Artificial intelligence platforms: A new research agenda for digital platform economy

Tomasz Mucha

Timo Seppälä

Aalto University
School of Science

ETLA

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Tomasz Mucha

Department of Industrial Engineering and Management, Aalto University

Timo Seppälä

Department of Industrial Engineering and Management, Aalto University

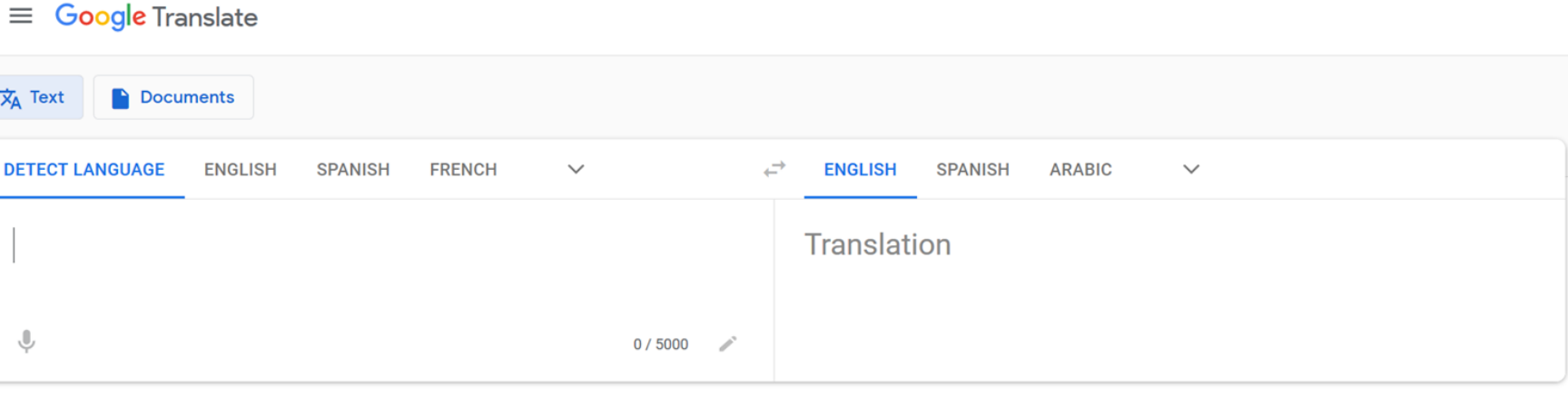
Research Institute of the Finnish Economy, ETLA

Defining AI

"Artificial Intelligence . . . is intended to make computers do things, that when done by people, are described as having indicated intelligence"

Brooks, R. A. (1991). ***Intelligence without reason*****.**

AI everywhere?


Google Translate
Text
Documents
DETECT LANGUAGE
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SPANISH
FRENCH
ENGLISH
SPANISH
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Translation

Customers Who Bought This Item Also Bought

Galaxy S6 Case, Spigen [METALLIZED BUTTONS] Neo Hybrid Series Case for Samsung Galaxy S6

★★★★½ 553

$18.99 Prime

Spigen Galaxy S6 Case, Spigen [AIR CUSHION] Slim Armor Case [KICK-STAND] for Samsung

★★★★½ 206

$16.77 Prime

Samsung Wireless Charging Pad w/ 2A Wall Charger - Retail Packaging - Black Sapphire, Part #

★★★★☆ 569

$29.45 Prime

Galaxy S6 Case, MoKo [Heavy Duty] Full Body Rugged Holster Cover Case with Swivel Belt Clip -

★★★★★ 87

$6.99 Prime

OtterBox DEFENDER SERIES for Samsung Galaxy S6 - Frustration-Free Packaging - Black

