Transfer Pricing for Data Businesses

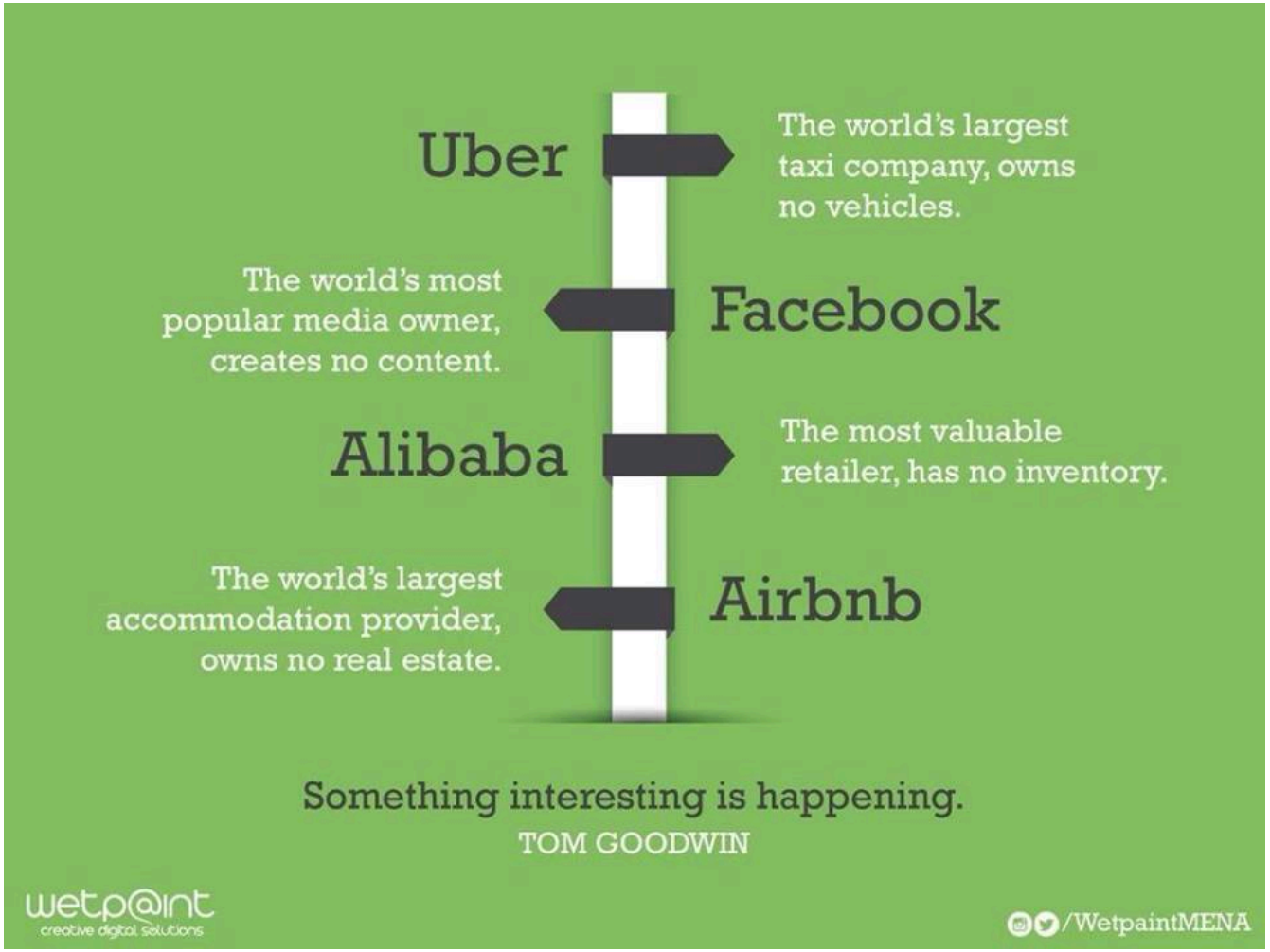
How to apply the arm‘s length principle to the digital economy

Taxing the digital economy | ACTL-IBFD-Conference | Amsterdam 28 June 2018



Marcel Olbert/Christoph Spengel
University of Mannheim

Disruption in the Digital Economy



Disruption in the Digital Economy



vs. *“Big Data is Not the New Oil”* (Thorp, 2012)

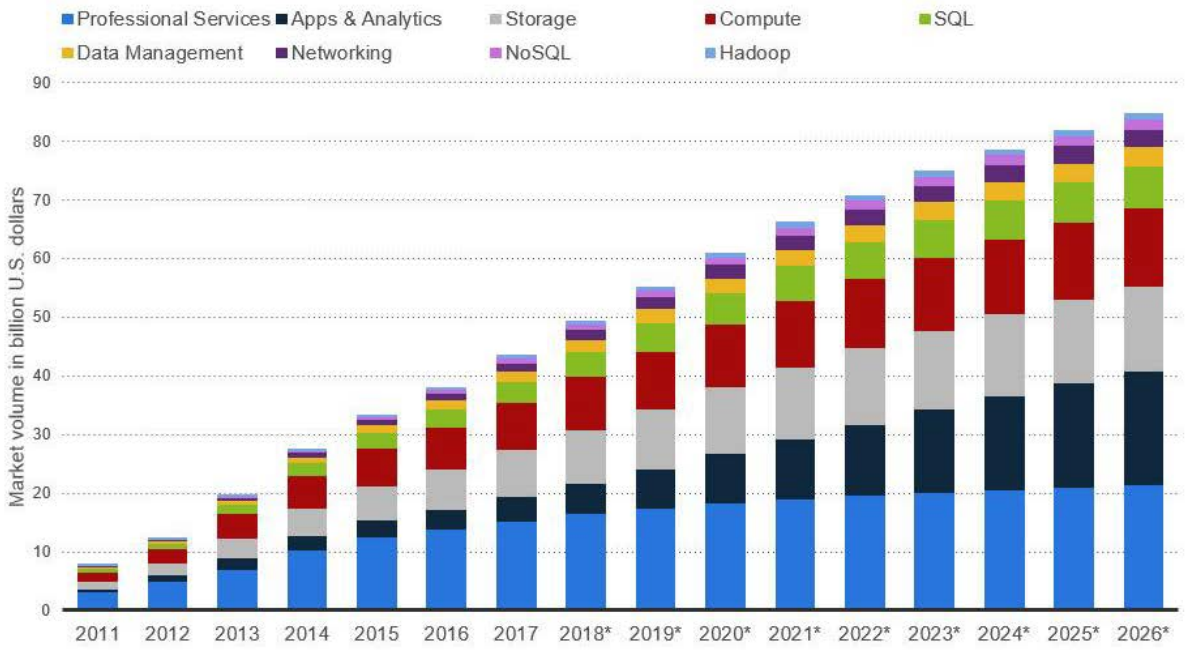
Harvard Business Review

Agenda

1. Introduction and Open Questions
2. Current Developments and Underlying Presumptions
   - EU Proposals
   - OECD, Current State of the ALP
3. Data and Value Creation in the Digital Economy
4. Survey Evidence on Transfer Pricing Challenges
5. Discussion of Policy Presumptions
6. Conclusion & Open (Research) Questions

