Ministarska konferencija CFRR-a 2025.

Korištenje umjetne inteligencije u upravljanju javnim financijama

Prof. dr. Sandro Fuchs, Veleučilište u Zürichu

Beč, 18. ožujka/mart 2025.

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Centre for Financial and Sustainability Reporting Reform
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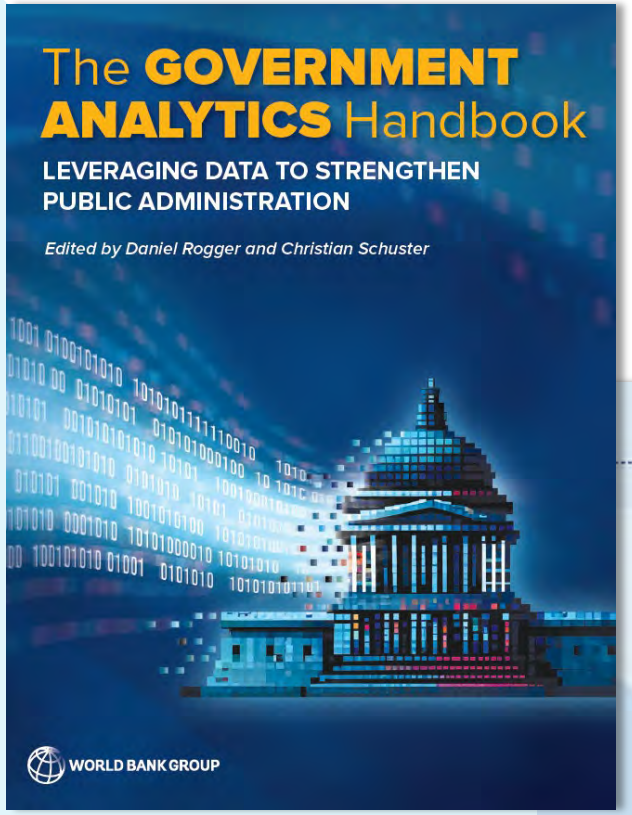
European Union

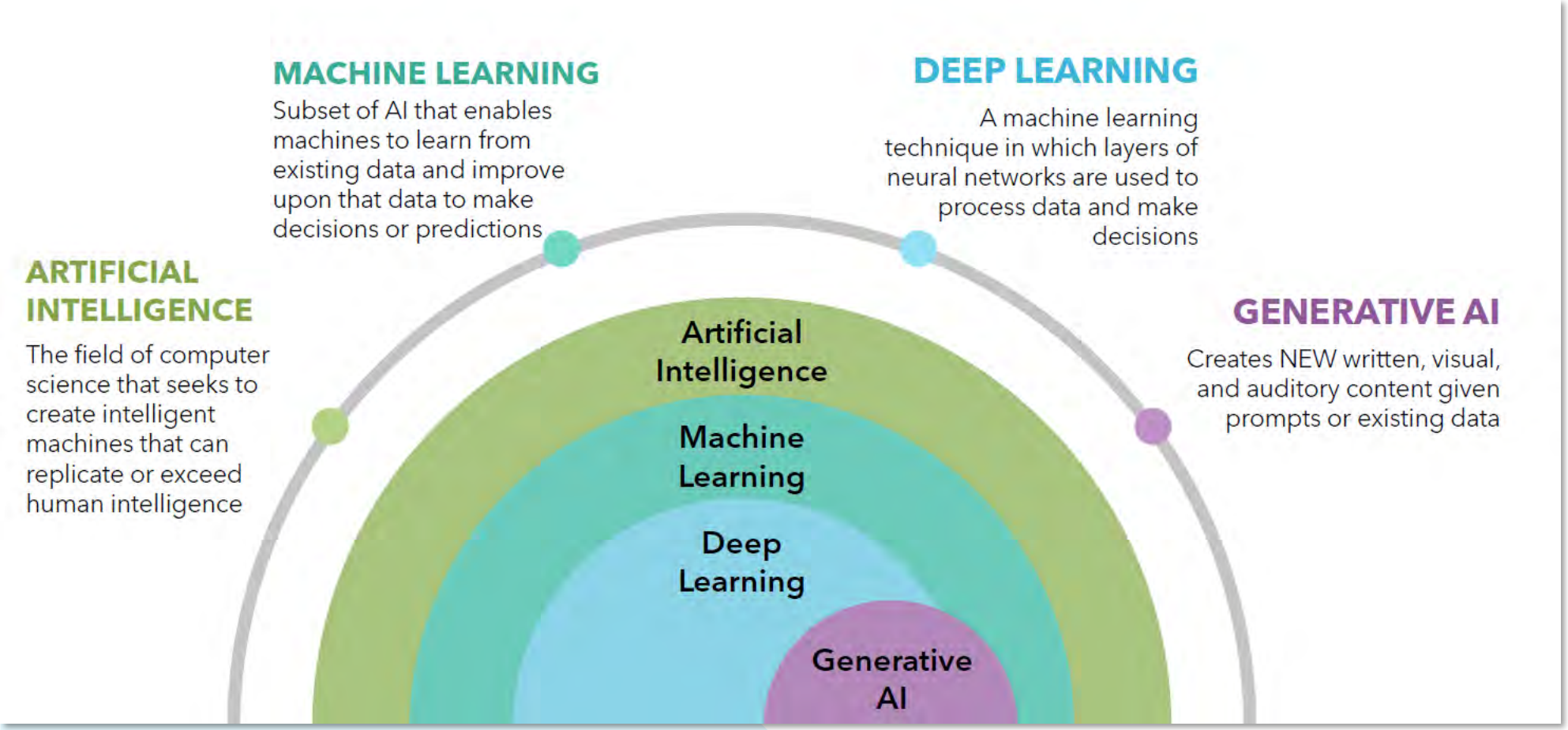
Veliki univerzum smjernica u okviru „GovTech-a”. Teško za pratiti.