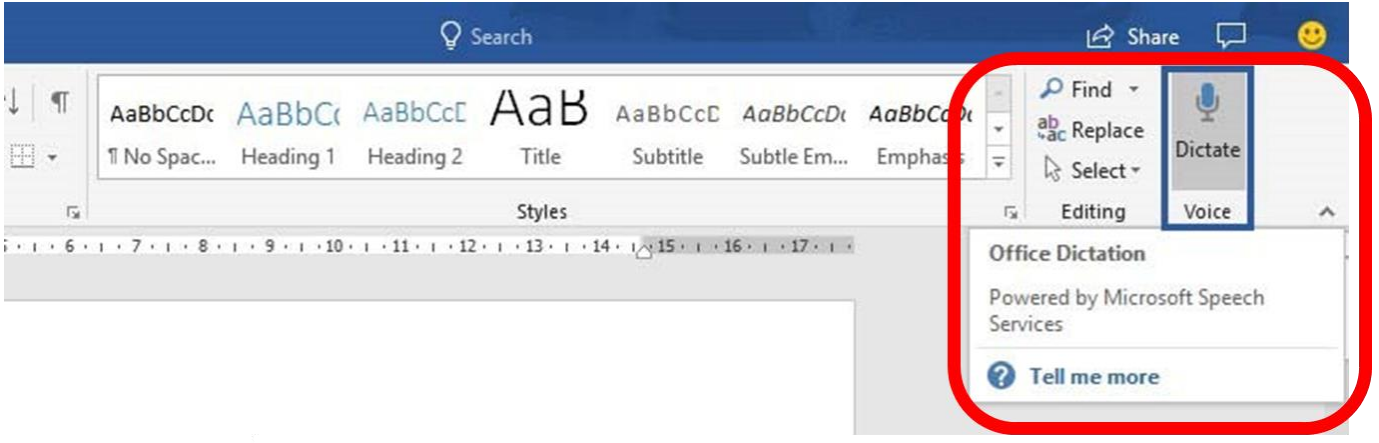
★★★★½ 358

$49.95 Prime

OtterBox COMMUTER SERIES for Samsung Galaxy S6 - Retail Packaging - Black

★★★★½ 271

$25.33 Prime


Search
Share
AaBbCcDc
¶ No Spac...
AaBbC(
Heading 1
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Heading 2
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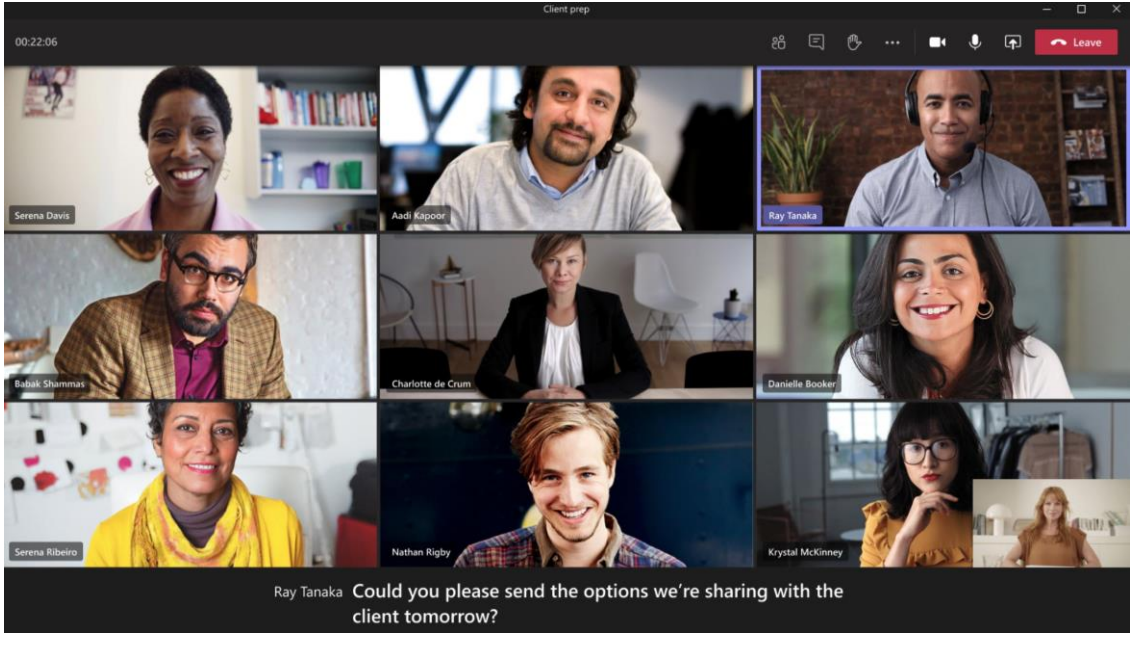
Tell me more


Client prep
00:22:06
Leave
Serena Davis
Aadi Kapoor
Ray Tanaka
Babak Shammas
Charlotte de Crum
Danielle Booker
Serena Ribeiro
Nathan Rigby
Krystal McKinney
Ray Tanaka Could you please send the options we're sharing with the client tomorrow?

What about others?

storaenso
TOP data science
A MORPHO COMPANY
107t

Fimlab
inscripta}

forenom

FOURKIND

Learn a new language

WordDive

I would like to learn

English Spanish French

Italian German Russian

Swedish Finnish Estonian

Award-winning method for language learning

goodbye

hola lo siento

adiós yo

Personally optimized learning - Start now!

Daily goal achieved!

