Documenting the digital economy

Perspective of law and technology on creating a digital twin for XAI

Overview

I.   Problem and solution(s) of how to tax the digital economy

II.   More Automation as the solution for everything (?)

     1.   Pros and cons of the use of new technologies?

     2.   New technologies in use?

     3.   Use of new technologies – status quo?

     4.   Focus on automated content generation applications

III.   Wrap Up

The Problem: how to tax the digital economy

- intangible & network driven without a physical nexus on the ground (OECD 2015) / Glocalization (de la Feira 2022)

- Challenge for VAT / Personal Income / Corporate Income (!)

- *Taxing where value is created (G20 / EU / OECD / UN 2022/2023)*

- Nexus debate – how can we controll the increasingly decentralized value contributions? (Winterhalter et al 2023)

Figure 1: Trilemma of data-based taxation approaches and its resulting effects (Winterhalter / Niekler 2020 / 2021 / 2022)

The solution to solve the Trilemma

On a material level: How to achieve different dimensions of *taxation where value is created*?

- Withholding Tax (UN Art 12 B)

- Digital Service Tax / Formulary Apportionment (EU BEFIT)

- Digital Nexus (India SEP)

- Pillar One and Pillar Two (OECD 2022)

On a formal level: implementation trough more documentation? *(Müller/Winterhalter 2021)*?

- more detailed (F&R-analysis / DEMPE / DAC 7)
- More strict (DAC 6)
- More cross border exchange (CbCR)
- More automation & use of new technologies (Tax 3.0)

More automation as the solution for everything(?)

Automation means…

- More cost savings

- Better trained personel

- More Focus on the relevant functions
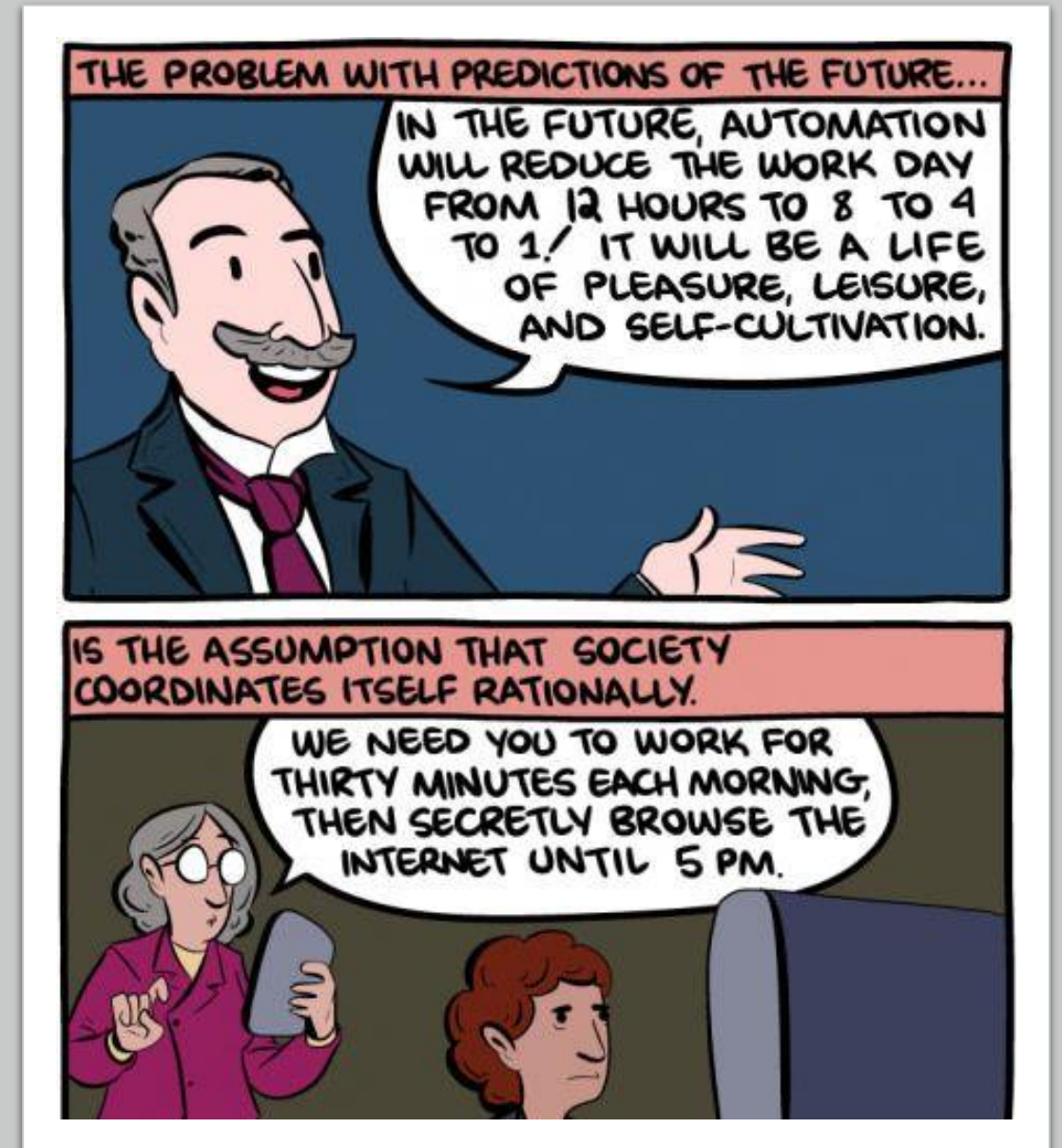
More automation as the solution for everything(?)