Pet glavnih pitanja

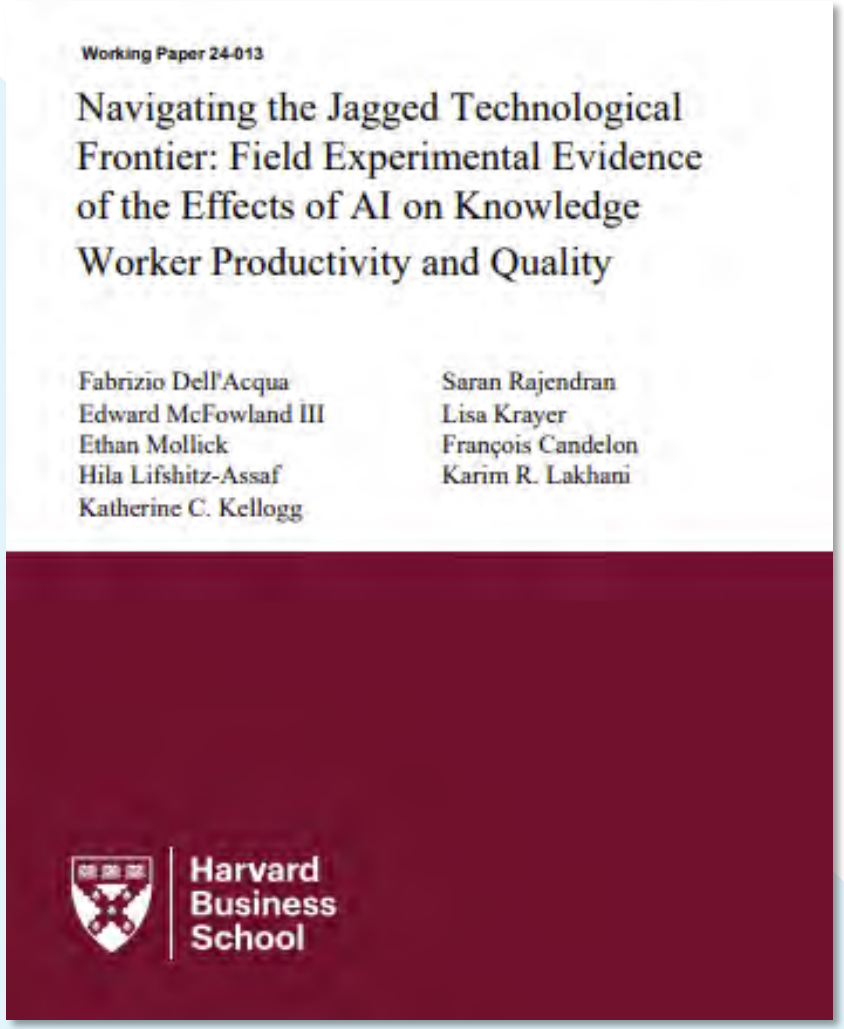
1. Koje tehnologije UI-ja postoje?
2. Poboljšava li UI učinkovitost?
3. Kako pristupiti implementaciji UI-ja?
4. Slučajevi upotrebe UI-ja u upravljanju javnim financijama?
5. Principi sigurnog, odgovornog i učinkovitog korištenja UI-ja?