1. Introduction and Open Questions

Big Data Market Forecast Worldwide from 2011 to 2026, by segment (in billion U.S. dollars)



*…**current international tax standards** may **not have kept pace** with changes in global business practices, in particular **in the area of intangibles** and the development of the digital economy. (OECD, 2013, 2015, 2018)*

1. Introduction and Open Questions

- What is the digital economy?
- What is the value of data?

- Taxable nexus through data mining, value assessment unclear
- Value reflected in local ad revenue
- Update 2018:
  - Analysis of value chains, value network/shop

→ No consensus on data and user participation

- Misalignment: taxation and place of value creation
- Digital BMs are different
- Assets: user data, data analytics

→ Tax at location of data collection

Status Quo

- No conceptual analysis/solution, tendency towards ring-fencing (EC)
- Integration of value creation through data in current system OR alternative solutions (new nexus, taxes)?

View of McAfee/Brynjolfsson (2017):

- Machine ←→ Mind | Platform ←→ Products | Crowd ←→ Core
- Minds, products, core are not obsolete, rather
  "need to rethink balance", "understanding when, where, how, and why machines, platform, and crowds can be effective is the key to success (…)"

2. Current Developments and Underlying Presumptions



Goals

„modern and stable tax framework which stimulates innovation“
…“solution which can ensure a fair and effective taxation“
…“rules…that are fit for the characteristics of digital businesses“
…“make sure that public finances .. are sustainable“
… „fight against aggressive tax planning“

1. Comprehensive solution
   - Digital PE (significant digital presence)
   - (New) principles for attributing profits
2. Interim solution: Targeted Digital Services Tax (DST)

- Presumptions
  1. Corporate tax rules are outdated
  2. Digital businesses are undertaxed (ref. to Digital Tax Index 2017 (ZEW/PwC))
  3. Significant digital presence if X revenue, # of users, # of contracts
  4. DST where largest gap between value creation and ability to tax
  5. It is possible to distinguish between business models for which DST applies
  6. „Necessary to find a targeted, interim solution at EU level“

3. Value Creation in the Digital Economy

What is value creation?
→Most pressing question for current tax policy, in particular: transfer pricing (Stewart, 2015)
→First analysis in tax policy: OECD interim report (03/2018) (ch. 2.3) (see Olbert/Spengel 2017)

Business model analysis based on interdisciplinary research and practical examples

- Digitalization = intangibles also in process changes and „organizational inventions“ (Brynjolfsson/McAfee, 2015)
- Value through differentiation along entire value chain (Porter, 1985)
  - IT was supportive, should now be integral part of value chain analysis (Amit/Zott, 2001)
- Olbert/Spengel (2017): Business model analysis based on
  - Offer, customer, infrastructure, profitability (sales-cost) (Osterwalder/Pigneur, 2010)
  - Value proposition, interface, service platform, organizational model, revenue model (El Sawy/Pereira, 2013)
  - Transformation of traditional business models, B2C, B2B (case studies)
- Today: Data-driven business models
  - Data mining, processing, marketing

3. Value Creation in the Digital Economy

Oil and Gas business model and taxation



Extensive taxation at (oil) source:

- Concessions (royalties), production sharing agreements, service contracts, **AND** corporate income tax.
- **<u>Justification:</u>** Negative externalities, rivalry of raw material

EY, Global oil and gas tax guide 2017
Suncor Energy Business Model: http://iveybusinessreview.ca/blogs/nzeebhba2016/2015/01/09/interview-deborah-gullaher/

3. Value Creation in the Digital Economy

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What is Data Mining?

- Techniques, methods and algorithms to analyze data (patterns or connections)
- Newer/more complex approaches: BI, Big Data (Cleve/Lämmel, 2016)



- "Data Miners": Interface between IT and business functions such as marketing or production
- Data Mining to increase the ROI (Boire, 2014)

Data Mining in practice

Google

business model Big Data

(…) learned classifiers lie at the core of many products across Google (…) Data mining lies at the heart of many of these questions.

SAP

SAP Netwaever Business Warehouse (S4/Hana)

