



The 2025 CFRR Ministerial Conference

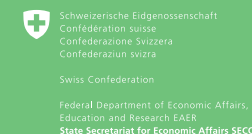
# Leveraging Artificial Intelligence in Public Financial Management

Prof. Dr. Sandro Fuchs, Zurich University of Applied Sciences

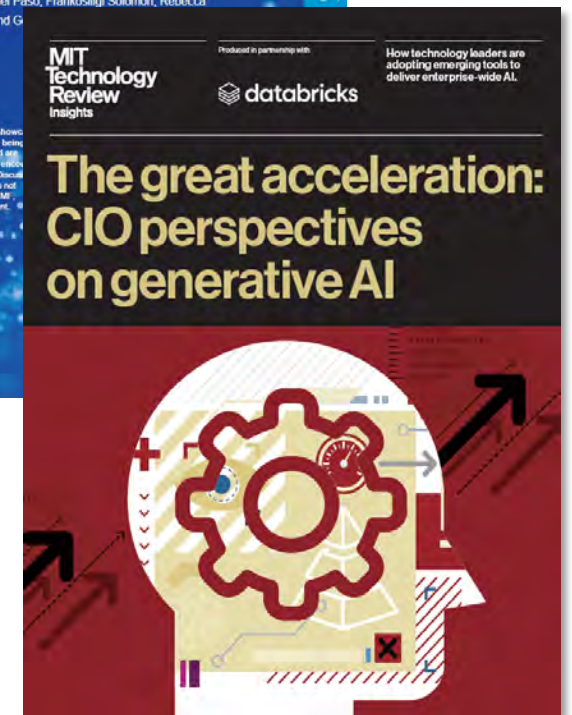
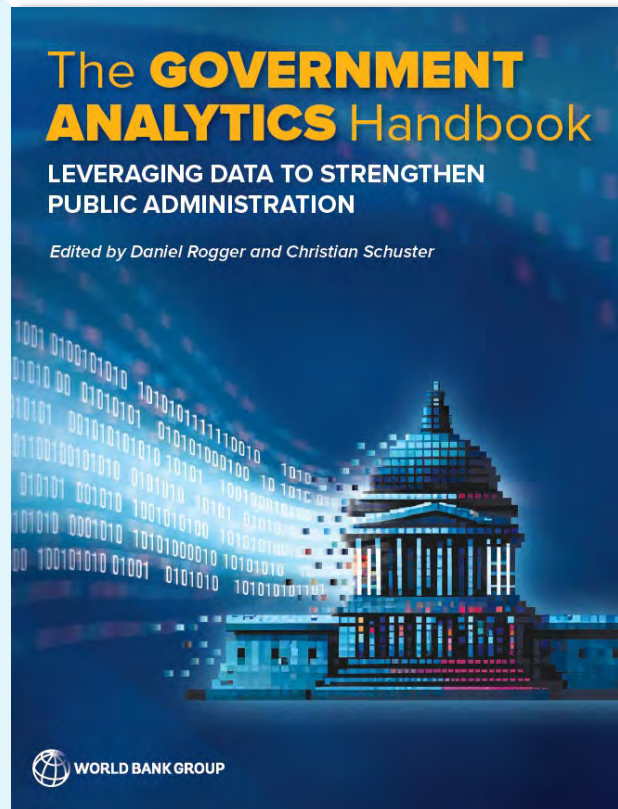
Vienna, March 18, 2025



The CFRR Programs are co-funded by



# A big universe of «GovTech» guidance. Difficult to keep track of.



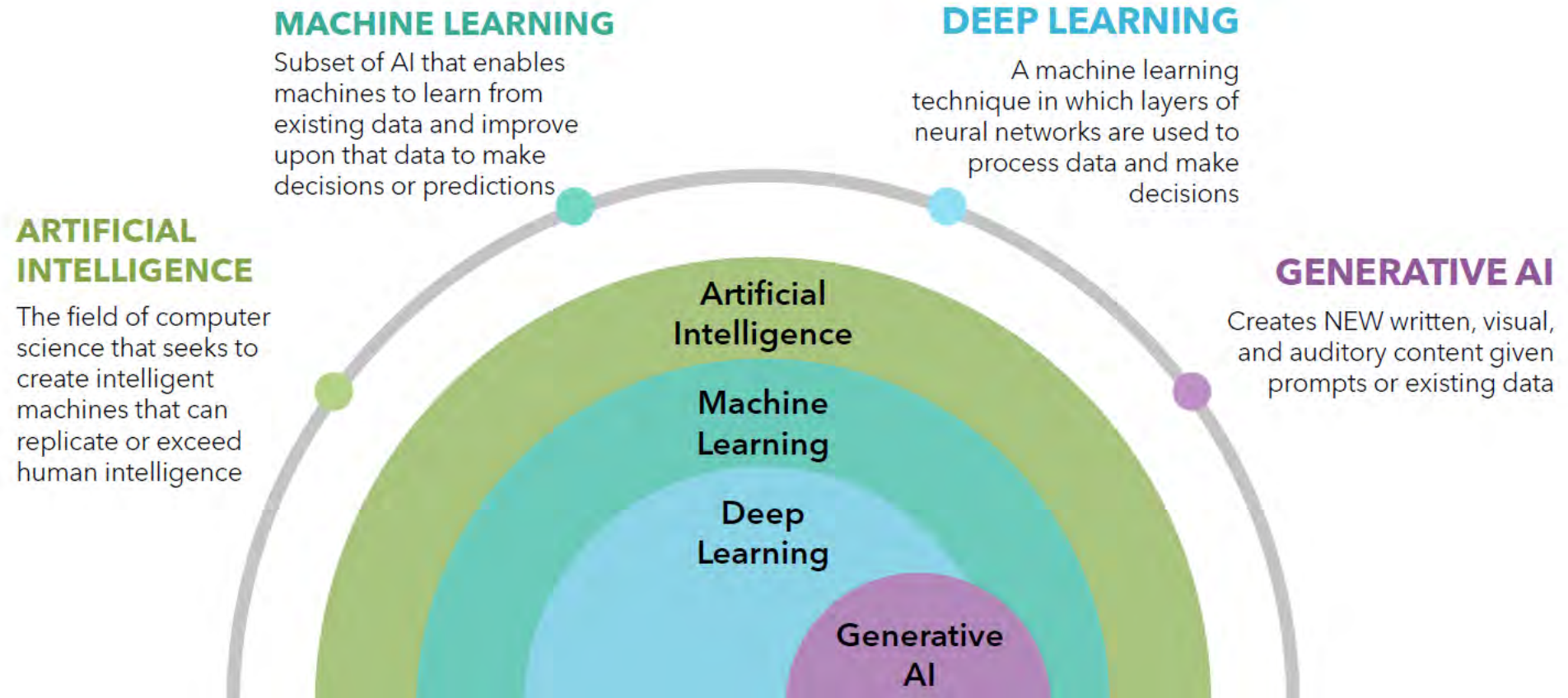


## Five leading questions

1. Which AI technologies exist?
2. Does AI improve performance?
3. How to approach AI implementation?
4. AI use cases in Public Financial Management?
5. Principles for safe, responsible and effective AI usage?