Razne vrste tehnologija UI-ja



Izvor: Pay, I. (2024) / The impact of AI on Audit and quality assurance / Utjecaj UI-ja na reviziju i osiguranje kvalitete

Granice učinkovitosti UI-ja: Poboljšava li učinkovitost?


Working Paper 24-013

Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality

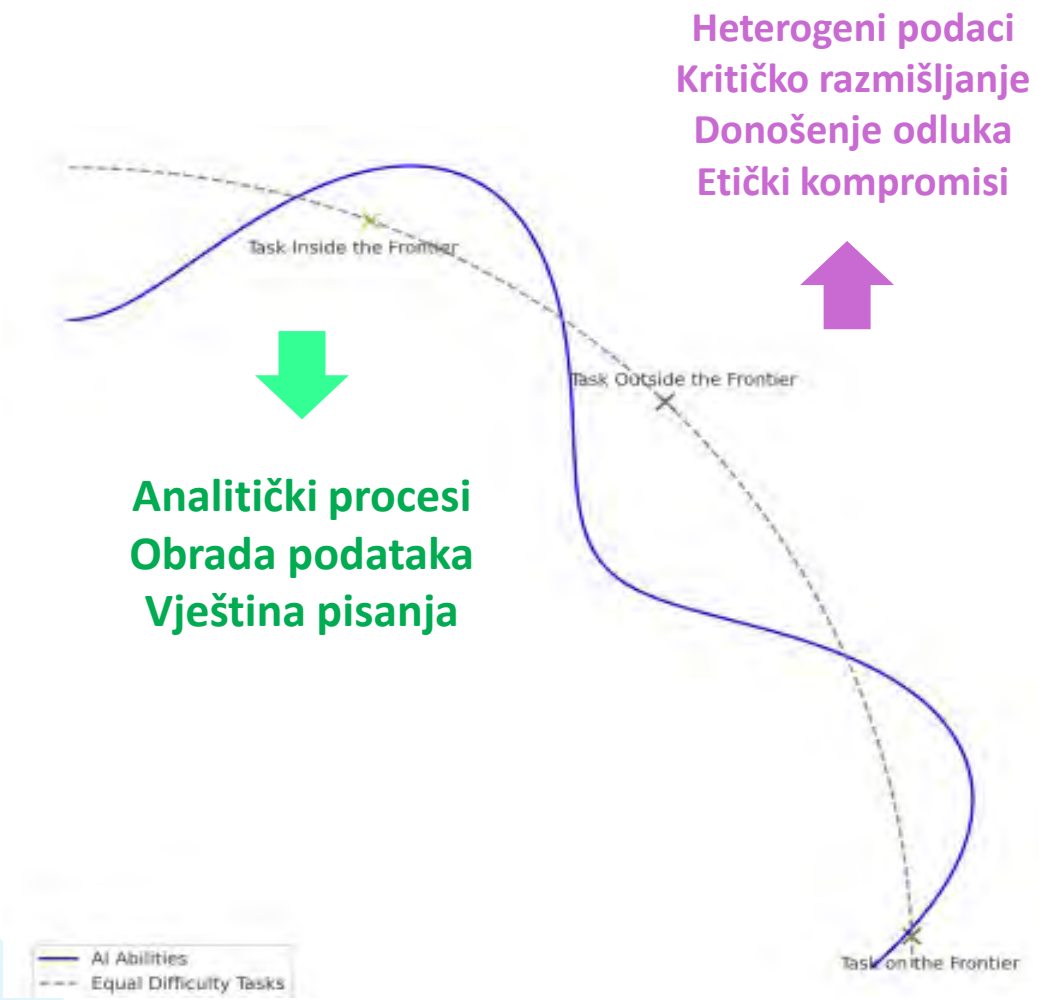
Fabrizio Dell'Acqua
Edward McFowland III
Ethan Mollick
Hila Lifshitz-Assaf
Katherine C. Kellogg
Saran Rajendran
Lisa Krayer
François Candelon
Karim R. Lakhani