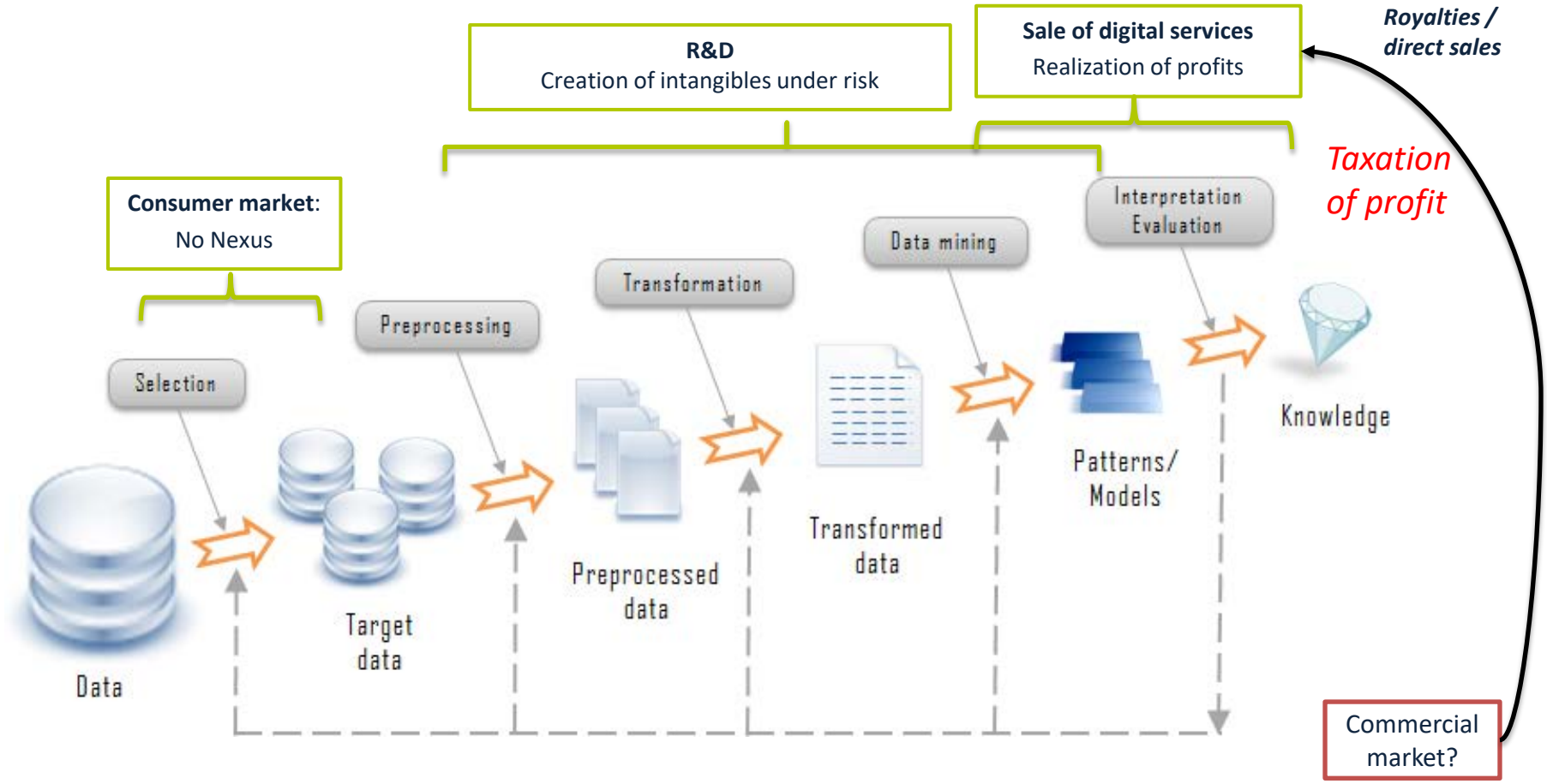
https://help.sap.com/saphelp_erp60_sp/helpdata/de/4a/eb293b31de281de10000000a114084/content.htm
http://research.google.com/pubs/DataMiningandModeling.html

Olbert/Spengel: Transfer Pricing for Data Businesses

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3. Value Creation in the Digital Economy

Data Mining Business Models



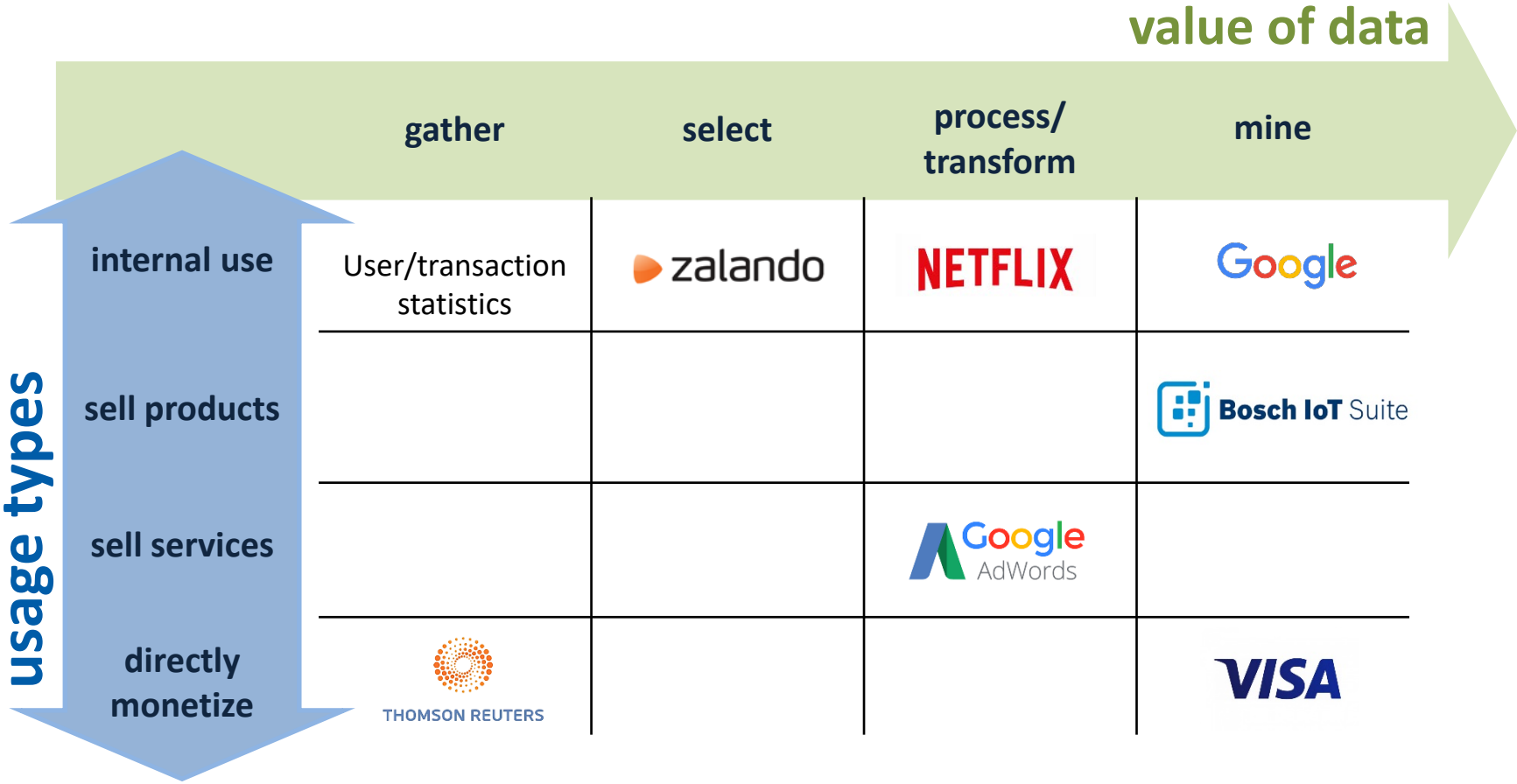
Messages

1. Data is not oil (no rivalry, different externalities)
2. Data collection (raw data) is not the key value driver

3. Value Creation in the Digital Economy

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Classification data-driven business models



