digital transformation requires rethinking the public procurement life cycle from an end-to-end perspective
- Digital transformation depends on the **robust governance, sharing, and use of data**
- **Innovative technologies** can deliver value throughout the procurement process



— Public procurement as a driver of Digital Government

- Digital procurement is a **key driver of broader eGovernment trends**
- Digital transformation requires a **whole-of-government approach** and the involvement of **many stakeholders and systems**
 - Integration with other digital government systems is essential



— Public procurement and AI

CHALLENGES

- Ethical and bias concerns
- Transparency and explainability
- Data privacy and security
- Lack of standardisation
- Regulatory and legal frameworks
- Safety and robustness
- Public trust and perception
- Resource intensiveness – especially data collection and management

OPPORTUNITIES

- Improved efficiency
- Enhanced decision-making
- Cost saving
- Supporting the oversight of public procurement operations
- Citizen engagement
- Accessibility and inclusivity
- Improving demand forecasting and strategic procurement planning, gaining insights into market trends

— The OECD's work on digital transformation

- The OECD's **Recommendation on Public Procurement** provides a platform for digital transformation that is integrated with broader public procurement goals
 - **Direct support to countries** to enhance the digitalisation of their public procurement systems
 - Thematic reports and policy papers to **identify trends and promote good practices**

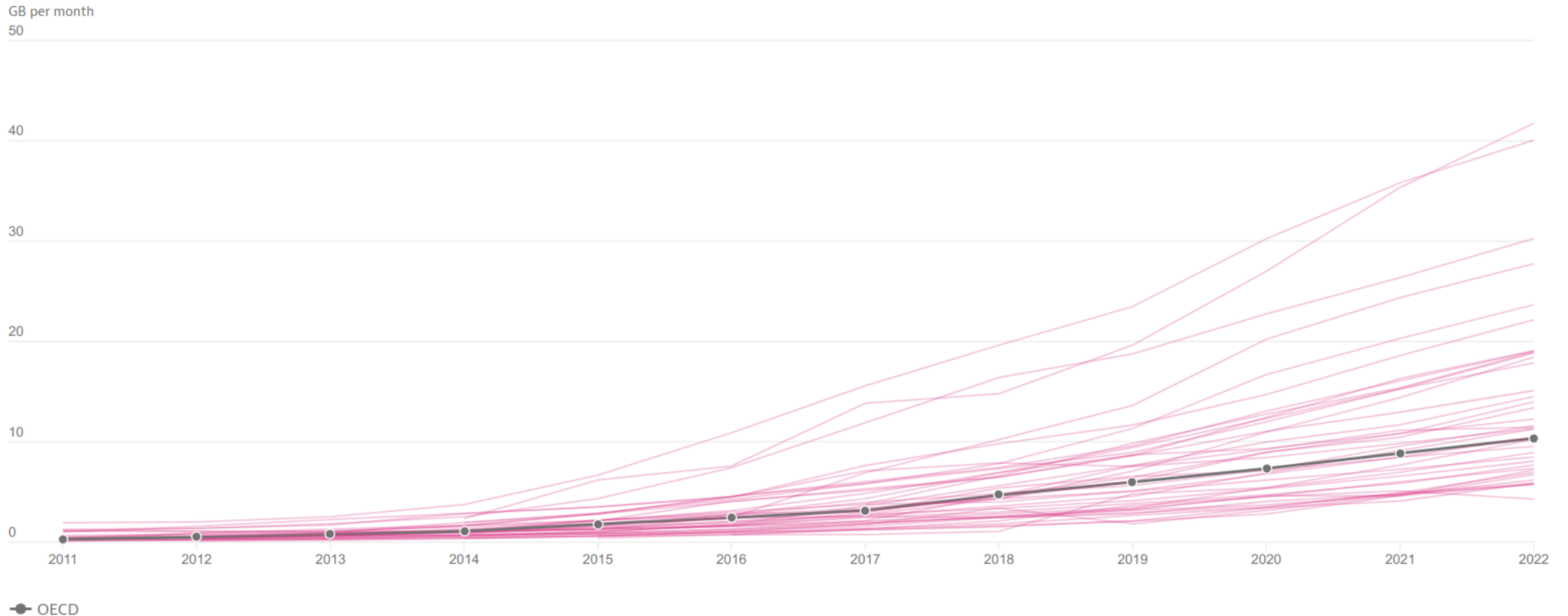
The OECD Recommendation on Public Procurement



Thank you!

— We generate vast amount of a day

The average monthly data usage per mobile broadband subscription is rapidly growing.



Source: The OECD Going Digital Toolkit, based on the OECD Broadband Portal <http://www.oecd.org/sti/broadband/broadband-statistics> and the ITU World Telecommunication/ICT Indicators [Database](#).

Good practices for the digital transformation of public procurement