Harvard Business School

- Randomizirano kontrolno ispitivanje (engl. RCT) sa 758 konzultanata tvrtke BCG
- Rješavanje 18 konzultantskih zadataka
  - 1. grupa: Nije imala pristup UI-ju
  - 2. grupa: Imala je pristup UI-ju (Chat GPT 4.0)
  - 3. grupa: Imala je pristup UI-ju (Chat GPT 4.0) s pregledom prompt inženjeringa

Tehnološke granice UI-ja: UI nije superjunak

- **Mogućnosti UI-ja imaju „razvedenu tehnološku granicu" za jednaku težinu zadatka**
- **Visoki dobici učinkovitosti unutar tehnološke granice**
  - 12 posto više ispunjenih zadataka
  - 25 posto brže izvršavanje zadataka
- **Značajni gubici učinkovitosti izvan tehnološke granice**
  - 19 posto veći rizik od pogrešnih rezultata

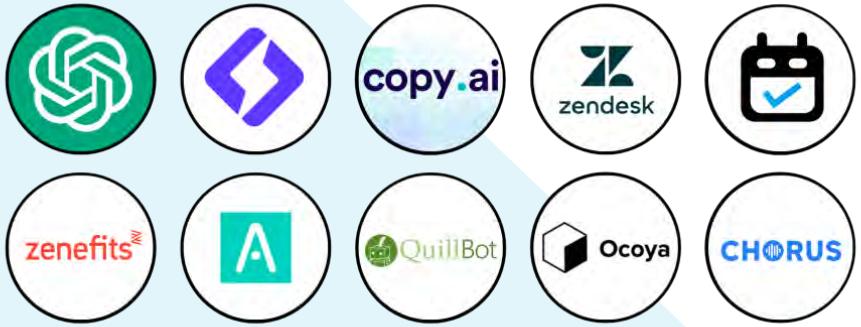


Izvor: Dell'Acqua et al. (2022)

Što to sve znači za UJF?

Kako to ne raditi

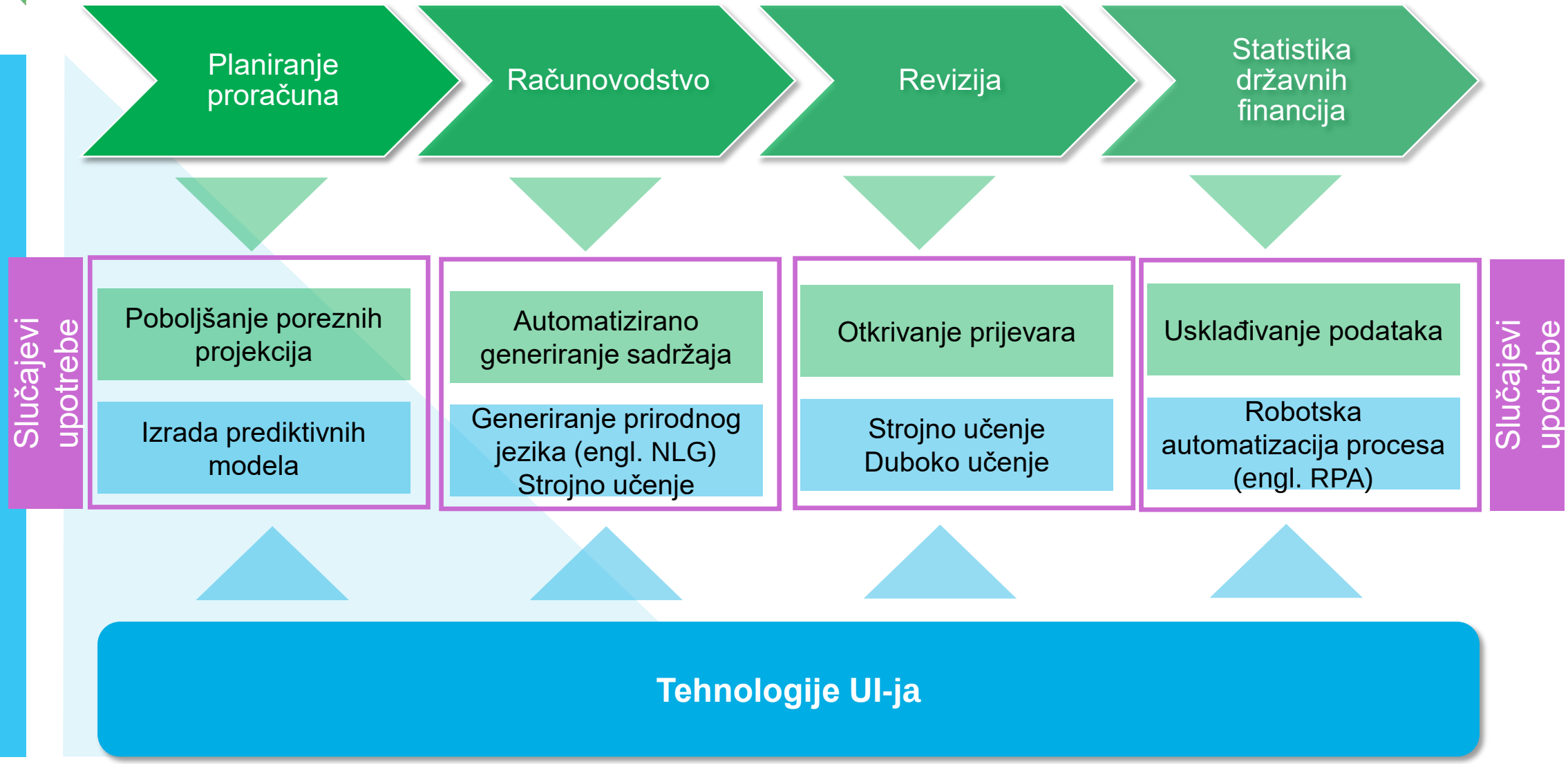
„Veliki sam ljubitelj UI-ja, moramo ga koristiti”
„Moramo biti inovativni”
„Trebamo najnoviju tehnologiju”