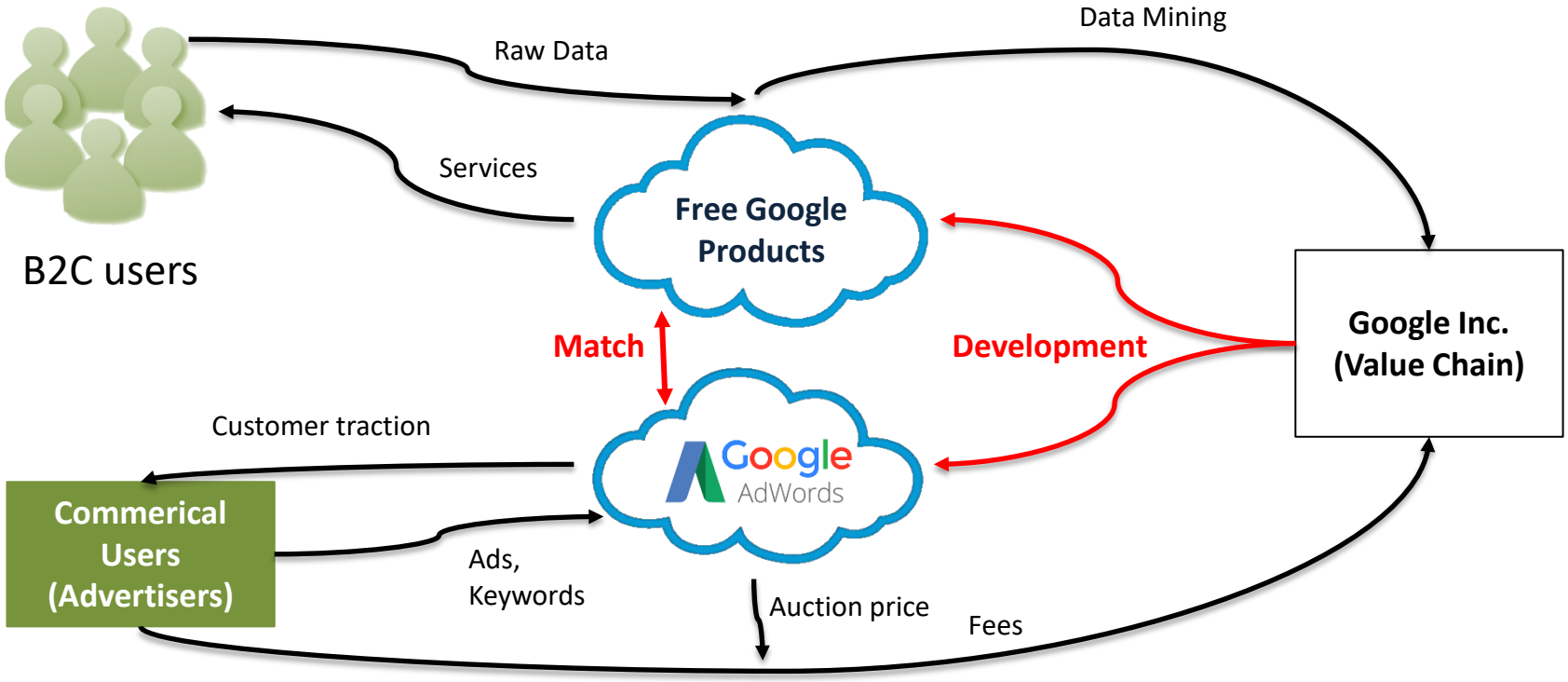
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Data Mining B2C-Example:



Core technology

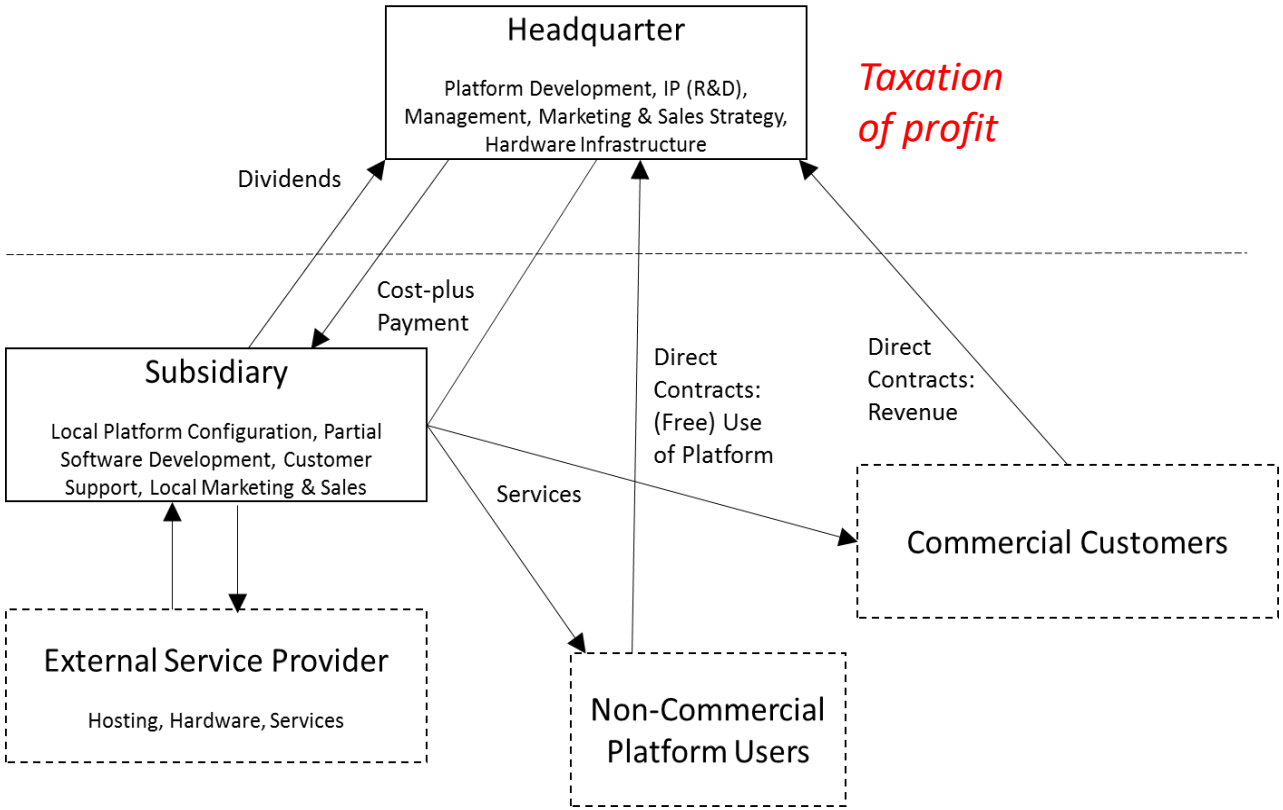
- PageRank and Hypertext-Matching Algorithm