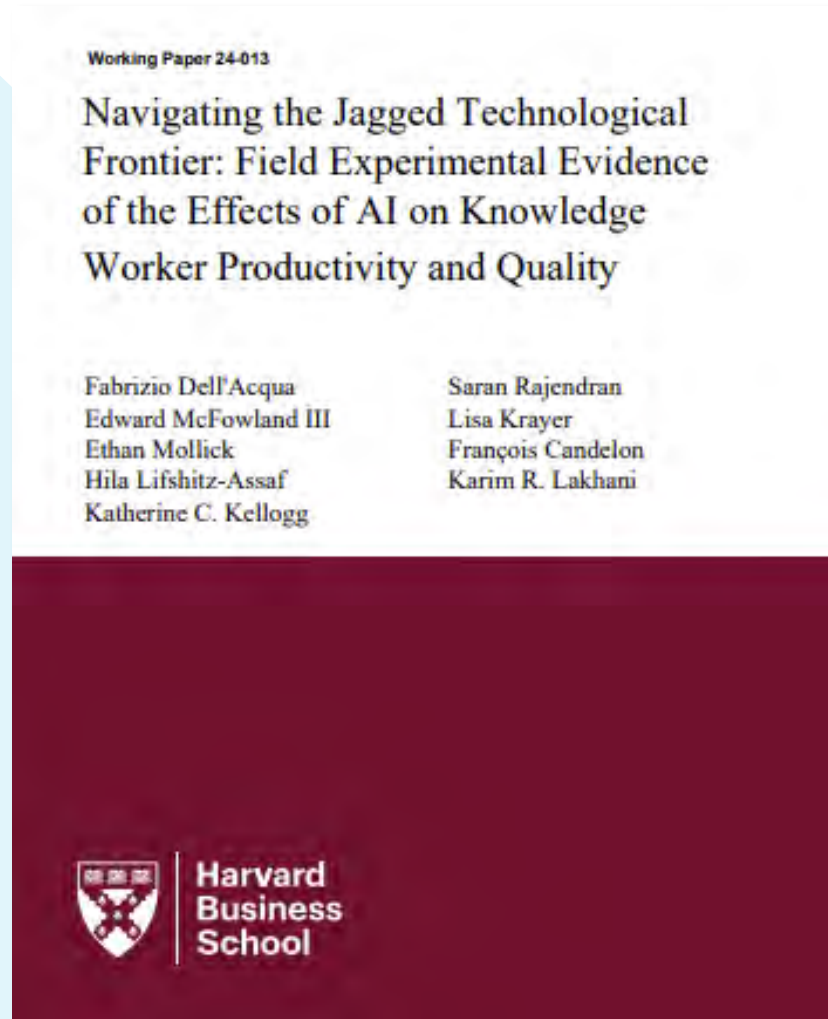
# Various types of AI technologies



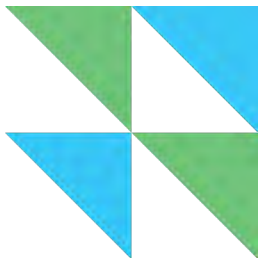




# Efficiency frontiers of AI: Does it improve performance?

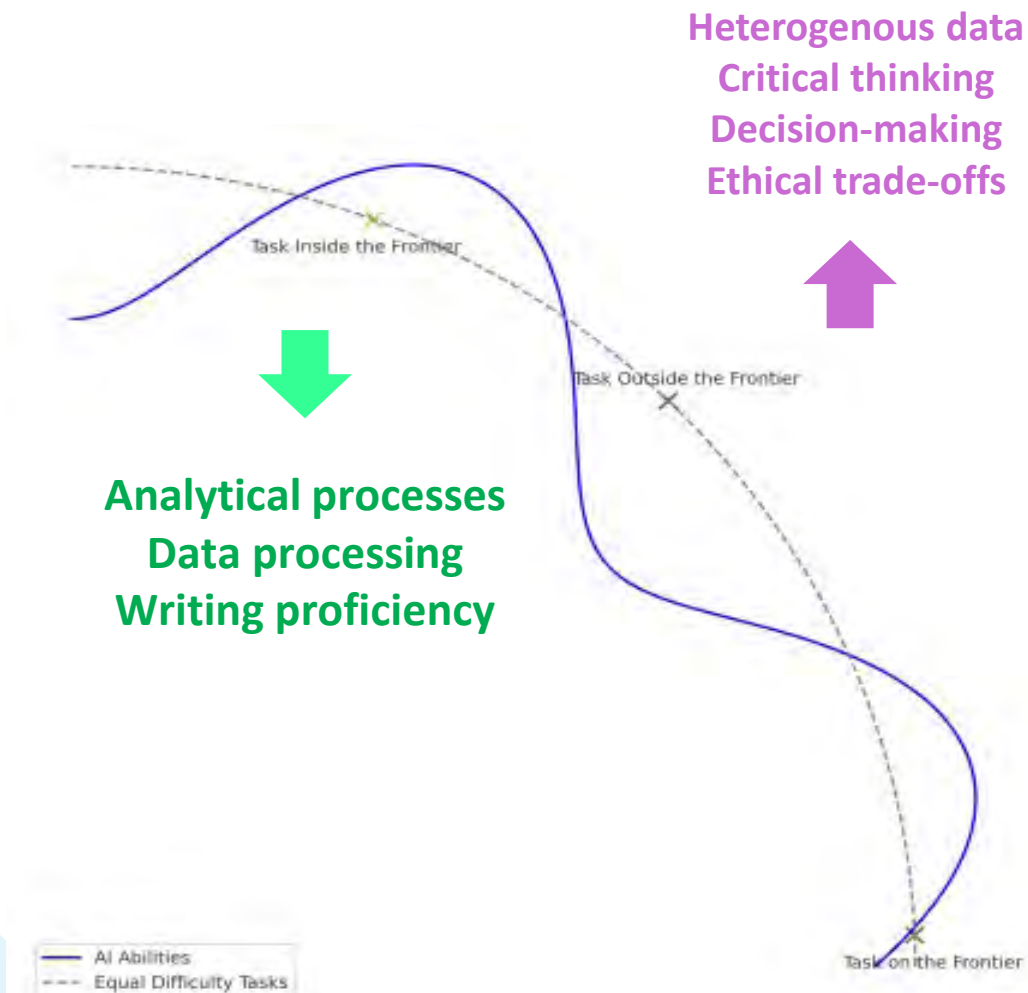


- Randomized control trial (RCT) with 758 BCG consultants
- Solving 18 consulting tasks
  - Group 1: No access to AI
  - Group 2: Access to AI (Chat GPT 4.0)
  - Group 3: Access to AI (Chat GPT 4.0) with prompt engineering overview