Crna kutija = Ne znamo ciljeve, probleme, slučajeve upotrebe, vještine, ljude, …

Izvor: OECD (2024), Fuchs et al. (2022)

Kako to raditi: Usklađivanje potreba UJF-a i tehnologija UI-ja



Potencijalni slučajevi upotrebe u univerzumu UJF-a

Planiranje proračuna

- Izrada fiskalnih projekcija, prediktivna analitika
- Izrada troškova politika (rodno osjetljivo planiranje proračuna, zeleno planiranje proračuna, itd.)
- Interaktivno izvještavanje o izvršenju proračuna (platforma Power BI)
- Praćenje politika i proračuna

Računovodstvo

- Automatizacija standardnih zadataka (npr. procesi obrade plaća, usporedba dokumenata)
- Virtualni računovodstveni asistenti („bot za MRSJS)
- Automatizirano generiranje sadržaja (npr. nacrti izvještaja)
- Interaktivni financijski izvještaji (platforma Power BI)

Revizija

- Otkrivanje nepravilnosti / prijevara
- Podatkovna analitika za reviziju učinka
- Generiranje sadržaja (npr. nacrti izvještaja)

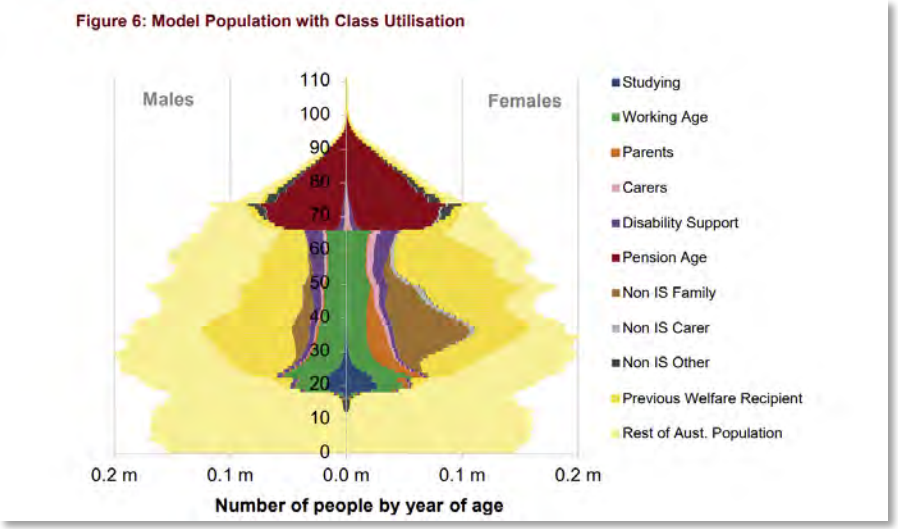
Statistika državnih financija

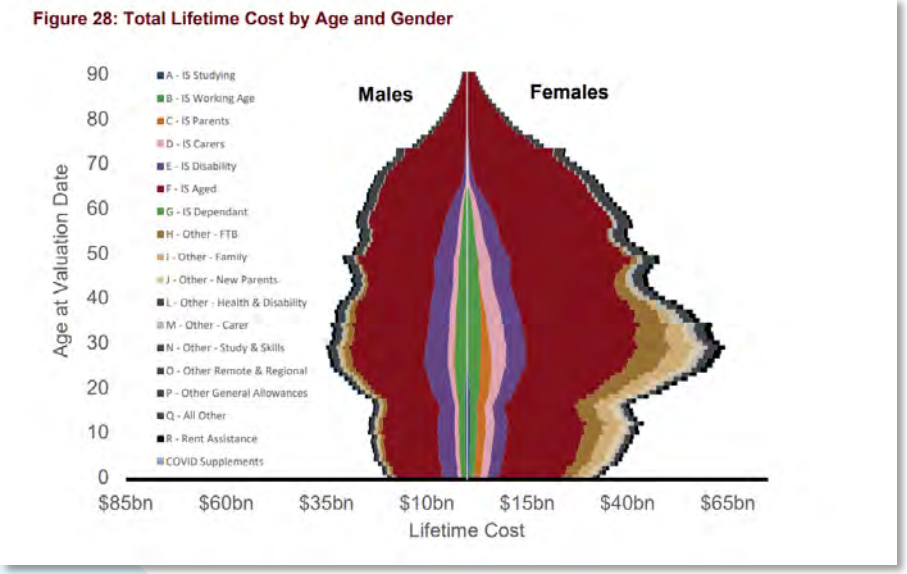
- Usklađivanje računovodstvenih podataka i podataka statistike državnih financija
- Generiranje sadržaja (npr. nacrti izvještaja)

Tehnologije UI-ja

Primjer: Izrada troškova politika s pomoću UI-ja u Australiji

- Pristup prioritetnog ulaganja (engl. PIA) u socijalnu skrb u Australiji
- Aktuarski model izrađen s pomoću UI-ja koji simulira financijsku putanju građana/korisnika tijekom njihova života