5/5min

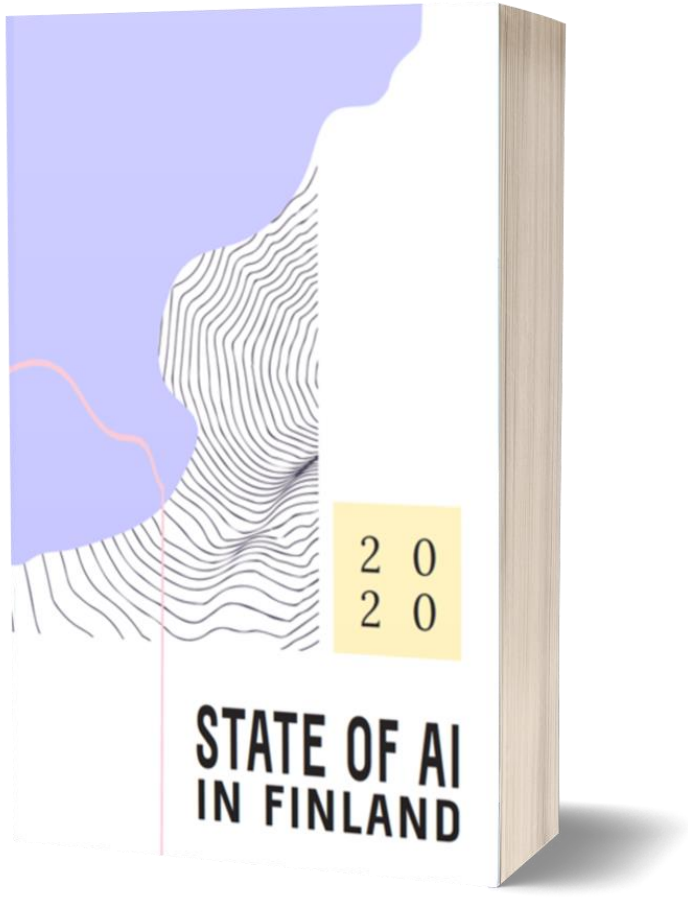
Mikko, you are on fire!

Continue

These were just some examples

More insights:

https://faia.fi/state-of-ai-in-finland/



What do executives say about AI use cases?

Image Source Credit: Orkla / image modified / CC BY 2.0

Background data

- **Qualitative analysis**
  - Inductive analysis of publicly available content
- **Data**
  - January 2004 – May 2019
  - Transcripts of S&P500 company investor presentations and earnings calls where “AI” or “machine learning” are mentioned

Total transcript count	**2 062**
Count per company	
Median	1
Mean	4
Min	0
Max	91
Count per sector	
Median	134
Mean	186
Min	15
Max	949

Two approaches

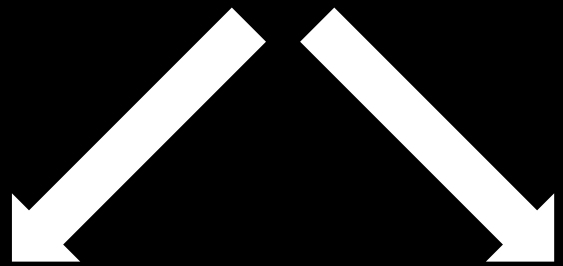
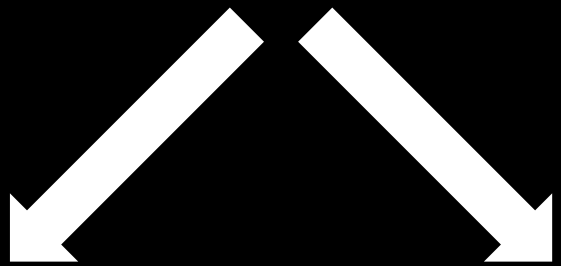


Image Source Credit: Sarin Images / GRANGER.

Two approaches



Gold miners

Shovel and jeans sellers

Shovel and jeans sellers

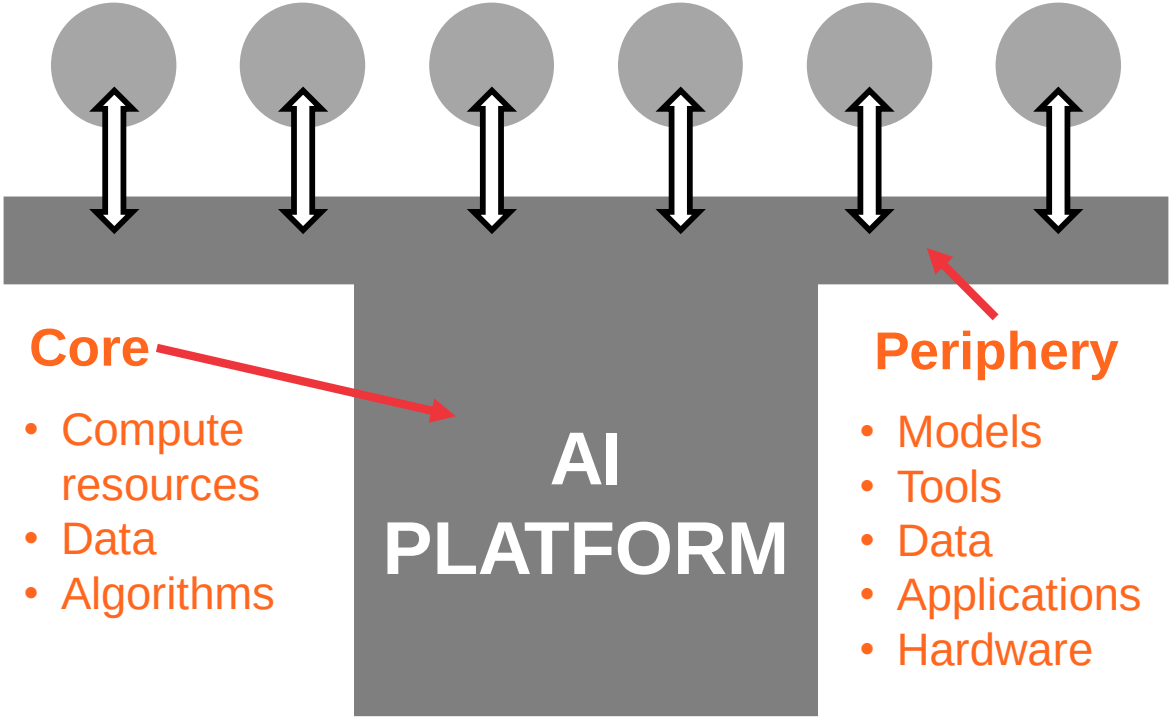
Who are they?