  → matches for a user's search & advertisers (network effects)

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3. Value Creation in the Digital Economy

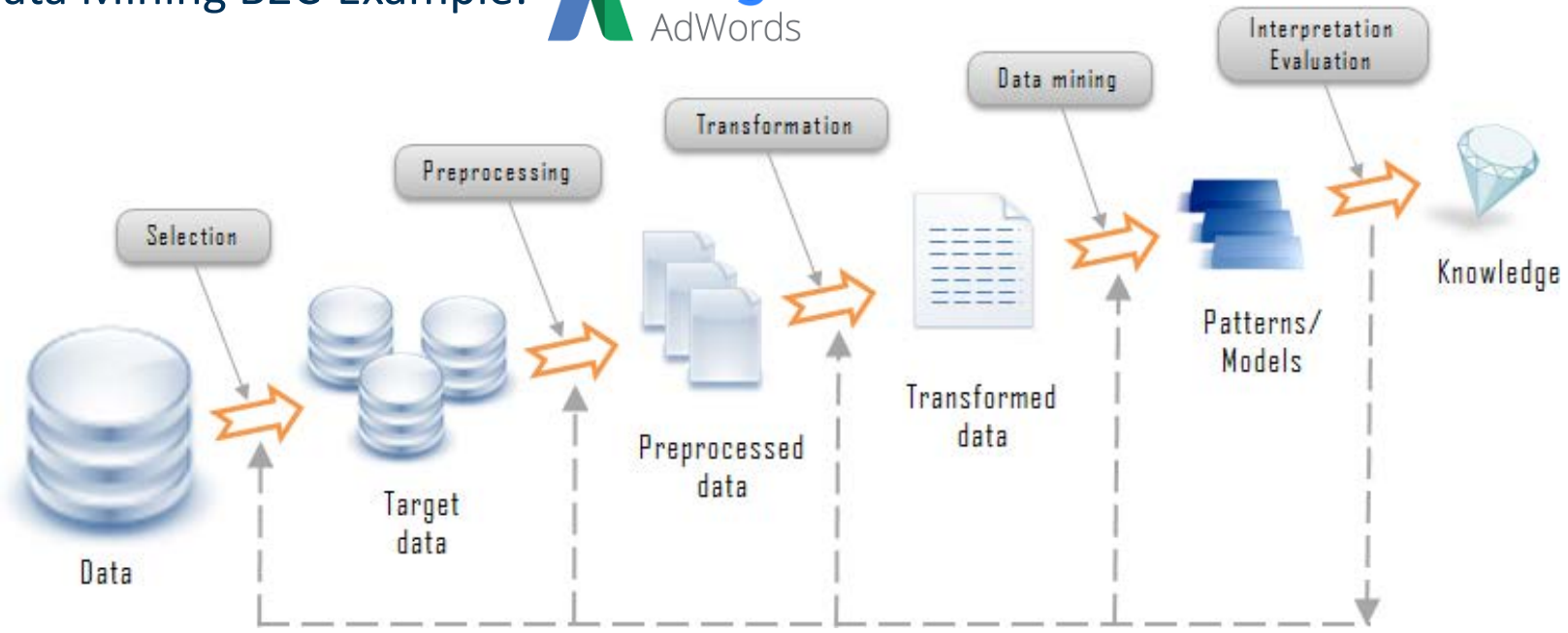
Data Mining B2C-Example: Google AdWords



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Data Mining B2C-Example: Google AdWords



Data "location"	**Consumer markets (local, e.g. NL)**	**Data centers (virtual, IE, NL, FI, BE)**	**Engineering (local, USA, IE)**	**"in use" (global)**
Google assets	Websites, server capacities	PPE for datacenters	Intangibles → HR	Platform
Google people	Customer support (NL) Technicians (global) Website developers (mainly US)	Technicians at datacenter locations	Main: USA Important: IE +some local	Marketing & Sales Strategy: USA Important: IE +some local

