# Motohashi Lab   www.mo.t.u-tokyo.ac.jp

Prof. K. Motohashi

Empirical Research on Innovation Mgt. and Policy

- Economic Analysis of Science Innovation (Science Innovation Co-evolution)
- Digital Platform and Eco-system Strategy
- Innovation Globalization (multinational corporations) and Localization (entrepreneurship ecosystem, ex SV, Shenzhen)
- New indicator developments by ML/NLP, GIS techniques
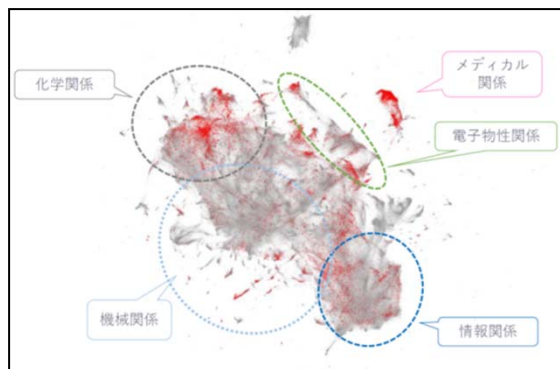
Technology mapping and academic patents
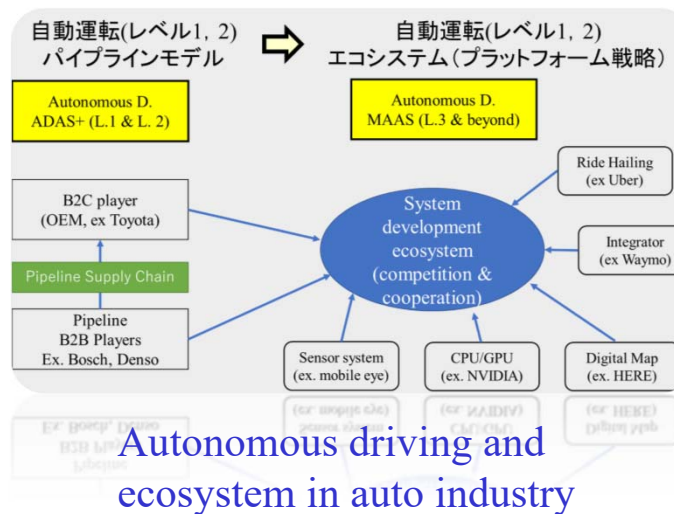
Autonomous driving and ecosystem in auto industry



Location of innovation (MNEs vs local firms)

Dept. of Technology Management for Innovation

Science of Innovation for Strategic Implications

Theory (Innov. Mechanism)

Incentive for open innov.

Innovation talents move

Platform and ecosystem

Innovation and Geography

New novelty indicator

Data and Analytics Tools

Patent/Paper info, firm data

Econometrics

Simulation Analysis

Machine learning, NLP

GIS, Regional Science Tools
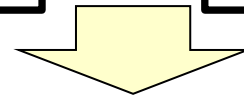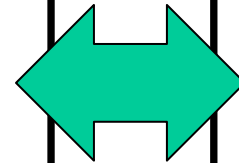
How to cope with emerging digital economy?

How to cope with changing global environments?

What is a good practice for S-I collaboration policy?

Policies for facilitate digital transformation of Japan?

Management and Policy Implications

TMI

Research Project (1)

- Science and Innovation Co-evolution
  - Integrated database development for science, technology and industry process and these interactions (international comparison with US and China)
  - National university reform in Japan (quality of research)
  - Impacts of university start-ups in local economy
  - Cross over talents of science and industry (ex. AI research)

- Digital Platform and Innovation Eco-system
  - Digital economy and manufacturing performance (Japan vs Germany)
  - Patent leveraged strategy (commons, tech standardization)
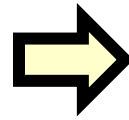 - Micro analysis of eco-system formation (ex. Autonomous driving field, NVIDIA case study)