# Technological frontiers of AI: AI is not a superhero

- AI capabilities have a «jagged technological frontier» for equal task difficulty
- High efficiency gains within technological frontier
  - 12% more tasks fulfilled
  - 25% quicker task completion
- Significant efficiency losses outside technological frontier
  - 19% higher risk of producing wrong results



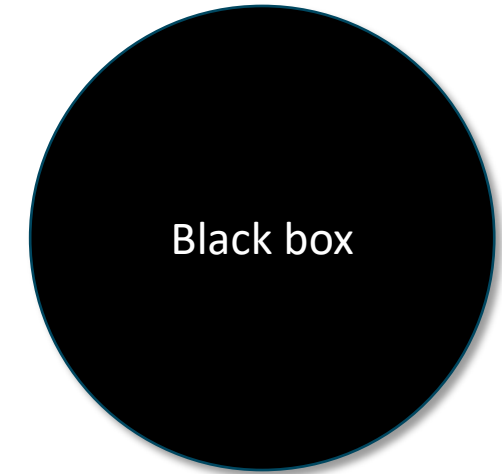
Source: Dell'Acqua et al. (2022)

# What does that all that mean for PFM?



## How not to do it

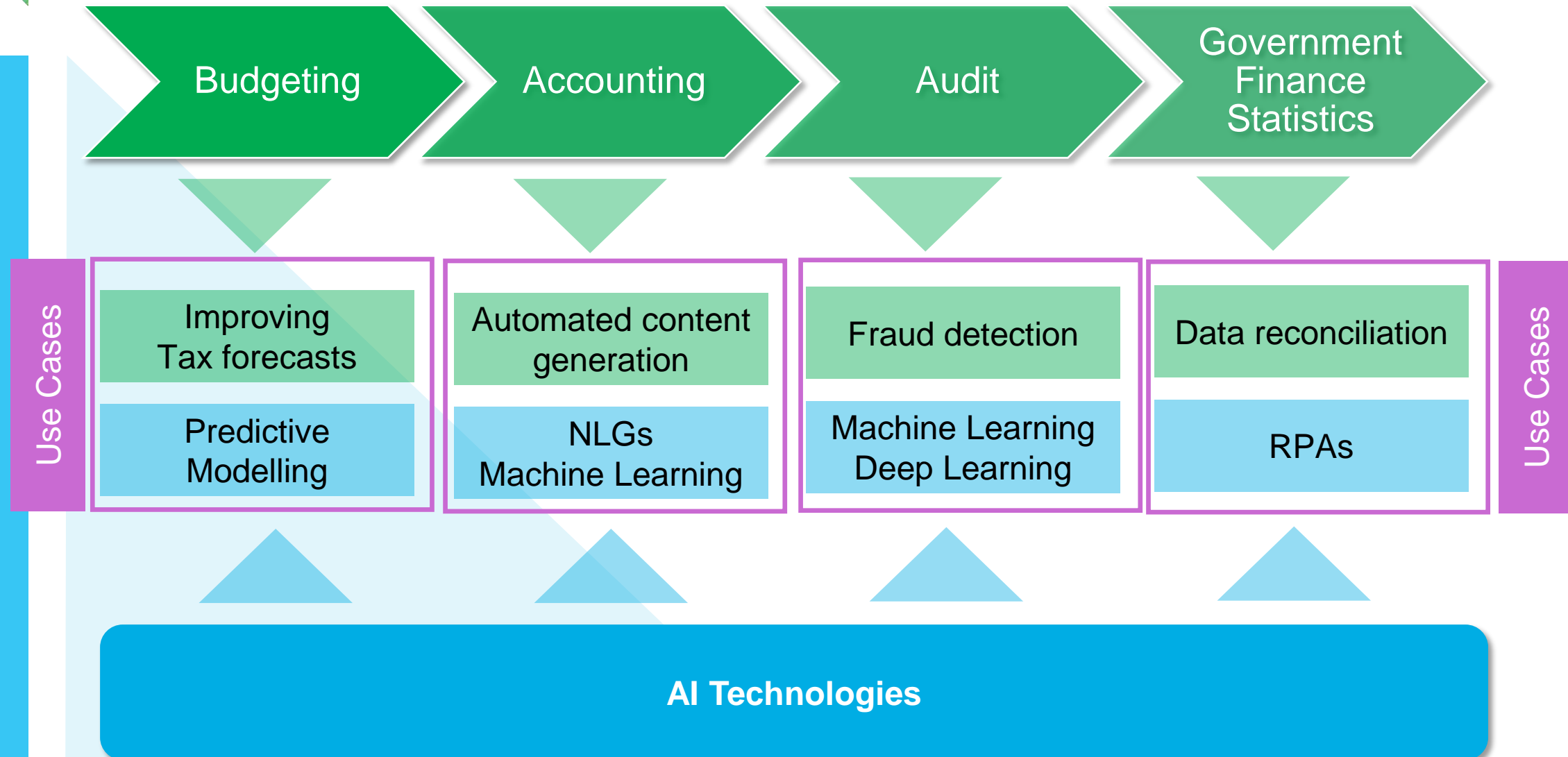
«I am a big fan of AI, we need to apply it»  
«We must be innovative»  
«We need the newest technology»



Black box = Don't know the objectives, problems, use cases, skills, people, ...