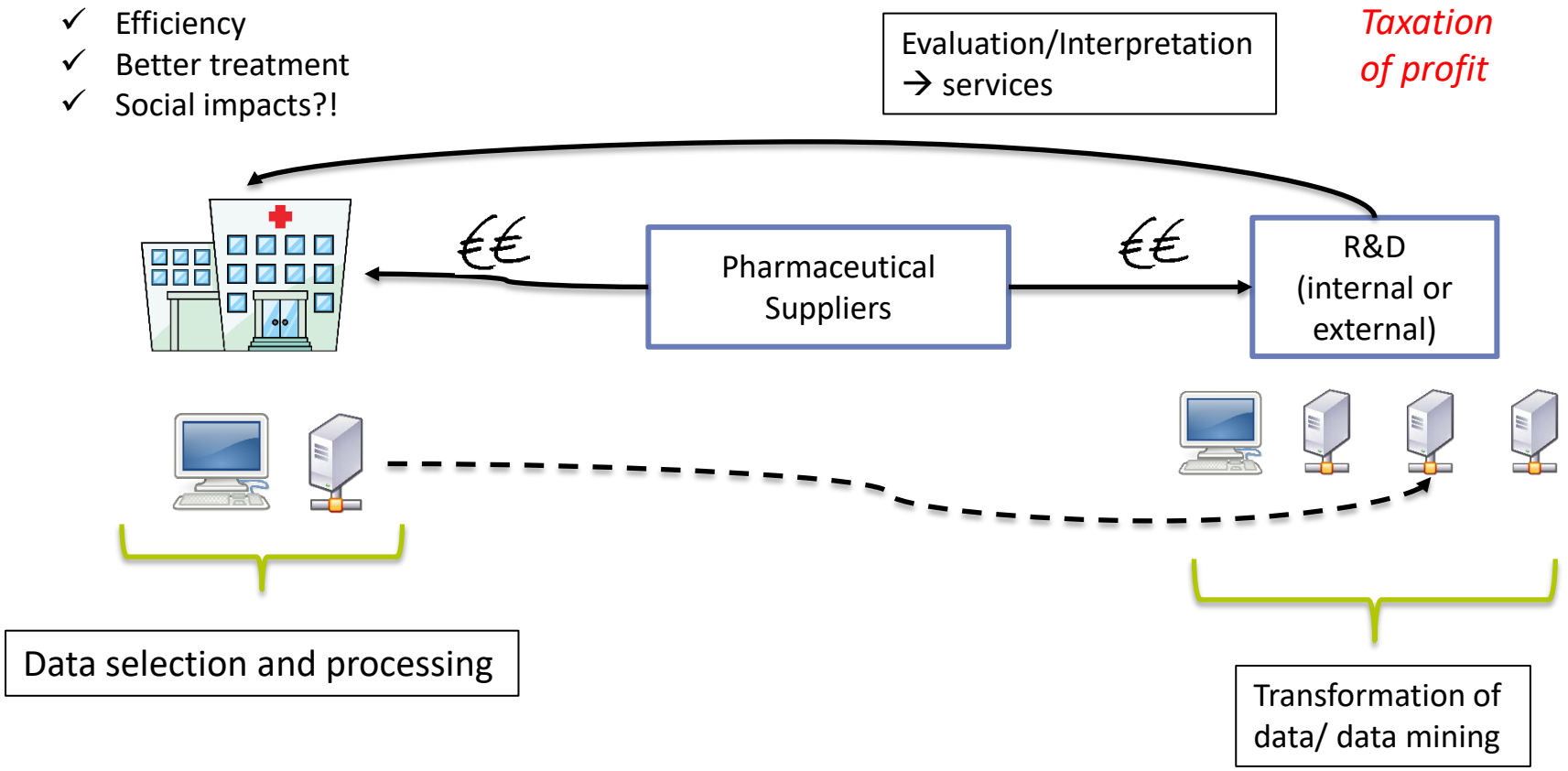
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3. Value Creation in the Digital Economy

Data Mining Example: Health Care

- ✓ Efficiency
- ✓ Better treatment
- ✓ Social impacts?!



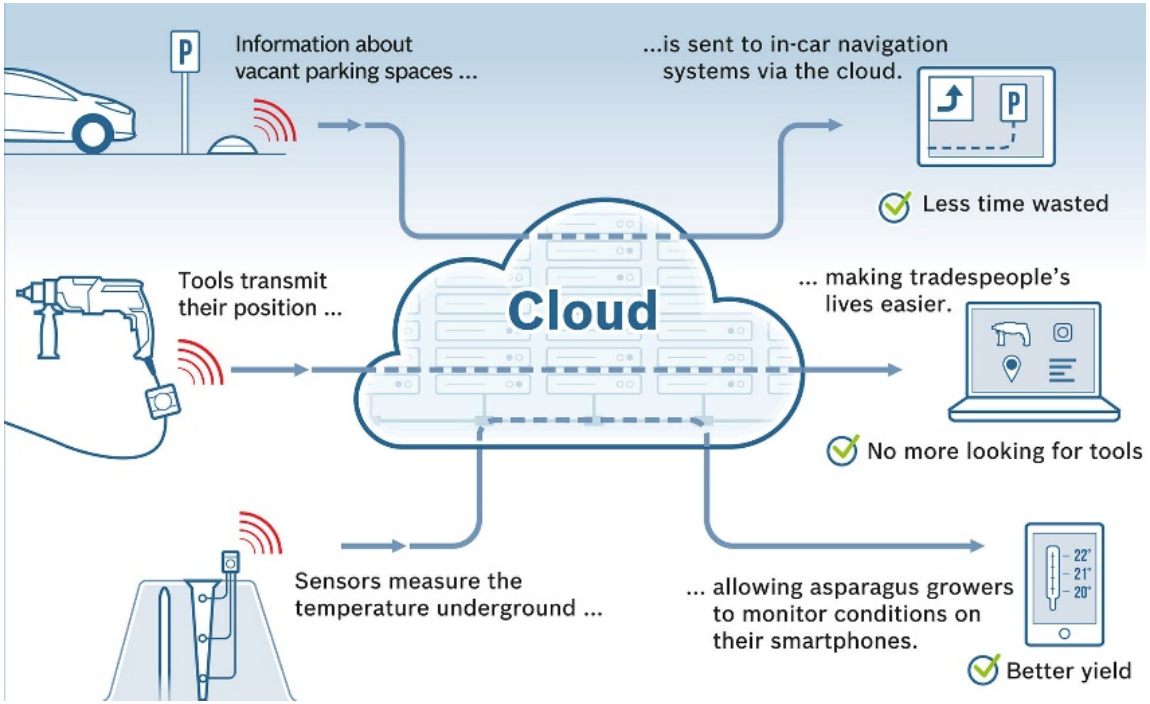
Olbert/Spengel: Transfer Pricing for Data Businesses

Vgl. u.a. Herland et al., 2014

https://the-modeling-agency.com/how-data-mining-is-helping-healthcare/, https://www.healthcatalyst.com/data-mining-in-healthcare

3. Value Creation in the Digital Economy

Data Mining example: B2B Bosch IoT cloud



Taxation of profit

- Currently: DE (R&D)
- Future under adopted rules?

Future of the automotive industry: Sell a car and…

- Provide additional services: maintenance services, entertainment, parking app, bookings, traffic
- Revenue from car (physical) or service (digital)???

Automotive is just one example! Think of healthcare, smart homes, chemicals, logistics etc.