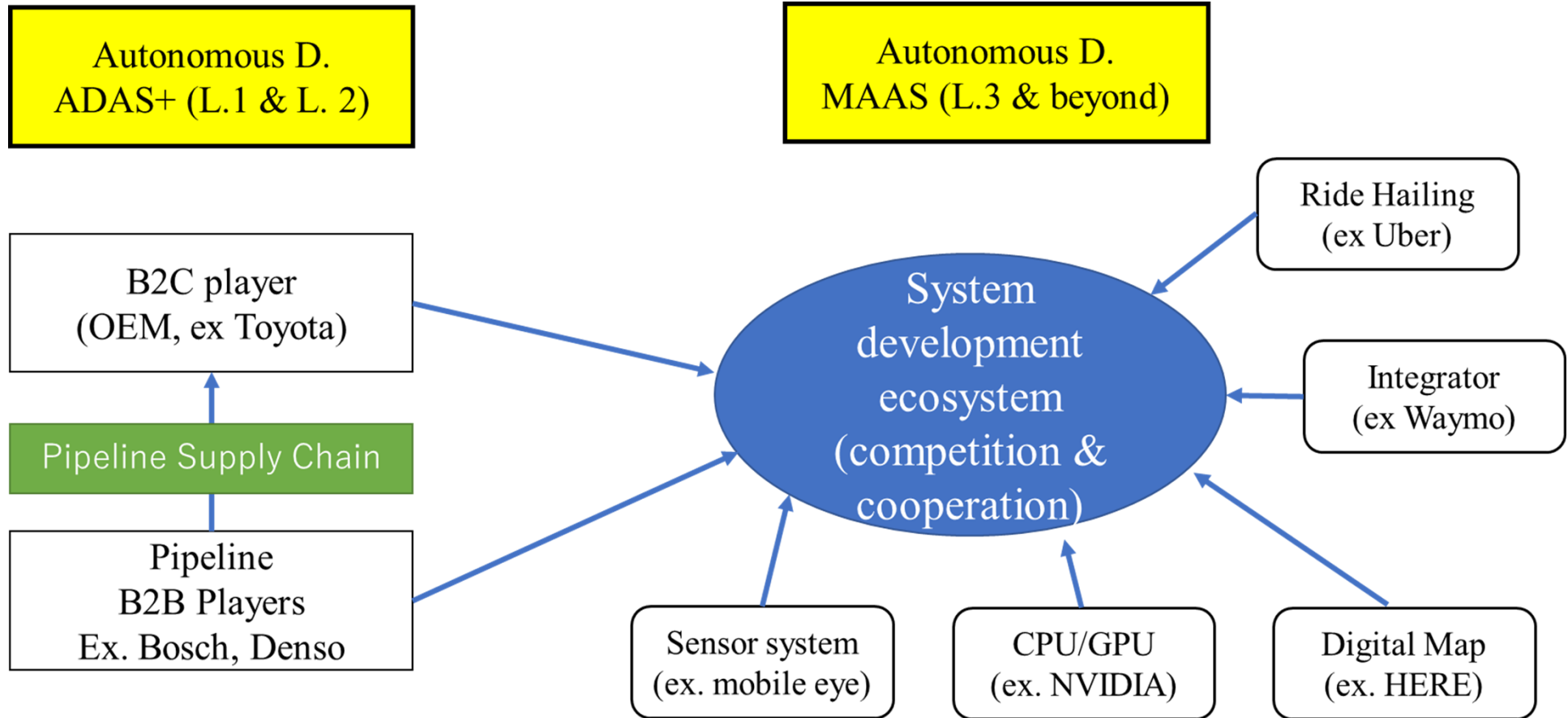# Technology mapping and academic patents