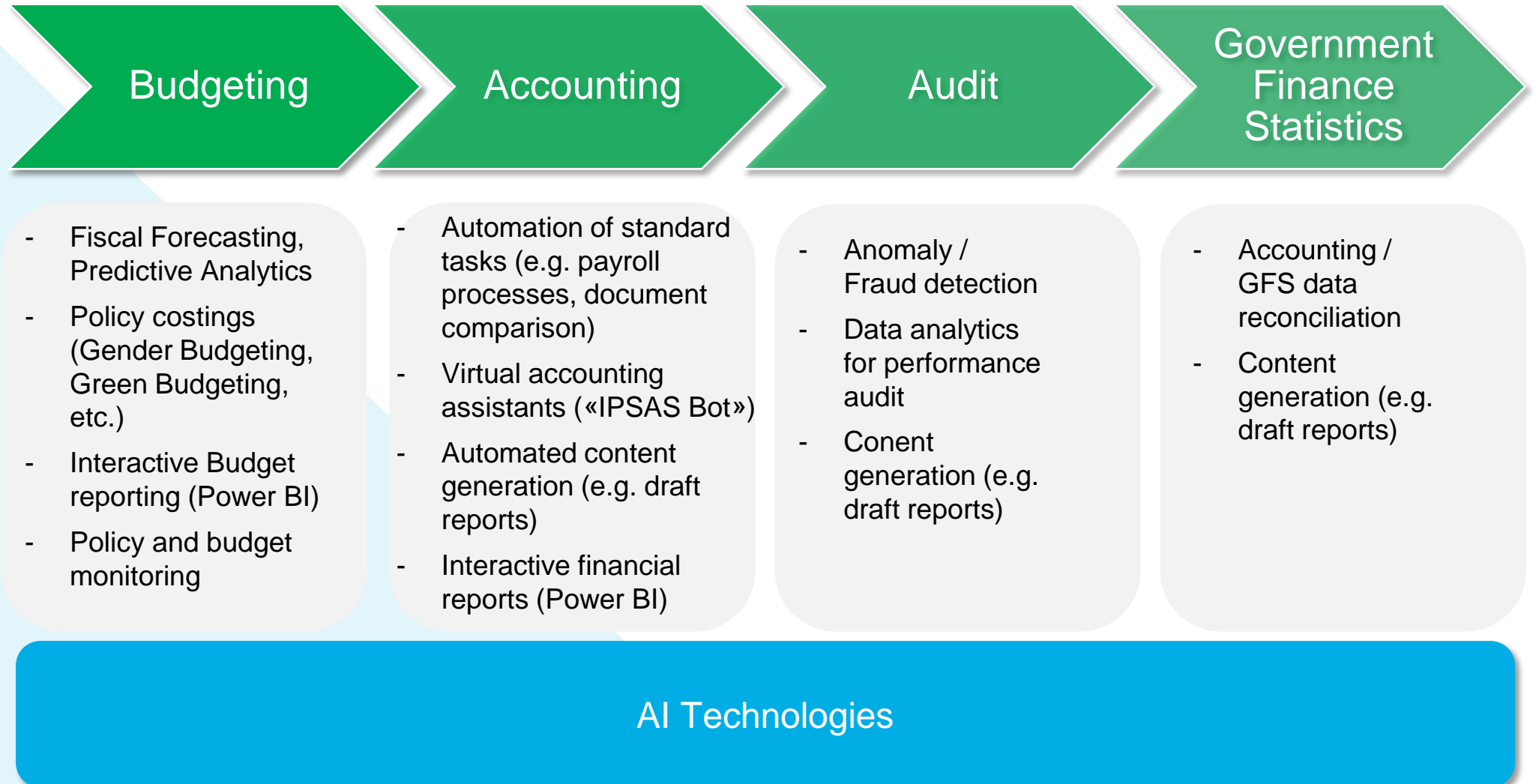


# How to do it: Matching PFM needs and AI technologies





# Potential use cases in the universe of PFM



# Example: AI-powered policy costing in Australia

- Priority Investment Approach to Welfare (PIA) in Australia
- AI-powered actuarial model that simulates the lifetime financial trajectory of citizens/beneficiaries

Source: Government of Australia,  
Department of Social Services (2022)

Figure 6: Model Population with Class Utilisation

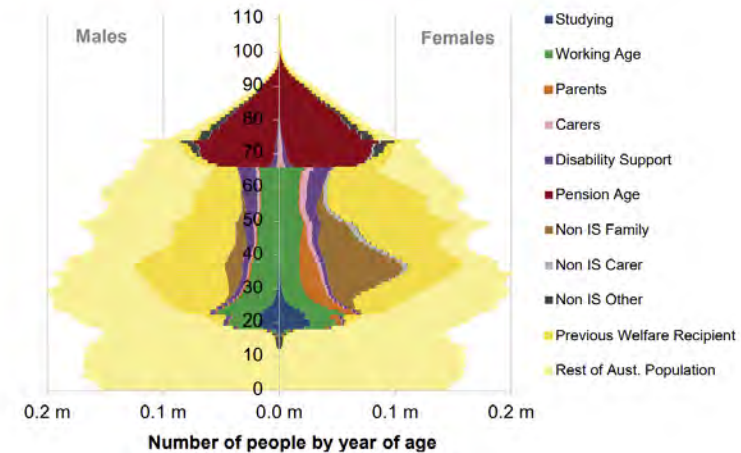
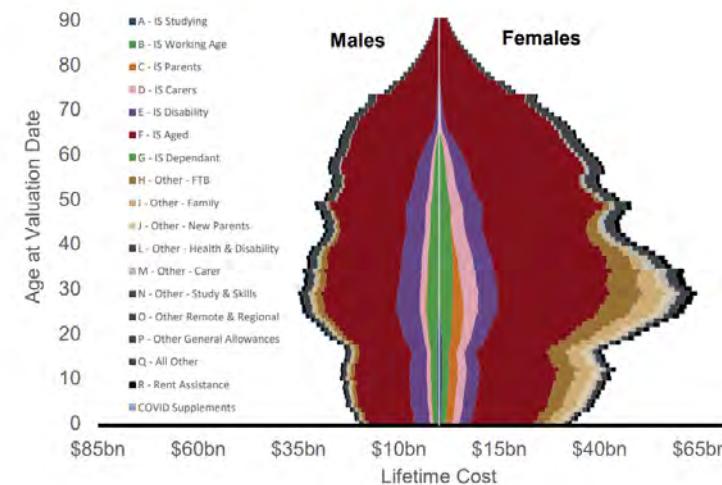


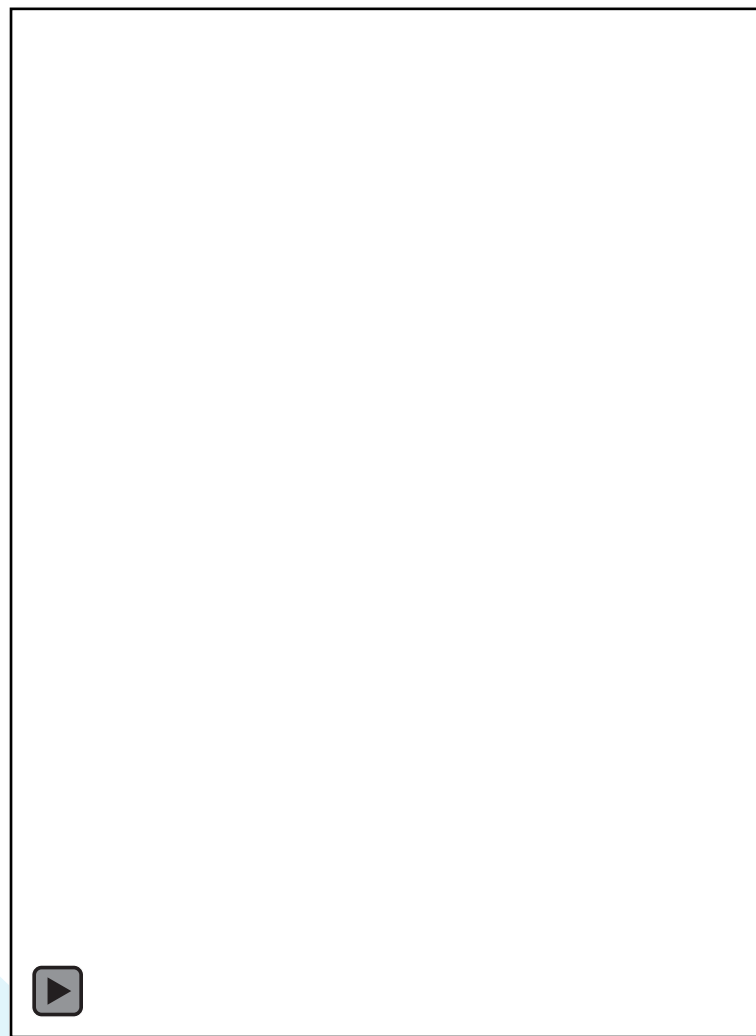
Figure 28: Total Lifetime Cost by Age and Gender