Shovel and jeans sellers

AI platform strategy

Shovel and jeans sellers

AI platform strategy



Google Microsoft amazon.com

Platform definition

“Evolving organizations or meta-organizations that:

1. **federate and coordinate constitutive agents who can innovate and compete;**
2. **create value by generating and harnessing economies of scope in supply or/and in demand; and**
3. **entail a technological architecture that is modular and composed of a core and a periphery.”**

Gawer, A. (2014). Bridging differing perspectives on technological platforms: Toward an integrative framework.

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PLATFORM OWNER

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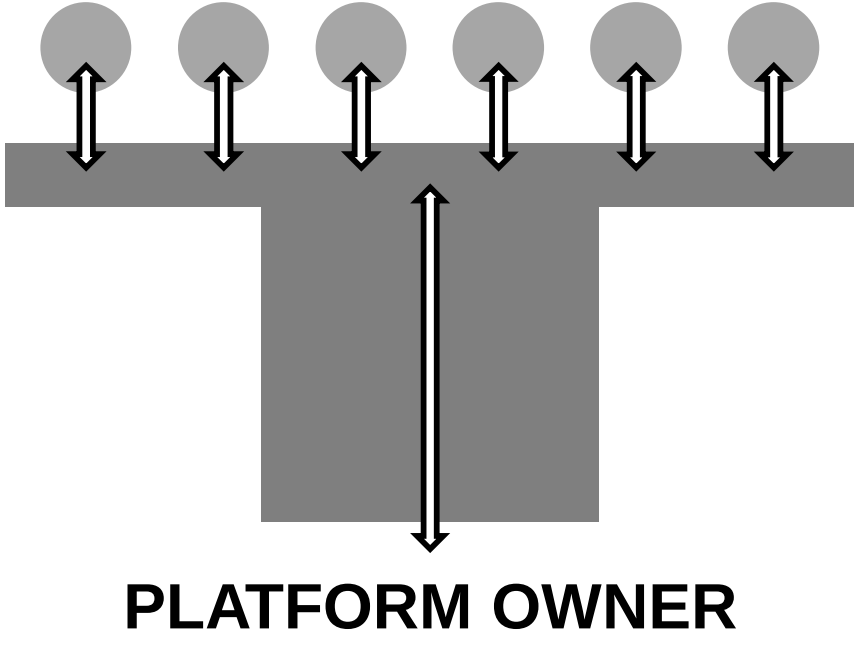