特許文書による技術マッピング（大学特許の特性：赤で表示）

化学関係

メディカル
関係

電子物性関係

機械関係

情報関係
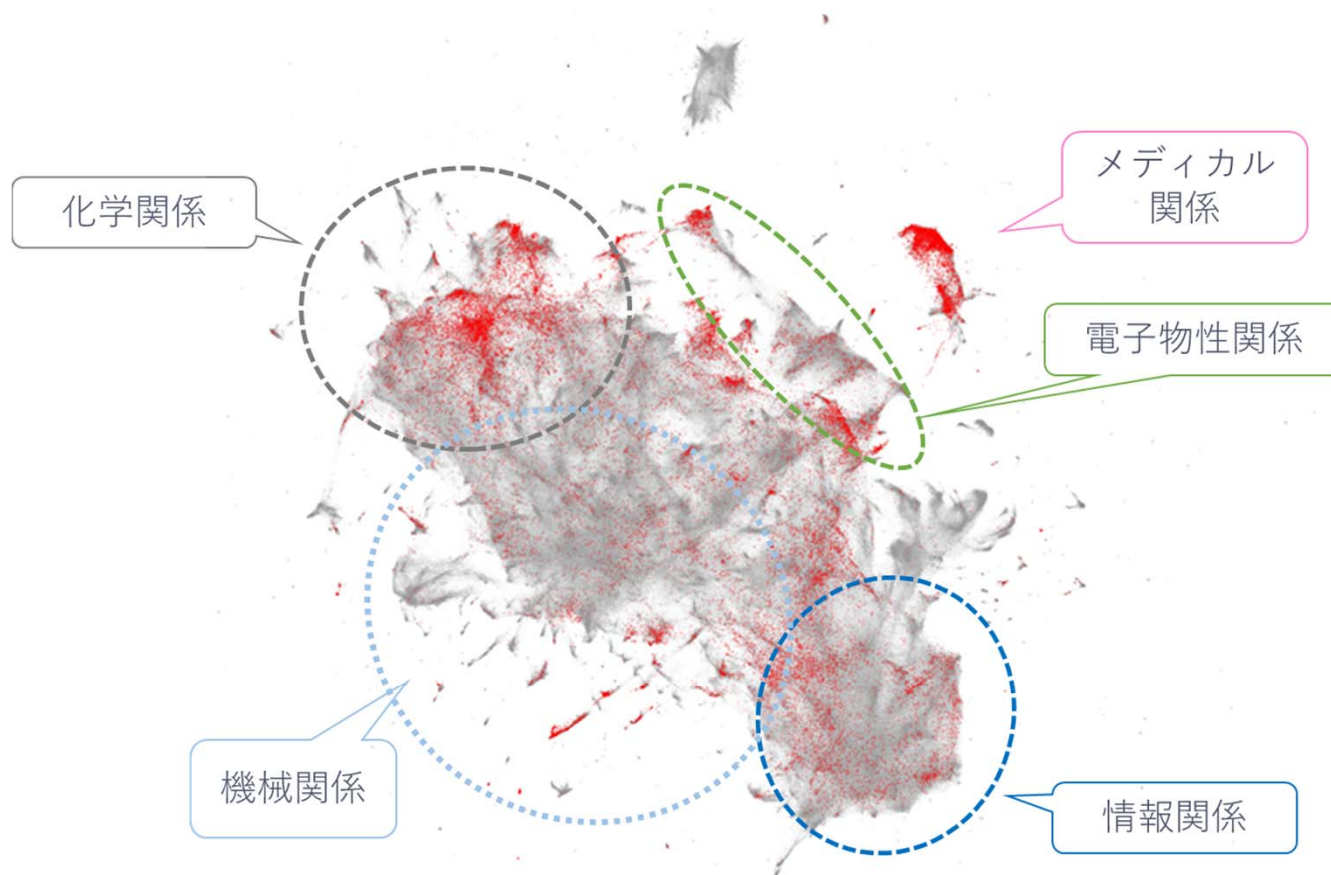
Autonomous Driving and Eco-system

AD: Level 1 and 2
Pipeline Model

➡

AD: Level 4 and 5
Ecosystem (Platform) Strategy

Autonomous D.
ADAS+ (L.1 & L. 2)

Autonomous D.
MAAS (L.3 & beyond)

B2C player
(OEM, ex Toyota)

Pipeline Supply Chain

Pipeline
B2B Players
Ex. Bosch, Denso

System development ecosystem (competition & cooperation)

Ride Hailing
(ex Uber)

Integrator
(ex Waymo)

Sensor system
(ex. mobile eye)

CPU/GPU
(ex. NVIDIA)

Digital Map
(ex. HERE)

Research Project (2)

- ## Geography of innovation (Global and Local)
  - ### China's high-tech industries and catching up
    - BAT (Baudu, Alibala, Tencent) and GAFA
    - US-China high-tech wars and its implications (ex. 5G and beyond)
  - ### Agglomeration of innovative activities
    - Development of entrepreneurship ecosystem (Shenzhen, Bangalore, the role of university startups)
  - ### IPR and innovation catching up
    - IPR reform (such as TRIPS compliance) and domestic firm innovation (China, Thailand and India)

- ## Database and analytics methodology
  - New indicators for novelty, tech evolution, convergence
  - Technology document semantic analysis (multi-lingual NLP)
  - Machine learning for inventor disambiguation, data linkage