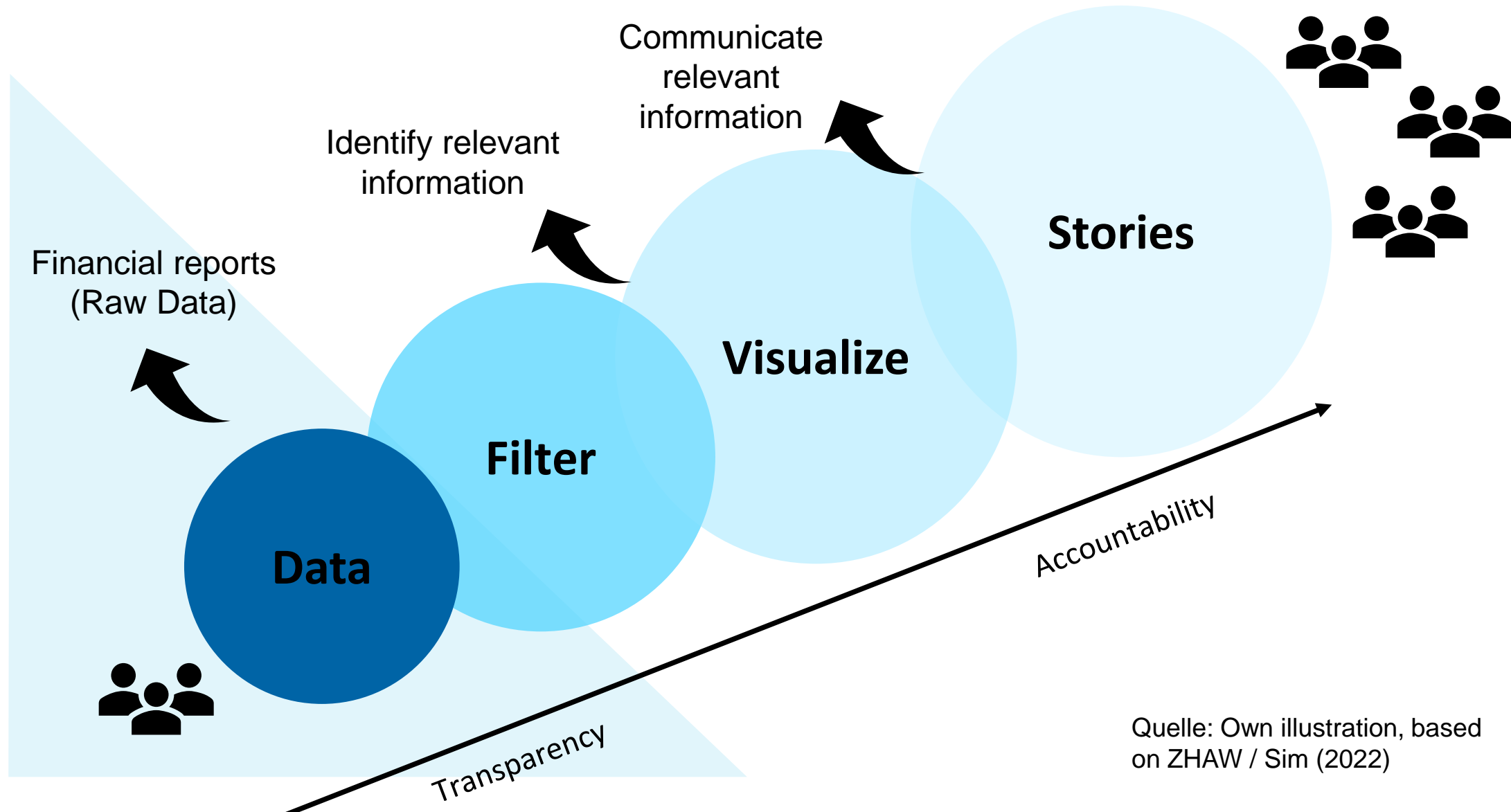




# Example: Complex accounting information are not easy to navigate for users

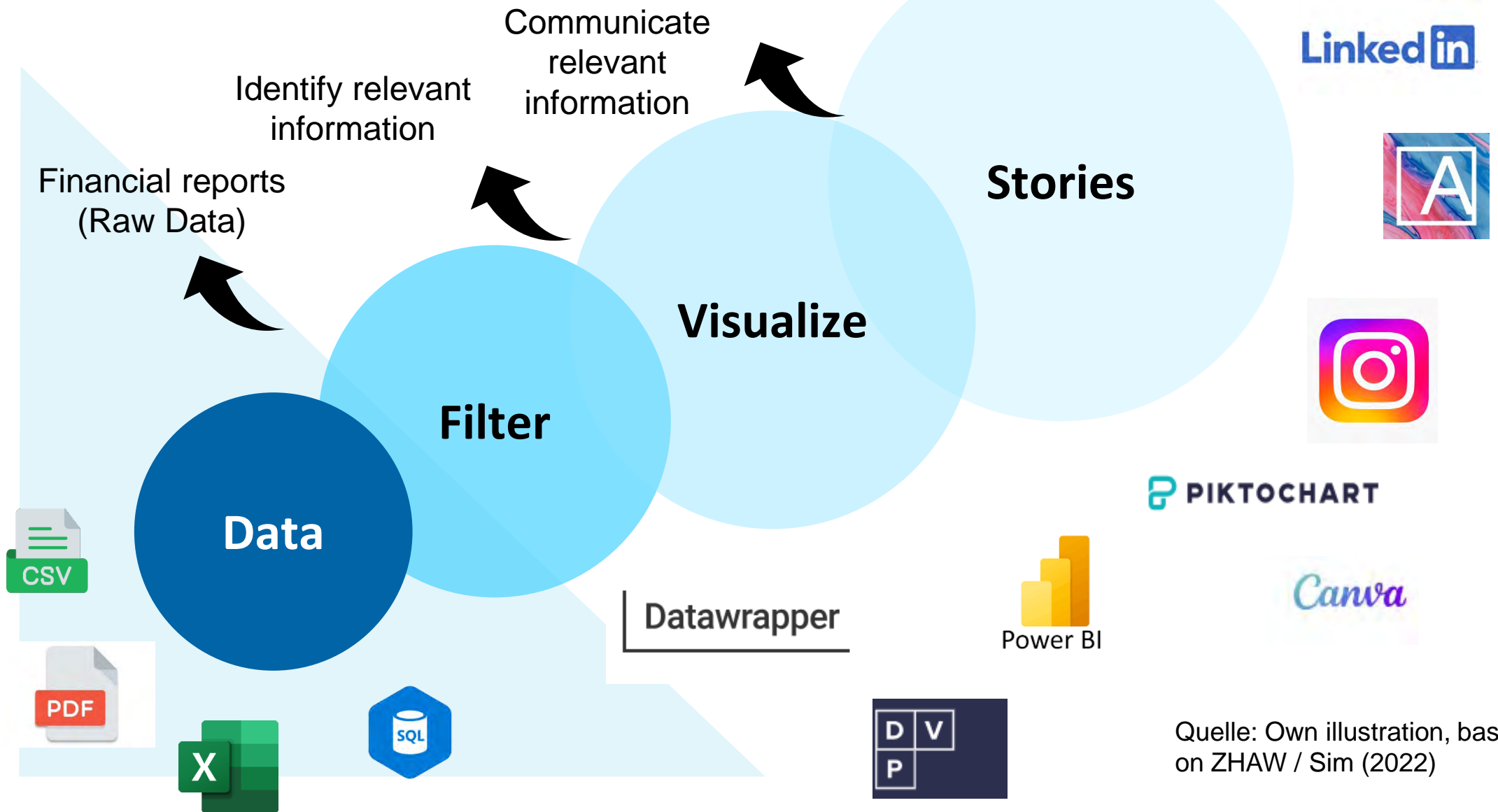


# Enhancing transparency and accountability with AI tools – From