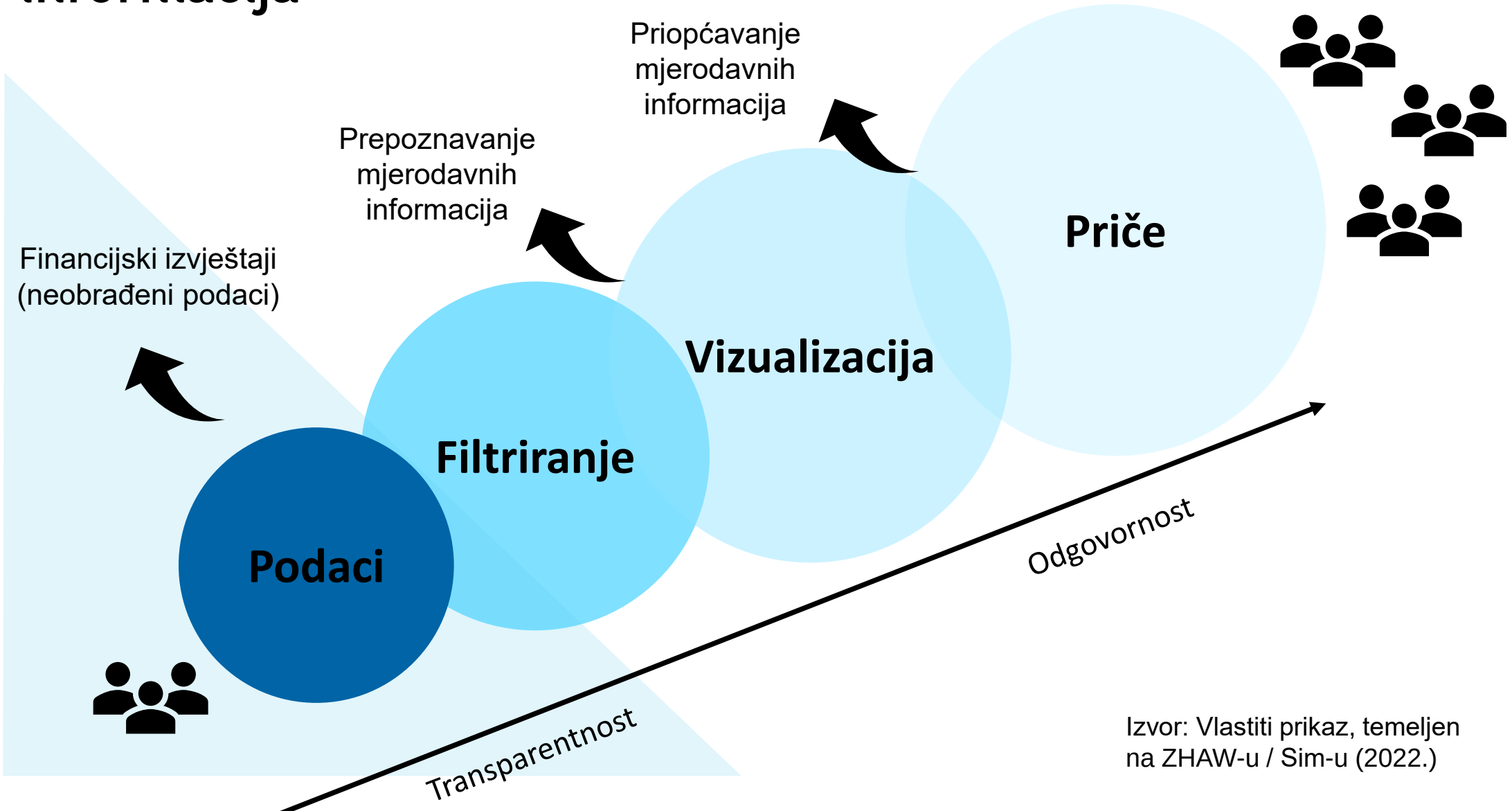




Izvor: Vlada Australije, Ministarstvo socijalnih usluga (2022.)