Automation also means…

- More Complexity and difficulty (Peuthert / Schaebs 2022)

- More conflicts through trade & tax secrets (Kuźniacki�´2022)

- More Blackbox & XAI-problems (Hadwick 2023)
    - **R**eservation of the law
    - **E**quality of the law and respective equality of administrative action
    - **P**rinciple of proportionality

- More Arms race between tax admins and MNE

Use of new technologies: Status Quo

Automation for business means…

- More use of new technologies like
  - Process Mining to describe…
  - Blockchain to secure…
  - Artificial Intelligence to analyze…
- *… an automated transfer pricing process to create a **digital twin*** (Müller 2022)

Automation for tax admins means…

- Digital Identities, Digitization, Data Governance
  (ITTI 2022 / Gmoser 2022)

- Germany: digital procedures, RMS, BC and AI
  (Schaebs 2022)

- More data driven approaches to detect fraud
  (Amtauer et al 2022)

Use of new technologies: Status Quo

Business: Between neccessity and reality

- On a theoretical level: data and the use of new technologies is key for success

- On an empirical level: No digital transformation of the tax function (yet)

  - broad questionaire & biased (Big 4 monitoring, Aibidia 2020)

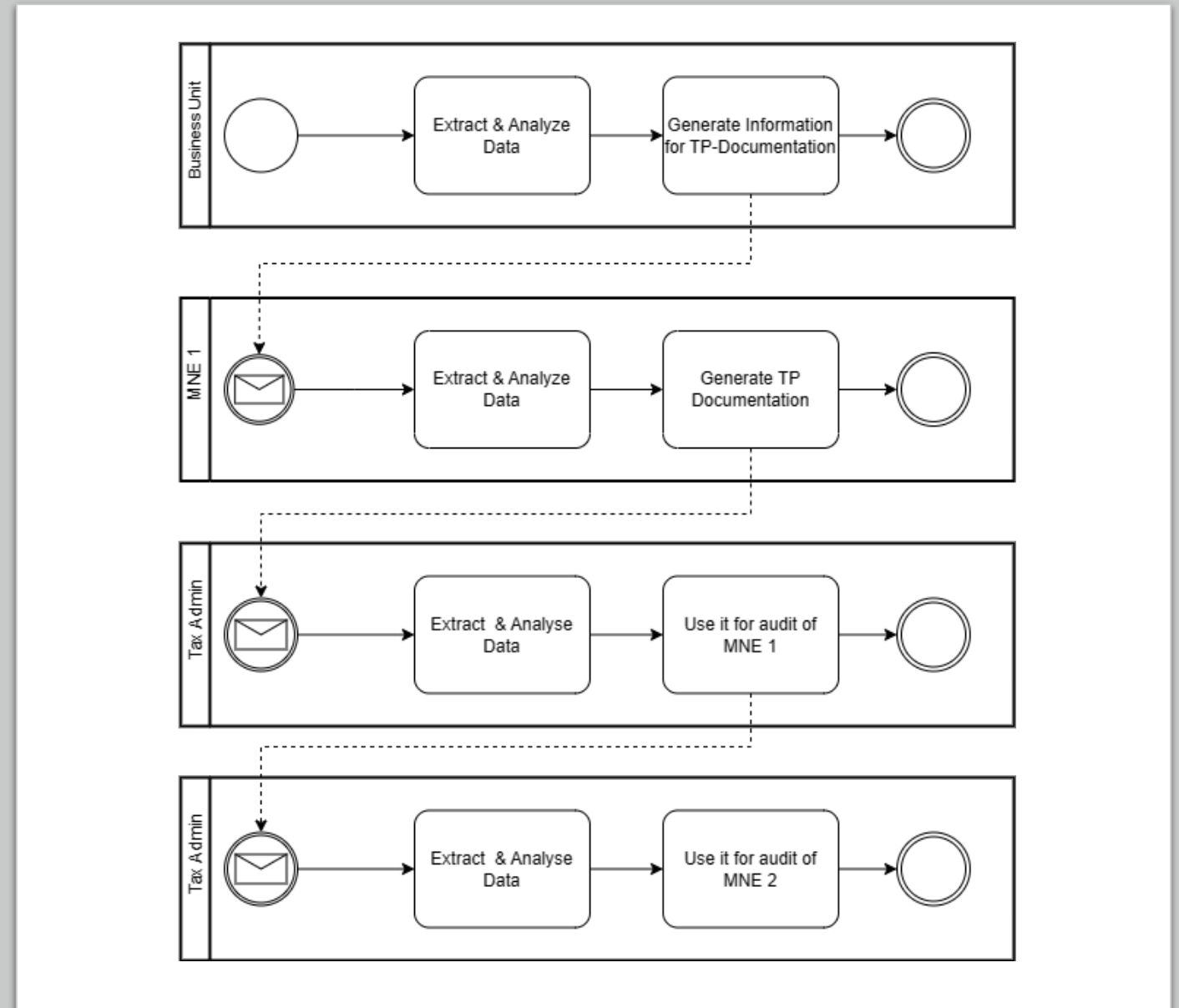 - „expensive, complicated, inefficient" (Winterhalter, Greil, Wargowske, Niekler 2021)