raw data to relevant information



Quelle: Own illustration, based on ZHAW / Sim (2022)

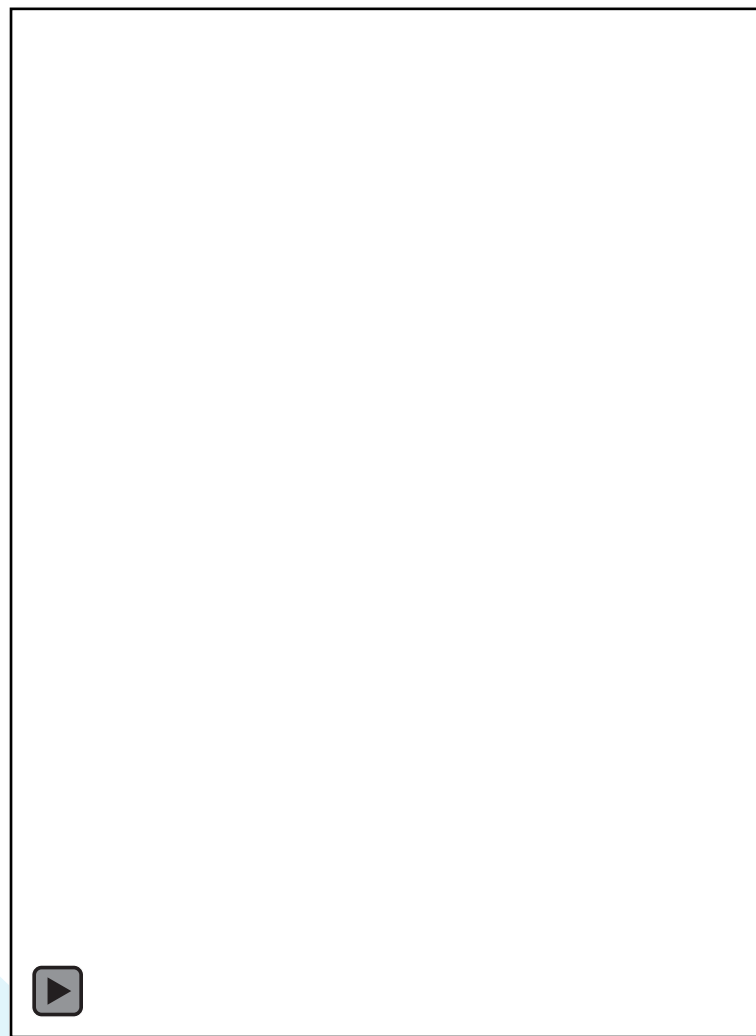
# Enhancing transparency and accountability with AI tools – From raw data to relevant information