3. Value Creation in the Digital Economy

Concluding remarks on data mining

1. Nexus not an issue unless pure collection via interned is considered value driver

2. Key question: How to apply ALP / Transfer pricing
   - People, functions, risks can be identified:
     Business model analysis and TP guidelines possible
   - Data as an opportunity:
     Arm‘s length prices due to data providers across the value chain of data mining

   → One example

   - If the data collected by Thomson Reuters is sold to another party that extracts value from it (e.g. financial analysts, researchers) …
   - We know the value of collected raw data

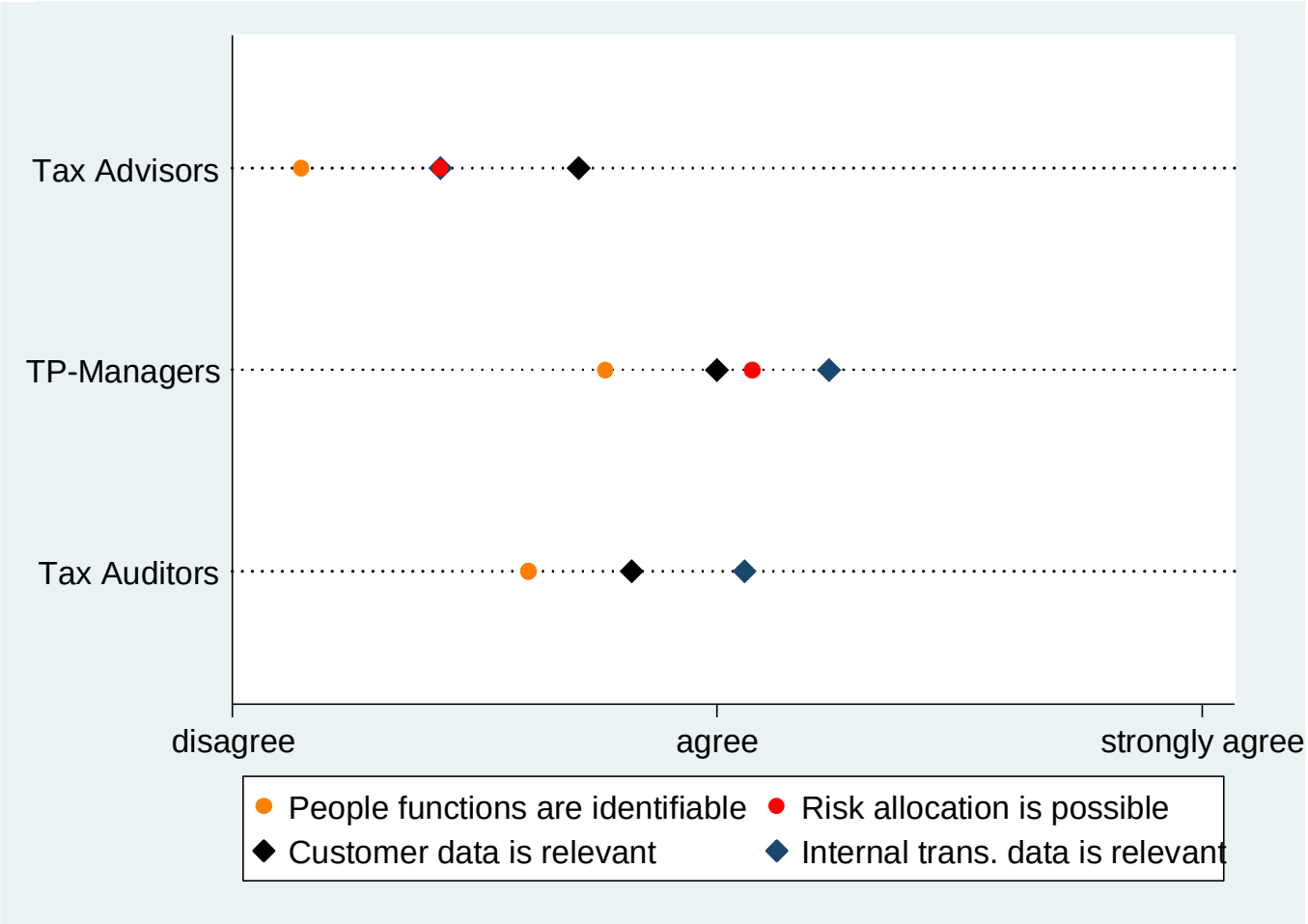
     → Arm’s length price within data mining value chain
   - Rest of value creation → profit split?

4. Survey Evidence on Transfer Pricing Challenges

- Joint project with Dr. Stefan Greil (German Ministry of Finance)
- Survey methodology
  - Survey April 2017-May 2018, direct e-mailing
  - Detailed questionnaire on
    - Views on current TP regime
    - Relevance of digital transactions, TP methods in use for digital transactions
    - Current TP challenges
    - Views on need for reform
  - 50 Participants:
    1. TP managers
    2. Tax (TP) advisors
    3. Tax auditors (administration)

4. Survey Evidence on Transfer Pricing Challenges

- General AL-premise and relevance of data



4. Survey Evidence on Transfer Pricing Challenges

- TP methods and conflicts for data businesses

Method	Cloud-computing Freq.	Cloud-computing Percent	Platforms Freq.	Platforms Percent	Internet of Things Freq.	Internet of Things Percent
CUP	3	9%	4	11%	2	6%
Resale	0	0%	3	8%	2	6%
Cost-plus	20	61%	17	45%	10	32%
TNMM	2	6%	1	3%	3	10%
Profit Split	2	6%	4	11%	5	16%
Others	6	18%	9	24%	9	29%
Total	33	100%	38	100%	31	100%