Tax Administrations.: Between digital sovereignity & deterrence

- "(…) use cutting-edge techniques to exploit data in ways that reduces the need for human intervention" (OECD 2021)

- Front runner status for BEPS, deterrence, or *prestige*

- No qualitative empirical verification, only quantitative empirical verification
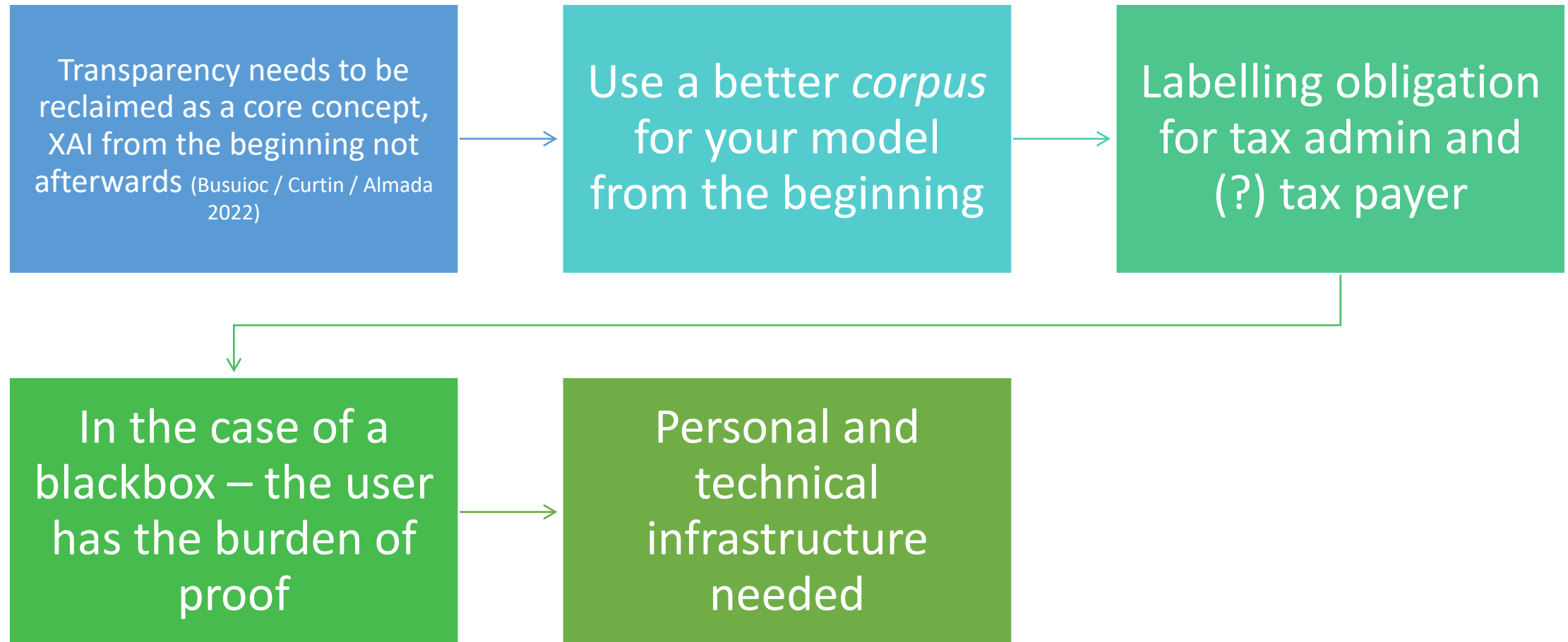
What problems do we get with the *new world* of AI?

- P1 (Data Quality): Where do we get the data from?

- P2: (Data XAI): How do we control the analysis?

- P3: (Combination of P1&P2): what happens if content can be easily generated and hardly explained? What happens if the tax AI analysis is based on poor quality, non-explainable data?

How to use new technologies…

Transparency needs to be reclaimed as a core concept, XAI from the beginning not afterwards (Busuioc / Curtin / Almada 2022)

Use a better *corpus* for your model from the beginning

Labelling obligation for tax admin and (?) tax payer

In the case of a blackbox – the user has the burden of proof

Personal and technical infrastructure needed

Wrap Up

- New technologies can help to *tax where the value is created*

- There have been numerous attempts to implement new technologies from MNE / Software providers and tax administrations

- Empirical tamper proof validation of the quality of new technologies remains unclear -> how do we fix it?

- Automated content generation accelerates the problem of XAI – what does it mean for REP?

Thank you.

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