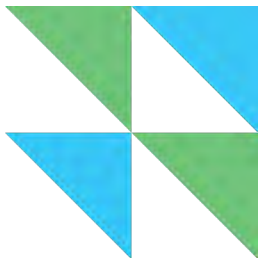




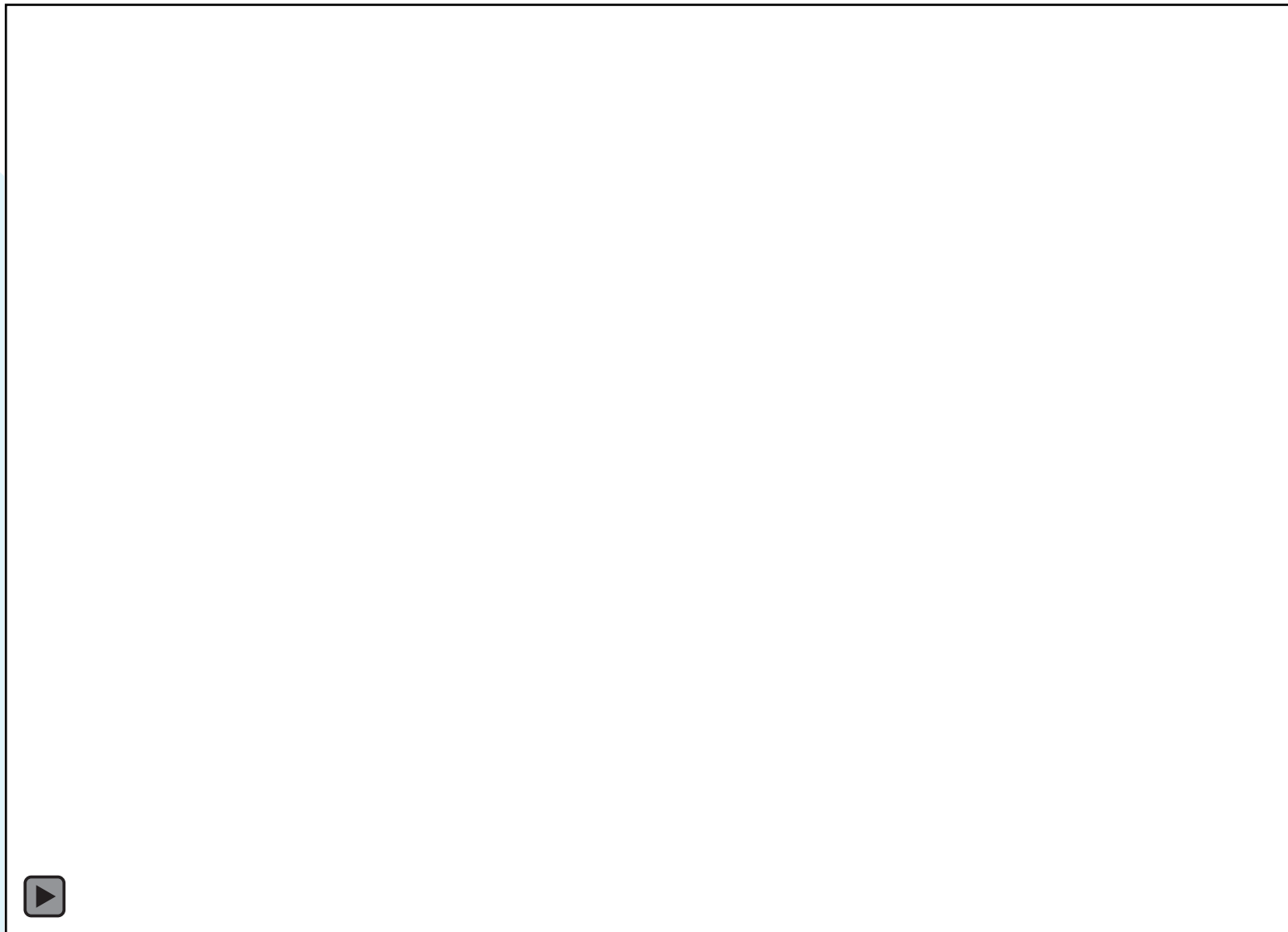


# Financial statements: Not easy to navigate





# Example: Faster visualizations with AI



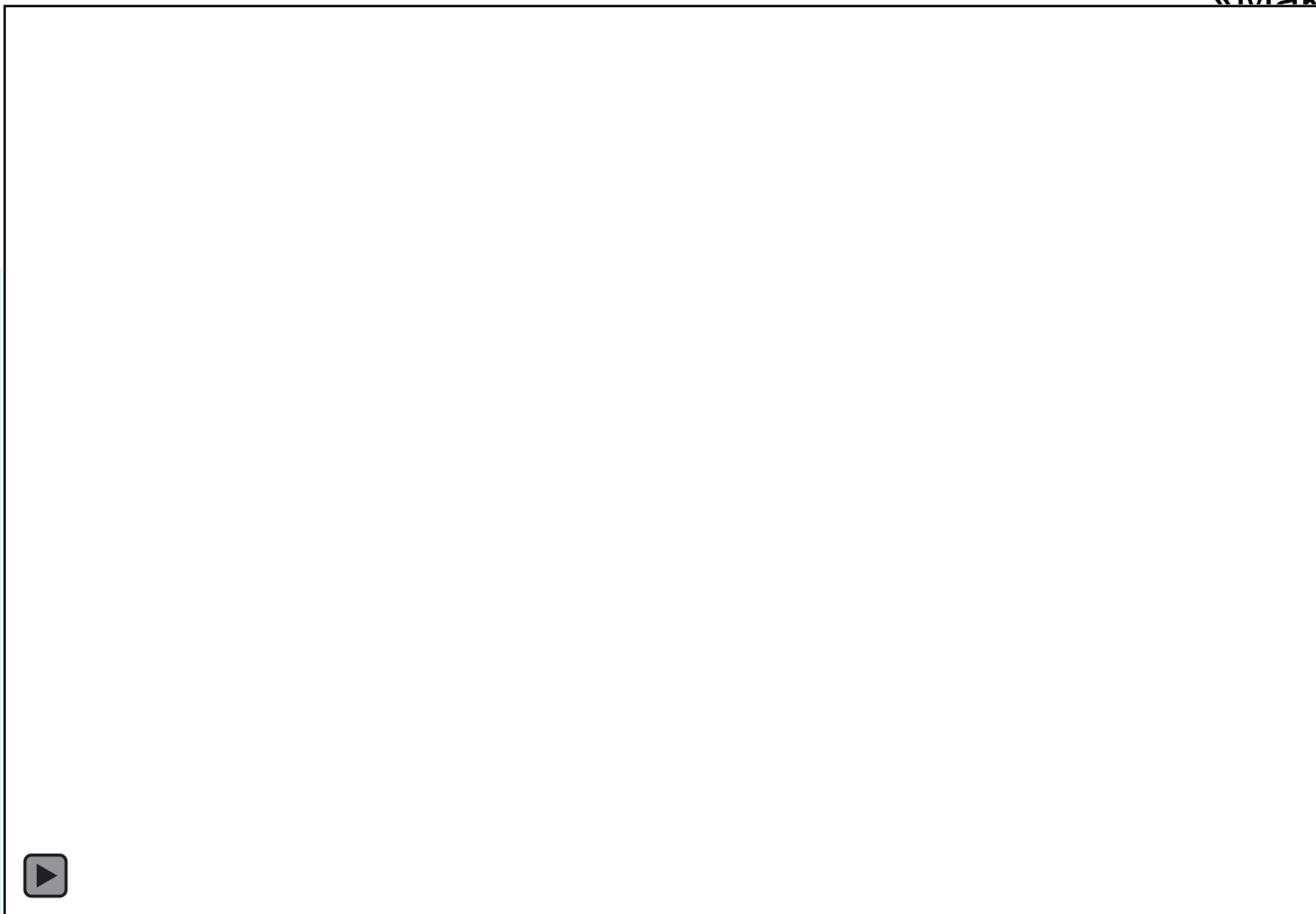
«Please visualize the  
balance sheet»





# Example: Faster visualizations with AI

«Make a visualization  
of the tax income,  
taking into account  
paying on various  
taxes»







# Accountability for the public: The public wants profit

## Research Article



PUBLIC FINANCE  
JOURNAL

### ***What Does the Public Really Want to Know About Public Finance? It's Not Crystal Clear, but the Public Wants Profit!***

Kip Murray<sup>i, c</sup>, Cathy Landry<sup>i</sup>

Throughout the world, freedom of information laws have been put into place to ensure citizens the opportunity to hold their government accountable. In practice, previous literature often finds that private gain or self-serving interests account for most national information requests, crowding out the original accountability-focused intentions of these laws. While there has been some national research around the demand for these information requests, research from a local level has been lacking. Here, data from public records requests to the City of Bellevue, Washington's Finance and Asset Management department from 2019 to 2023 are analyzed to determine what the public really wants to know about public finance.