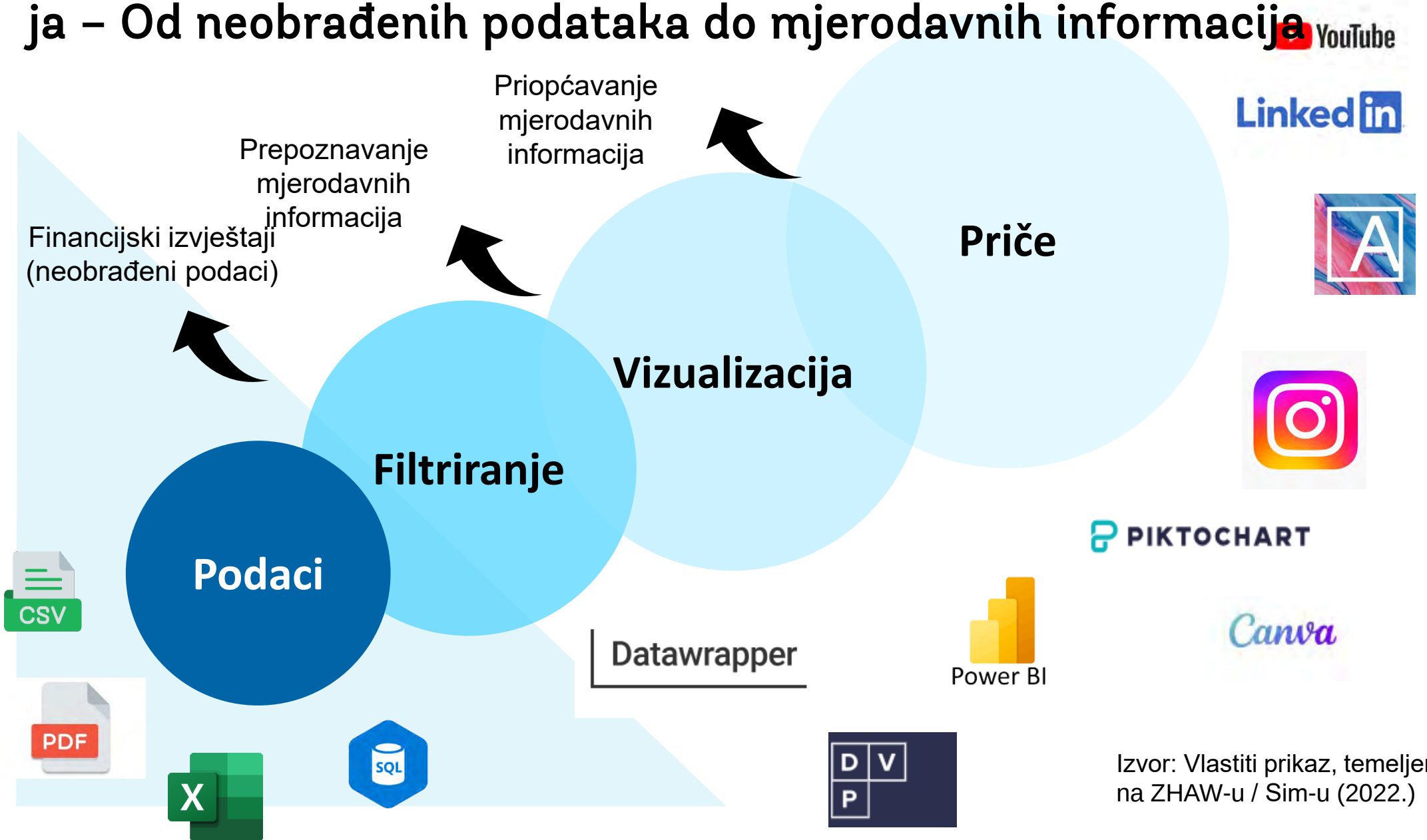
Primjer: Korisnici se teško snalaze u kompleksnim računovodstvenim informacijama