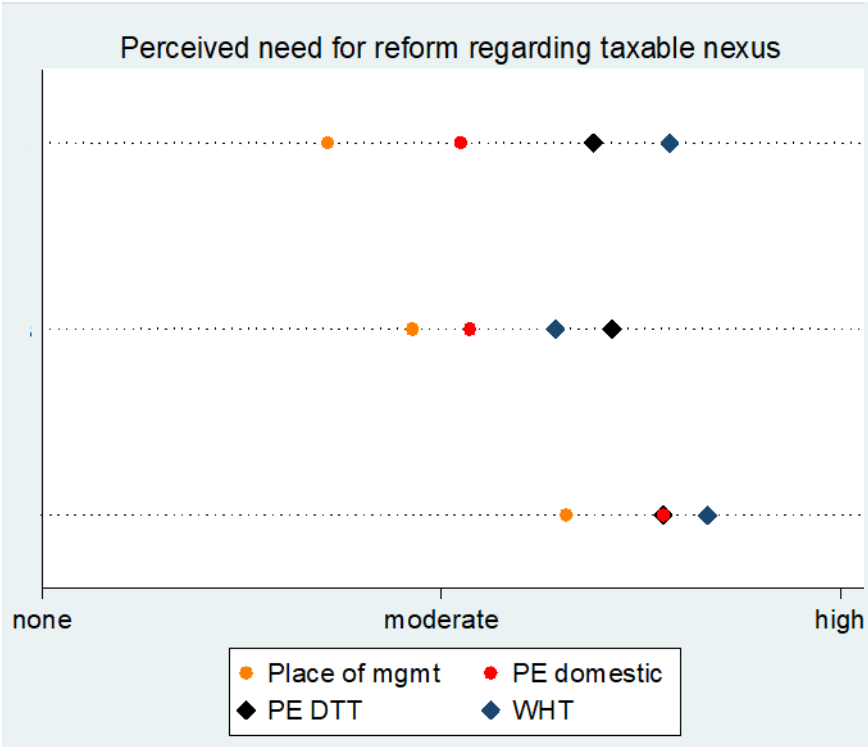
- Conflicts with German and foreign tax authorities (in tax audits) are still relatively rare

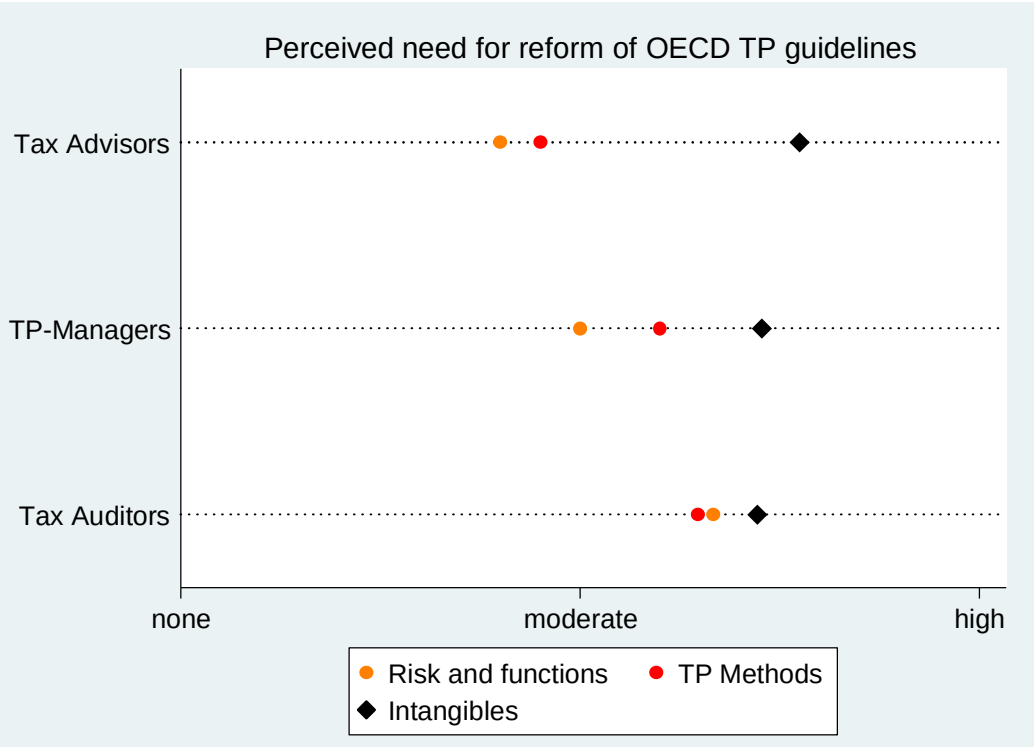
→ Digital transactions will be an issue in future tax audits

→ Time to develop guidelines NOW

4. Survey Evidence on Transfer Pricing Challenges

- Perceived need for reform: nexus and OECD TPG chapters I, II, VI





5. Discussion of Policy Presumptions

1. Corporate tax rules are outdated: **YES**
2. Digital businesses are undertaxed (ref. to Digital Tax Index 2017 (ZEW/PwC))

Wrong interpretation of Digital Tax Index, undertaxation if aggressive structures (but not exclusive in digital economy), no evidence, value creation for tax purposes to be defined

3. Significant digital presence if X revenue, # of users, # of contracts

Easier said than done

→ different business models, different structure of revenues, users and contracts
Key issue will be profit allocation, in many cases digital firms HAVE a nexus (even subsidiaries)

4. DST where largest gap between value creation and ability to tax

What is this gap? Why does it only exist for online ad firms and multi-sided interface firms?

What about Youtube, Netflix etc.?

→ They do use user data to develop their product portfolio (value creation)

5. It is possible to distinguish between business models for which DST applies

NO, Youtube, Netflix, etc.? Transformation of traditional businesses?

6. „Necessary to find a targeted, interim solution at EU level“

Not if it is distortive and ring-fencing: Double taxation, uncertainty, high effective tax burden!

→ Focus on comprehensive solution instead (OECD)

6. Conclusions & Open (Research) Questions

Scientific Evidence on Tax Challenges in the Digital Economy

- Investments in digital assets face lower cost of capital / effective tax rates → due to immediate expensing and R&D/IP incentive regimes) (PwC/ZEW, Digital Tax Index 2017&2018)
- No evidence (apart from anectodal) for particularly aggressive tax planning/profit shifting
- VAT might be the bigger issue (Olbert/Werner, 2018)

Practitioner survey evidence

- Transfer pricing for digital transactions is an upcoming issue
- Current TP framework is already problematic for traditional transactions
- Cost-based transfer pricing is predominant
- Greatest need for reform: Definition of PE, WHT for royalties, definition/pricing of intangibles

6. Conclusions & Open (Research) Questions

- Data mining in digital businesses is not similar to the use of classical raw material (e.g. oil)
- Taxation at source (data collection) can be distortive and does not fit into the current framework (value creation)

- **Arms-length prices might be available if abundant data is used (see business model analysis)**

- Investment in digital technologies is value a driver for society (e.g. E-Health, digital education) → policy should be thoughtful of investment effects

Thank you very much

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Research at University of Mannheim / ZEW

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