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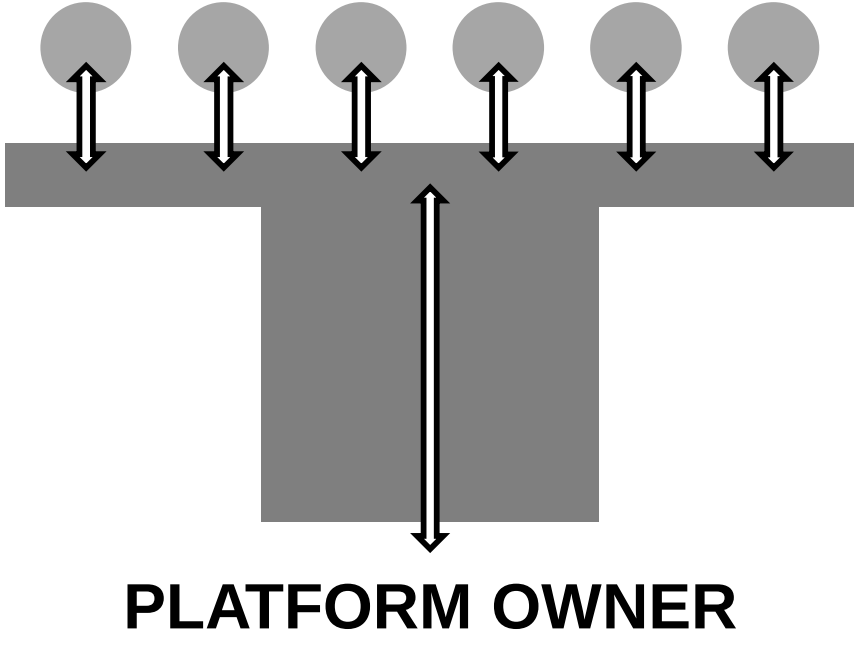
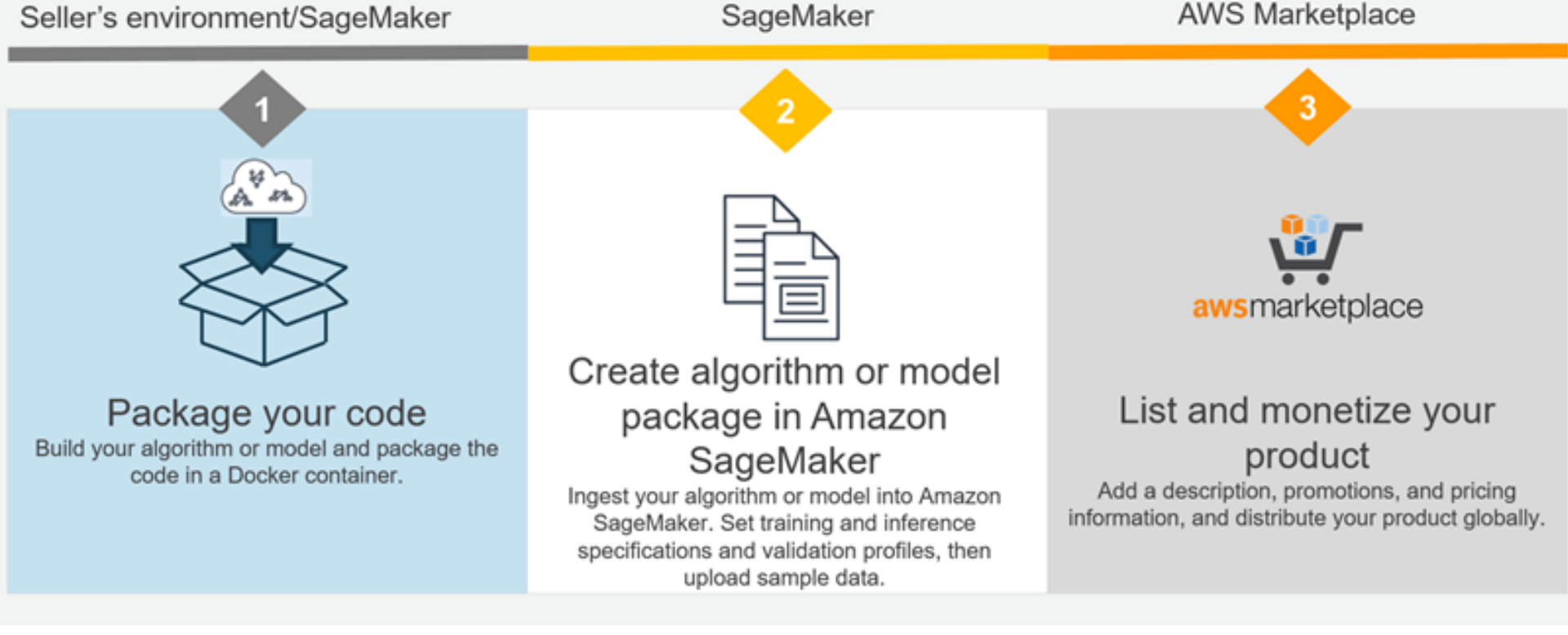