# User-centered reporting: Getting more relevant information with AI

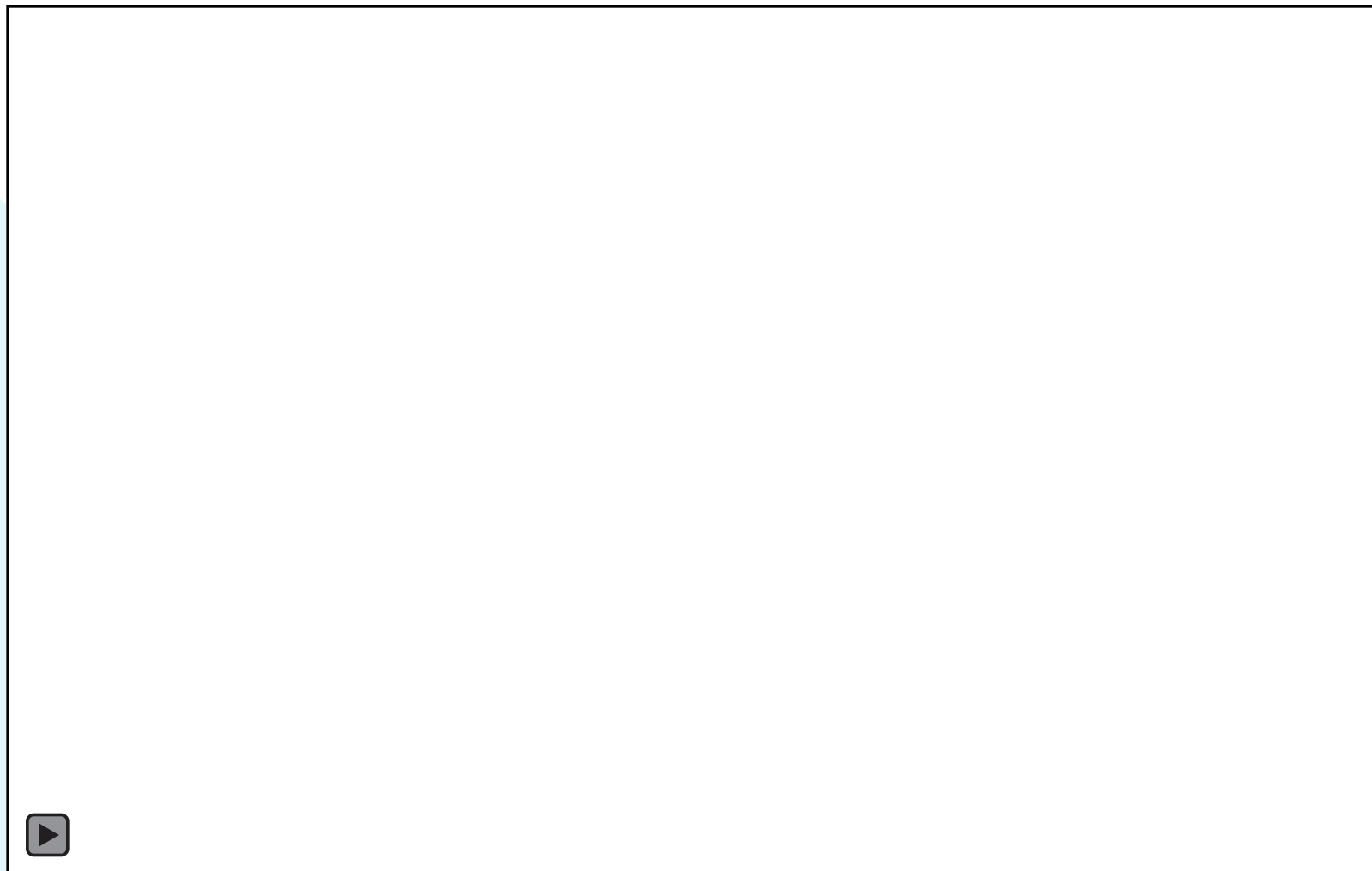
**Persona A**  
A 10-year-old  
future citizen

**Persona B**  
A senior  
resident  
interested in  
culture and art

**Persona C**  
A sustainability  
advocate



# User-centered reporting: Getting more relevant information with AI





# User-centered reporting: Getting more relevant information with AI

## Persona A: The 10-Year-Old Future Citizen

💡 "How Switzerland's money makes your future better!"

Imagine you have a piggy bank. Every time you get money, you can spend it on candy, games, or save it for something big, like a bike. Switzerland does the same with its money! It collects money from taxes and spends it on things like:

- **Schools and universities** 🏫 – So you can get a great education!
- **Trains and roads** 🚆 – To make sure you can travel safely and quickly.
- **Hospitals and doctors** 🏥 – So you stay healthy.
- **Internet and technology** 💻 – So Switzerland stays modern and cool!

In 2023, Switzerland saved some extra money (a surplus of **8.4 billion francs** 🇨🇭), which means it didn't spend more than it earned. This is great because it can be used for future projects that will help you when you grow up!



# User-centered reporting: Getting more relevant information with AI

## Persona B: The Senior Resident Interested in Culture & Art

💡 "How Switzerland funds art, museums, and cultural heritage!"

Switzerland's **Federal Consolidated Financial Statements 2023** show that the country is financially strong, with a **budget surplus of CHF 8.4 billion**. Some of this money supports cultural and artistic projects, ensuring that future generations can enjoy Switzerland's rich heritage.

Key cultural investments:

- **Museums and historical sites** 🏛️ – Federal funding helps preserve Swiss history.
- **Public broadcasting & media** 📺 – Ensures high-quality content about art and culture.
- **Theater and music** 🎭 – Support for the arts means diverse and vibrant performances.
- **Swiss National Library and archives** 📖 – Keeps Switzerland's literary and historical treasures available.

The financial statements show that Switzerland remains committed to investing in cultural projects, meaning that even in times of economic challenges, the country continues to support the arts and its historical legacy.



# User-centered reporting: Getting more relevant information with AI

## Persona C: The Green Investor & Sustainability Advocate

💡 "How Switzerland invests in a sustainable future!"

Switzerland's 2023 financial statements highlight a strong commitment to sustainability. Several key investments reflect this:

### 🌱 Green Infrastructure

- CHF 2.2 billion for highways and CHF 2.4 billion for railway networks 🚆 – Encouraging public transport reduces car emissions.
- CHF 1.4 billion in telecommunications infrastructure – Digitalization reduces environmental impact.

### ♻️ Renewable Energy & Climate Protection

- Government support for sustainable energy – Investments in solar and wind energy projects.
- Subsidies for energy-efficient buildings – Encouraging green building practices.

### 🌍 Environmental Protection & Innovation

- Investment in climate research – ETH and Swiss universities receive funding for sustainability research.
- Swiss Export Risk Insurance (SERV) focusing on green investments – Encouraging Swiss businesses to adopt eco-friendly practices.





# Principles to guide the safe, responsible and effective use of AI: The UK AI Playbook



- **Principle 1:** You know what AI is and what its limitations are
- **Principle 2:** You use AI lawfully, ethically and responsibly
- **Principle 3:** You know how to use AI securely
- **Principle 4:** You have meaningful human control at the right stage
- **Principle 5:** You understand how to manage the AI life cycle
- **Principle 6:** You use the right tool for the job
- **Principle 7:** You are open and collaborative
- **Principle 8:** You work with commercial colleagues from the start
- **Principle 9:** You have the skills and expertise needed to implement and use AI
- **Principle 10:** You use these principles alongside your organisation's policies and have the right assurance in place

**Thank you for your attendance**