Poboljšanje transparentnosti i odgovornosti s pomoću alata UI-ja – Od neobrađenih podataka do mjerodavnih informacija



Izvor: Vlastiti prikaz, temeljen na ZHAW-u / Sim-u (2022.)

Poboljšanje transparentnosti i odgovornosti s pomoću alata UI-ja – Od neobrađenih podataka do mjerodavnih informacija



Izvor: Vlastiti prikaz, temeljen na ZHAW-u / Sim-u (2022.)

Financijski izvještaji: Snalaženje nije jednostavno

Primjer: Brže vizualizacije s pomoću UI-ja

olim vizualizaciju
bilance stanja”

Primjer: Brže vizualizacije s pomoću UI-ja

Izradi vizualizaciju
eznih prihoda,
odeći različite
poreze”

Odgovornost prema javnosti: Javnost želi profit

Research Article

PF 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[i, c], Cathy Landry[i]

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.

Izvještavanje usmjereno na korisnika: Dobivanje mjerodavnijih informacija s pomoću UI-ja

Osoba A
10-godišnji budući građanin

Osoba B
Stariji stanovnik kojeg zanima kultura i umjetnost

Osoba C
Zagovaratelj održivosti

Izvještavanje usmjereno na korisnika: Dobivanje mjerodavnijih informacija s pomoću UI-ja

Izvještavanje usmjereno na korisnika: Dobivanje mjerodavnijih informacija s pomoću UI-ja

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!

Izvještavanje usmjereno na korisnika: Dobivanje mjerodavnijih informacija s pomoću UI-ja

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.

Izvještavanje usmjereno na korisnika: Dobivanje mjerodavnijih informacija s pomoću UI-ja

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.

Principi sigurnog, odgovornog i učinkovitog korištenja UI-ja: Priručnik za korištenje UI-ja UK-a

- **1. princip:** Znate što je UI i koja su joj ograničenja
- **2. princip:** Koristite UI na zakonit, odgovoran i etički način
- **3. princip:** Znate na koji način sigurno koristiti UI
- **4. princip:** Imate značajnu ljudsku kontrolu u pravom trenutku
- **5. princip:** Razumijete na koji način upravljati životnim ciklusom AI-ja
- **6. princip:** Koristite pravi alat za posao
- **7. princip:** Otvoreni ste i suradljivi
- **8. princip:** Od početka radite s poslovnim kolegama
- **9. princip:** Imate potrebne vještine i stručnost za implementaciju i korištenje UI-ja
- **10. princip:** Koristite ove principe povrh politika vaše organizacije i osigurajte pravo jamstvo/garanciju

Hvala vam za pažnju