Amazon SageMaker algorithms and model packages monetization example



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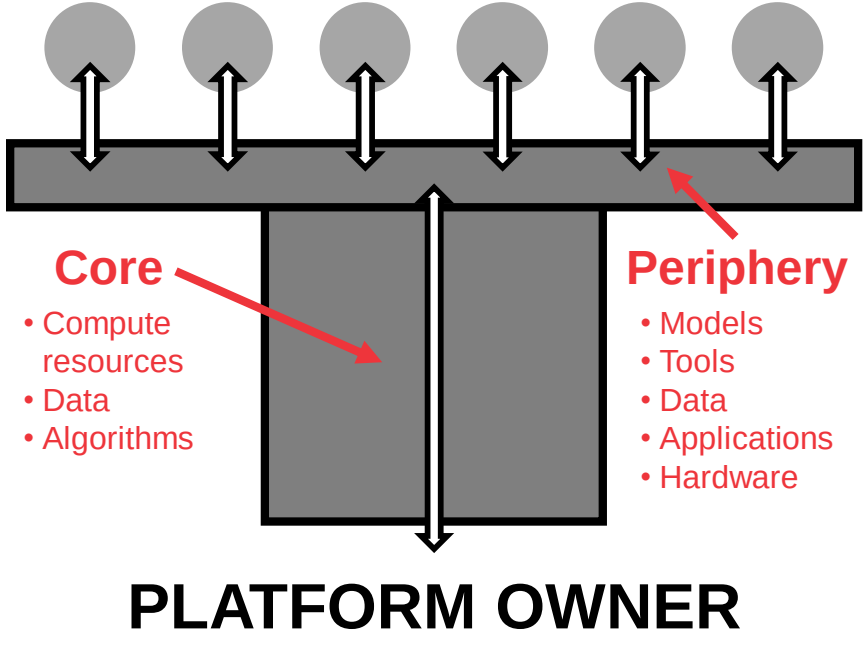
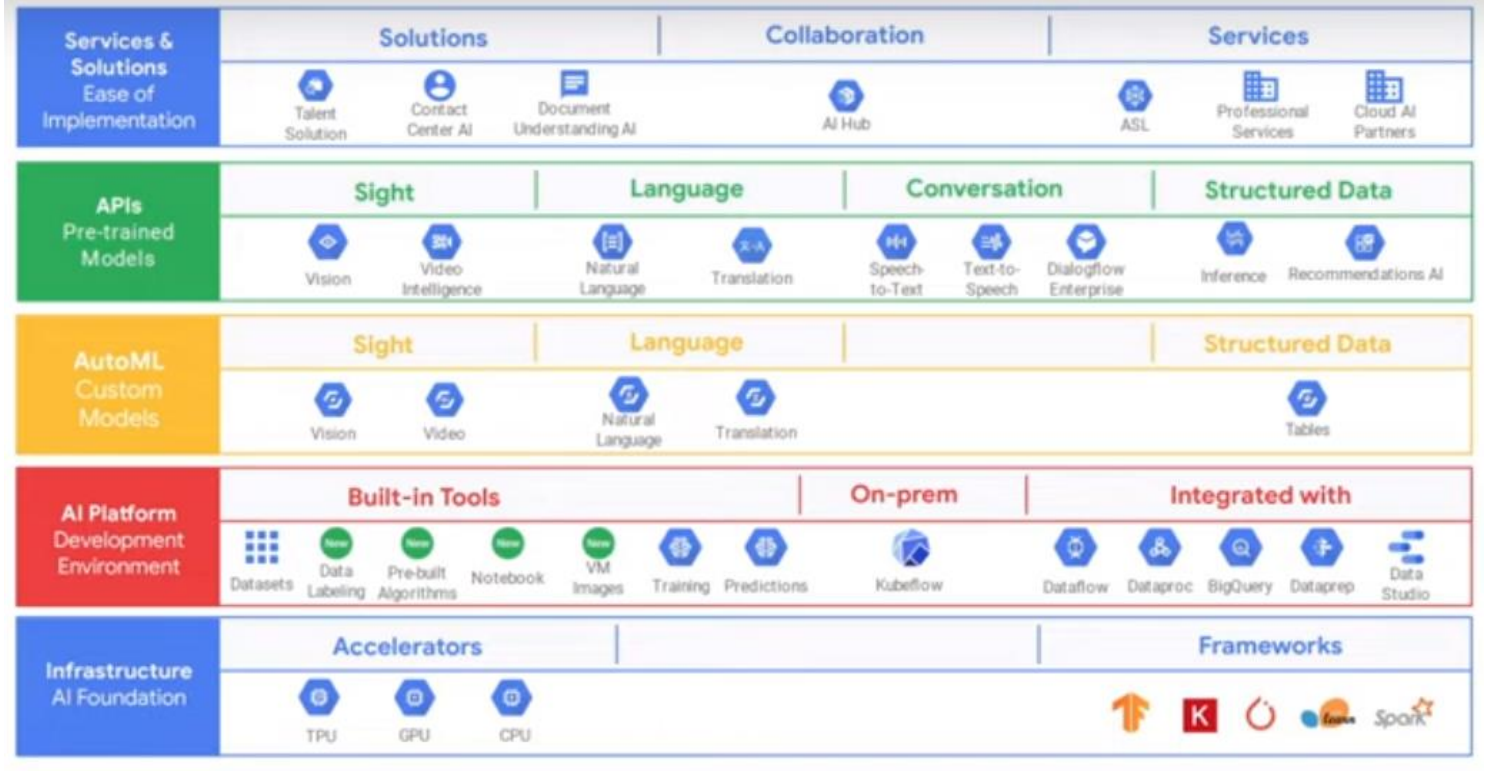