Innovation Location in SE Asia
(MNEs vs Local Firms)

Based on Geocoded Patent Applicant Location

Technology Convergence of AI and Blockchain
CGN（Convolutional Neural Network) approach
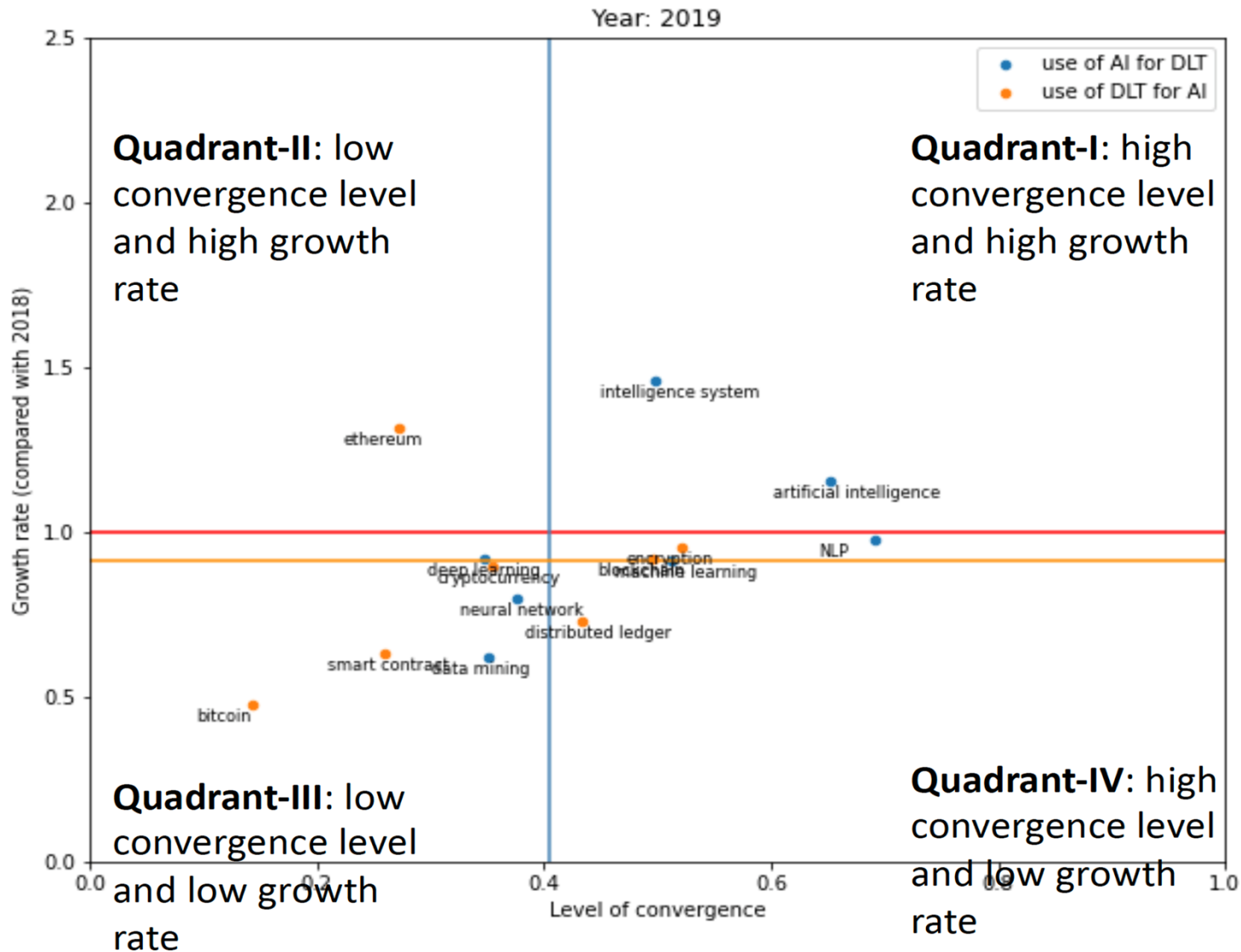
Zhu and Motohashi (2021)

Please visit the following website in detail as follows,

http://www.mo.t.u-tokyo.ac.jp/

For further information, ex. papers, book

Or send me an email to

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Thank you for your listening !