Google's AI cloud components as of 2019



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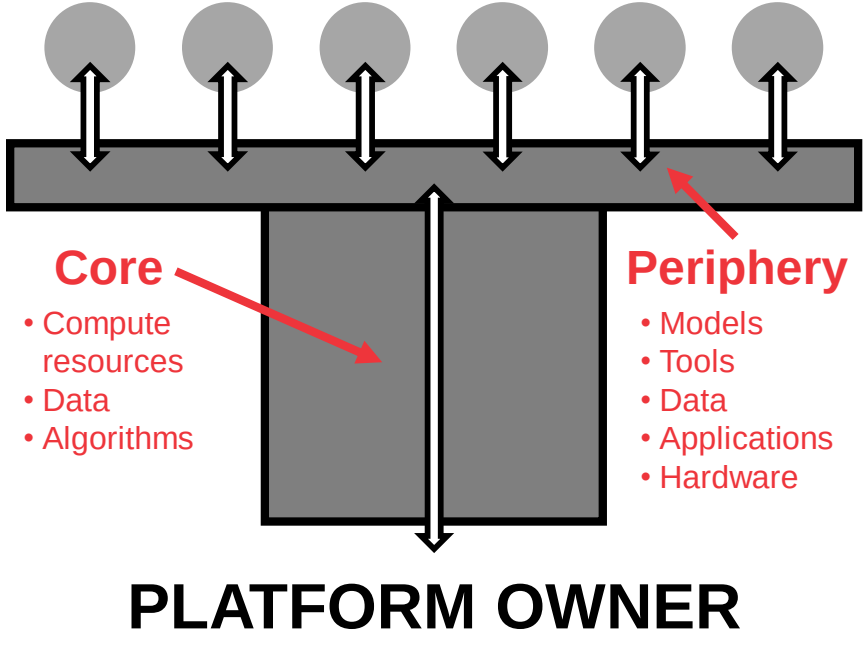

Who are AI platform scholars?

A new research agenda for digital platform economy

https://www.etla.fi/en/publications/artificial-intelligence-platforms-a-new-research-agenda-for-digital-platform-economy/

Aalto University
School of Science

ETLA Working Papers | 76 6.2.2020

Artificial Intelligence Platforms:

NEW RESEARCH AGENDA FOR DIGITAL PLATFORM ECONOMY

Tomasz Mucha
Aalto University, Finland
tomasz.mucha@aalto.fi

Timo Seppälä
The Research Institute of the Finnish Economy and Aalto University, Finland
timo.seppala@etla.fi

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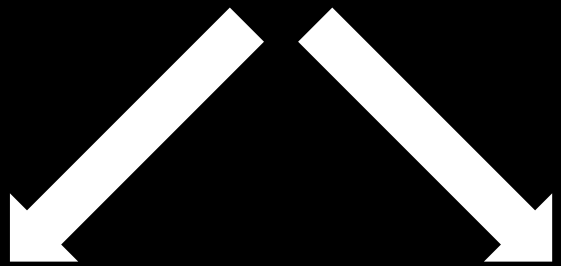
Abstract

Three out of nine of S&P500 digital platform companies stand out as building own artificial intelligence (AI) platforms. There is overwhelming empirical evidence of AI technologies are being central to running a digital platform business. However, the current research agenda is not directing researchers to study AI technologies in the context of digital platforms.

We have divided the proposed AI platforms research agenda as follows: The first set of questions we propose relates to an overall conceptualization of AI platforms. Thereafter, we recognize specific aspects of AI platforms, which need to be investigated in detail to gain understanding that is more complete. The second set of questions we propose relates to understanding the dynamics between AI platforms and the broader socio-economic context.

This topic might be particularly relevant to economies of countries without indigenous AI platforms. Our paper builds on the proposition that AI is a general-purpose technology, which by itself carries properties of a digital platform.

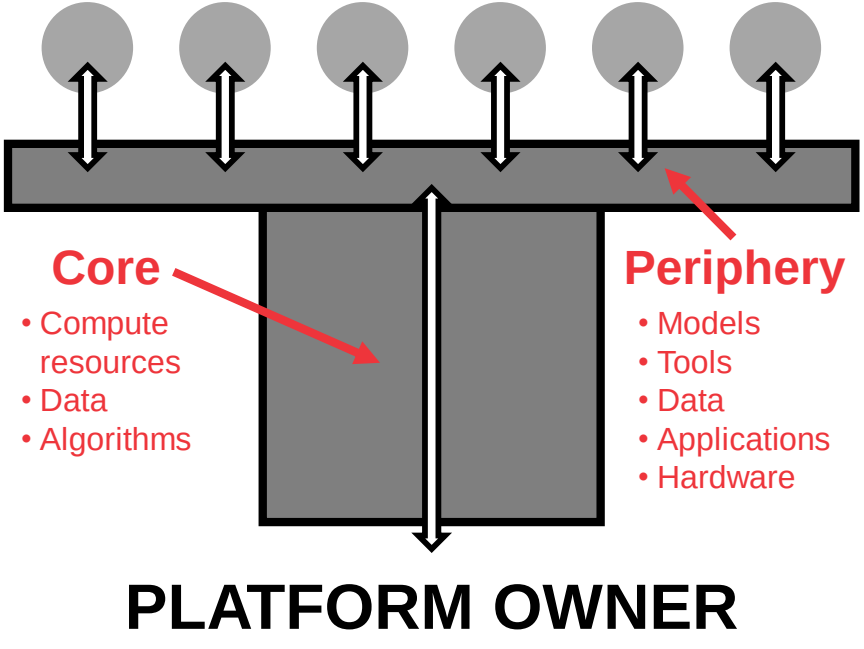
The research agenda



Micro level

Macro level

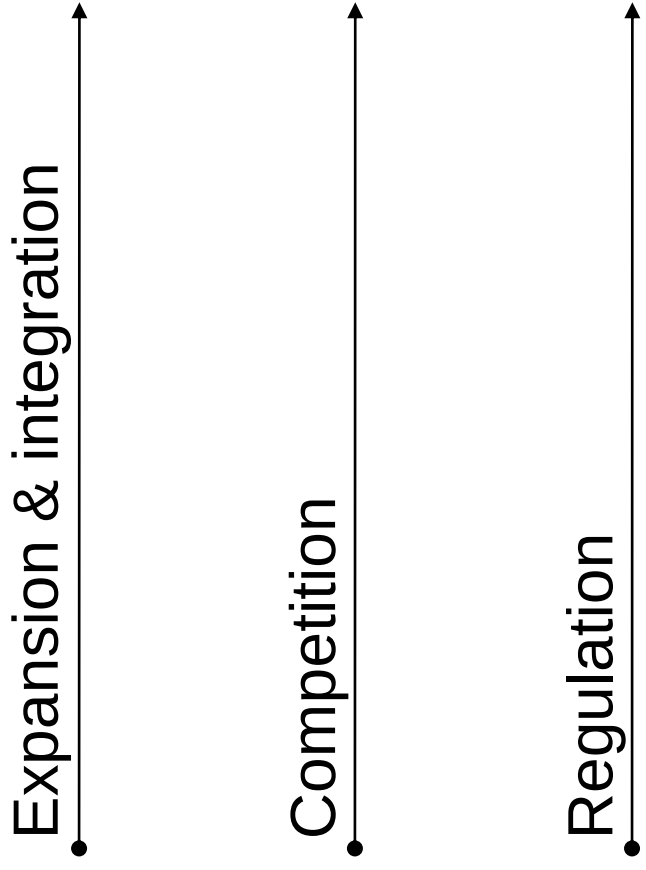
Micro perspective on AI platforms



Research agenda:
Micro perspective on AI platforms

Theme	Research questions
1. Conceptualization of AI platform	• Who are the agents participating in AI platform and its ecosystem? • What constitutes core and periphery of an AI platform? • What is the overall AI platform architecture?
2. AI platform openness and boundary resources	• How open are AI platforms? • What are the boundary resources used in controlling and facilitating AI platforms?
3. Value creation and capture in AI platforms	• How value is created and distributed within AI platforms? • What are the AI platform externalities?
4. AI platform strategy, ownership and control	• What are the building blocks of AI platform strategy? • What are the governance models of AI platforms?
5. Sustainability of AI platforms	• What are the operating costs / operating cost models of AI platforms? • Is the future of AI platforms sustainable?

Macro perspective on AI platforms



Geopolitical situation

⇕

National economies

⇕

Industries

⇕

AI platforms

Research agenda:
Macro perspective on AI platforms

Theme	Research questions
6. AI platforms as (quasi) utility companies	• Do AI platforms resemble utility companies? To what extent? • What level of AI platform concentration/ competition is optimal for the economy? • What role should regulation play in relation to AI platforms?
7. Expansion/integration of AI platforms with other digital platforms and industrial sectors	• What are the mechanisms and consequences of AI platform expansion/integration with other digital platforms? • What are the mechanisms and consequences of AI platform expansion/integration with different industrial sectors?
8. Impact of AI platforms on national economies and geopolitical relationships	• What are the AI platform related economic synergies and conflicts of interests between regions and nations? • What are the AI platform related economic implications for Europe, with no indigenous AI platform offering? • What are the AI platform related economic implications for the developing economies?

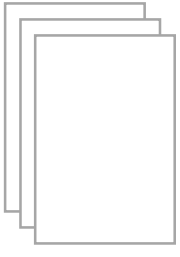
Next steps…

Micro level

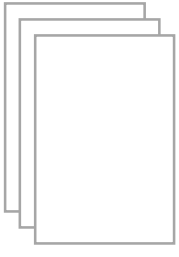
Macro level

Empirical paper

Research agenda



Contribution:
Explication of distinct roles played by AI in platforms



Contribution:
Recognition of important policy-motivated research questions