# COMPARATIVE STUDY OF AI STARTUP ECOSYSTEMS IN JAPAN AND THE UK

YIRUI JIANG, CRANFIELD UNIVERSITY, UNIVERSITY OF OXFORD

SATOSHI TOMITA, MUSASHINO UNIVERSITY

AARON TOKUNAGA, AARON IN JAPAN LLC

YIRUI.JIANG@CRANFIELD.AC.UK; TOMITA@TCCONSULTING.CO.JP; AARON@AARONINJAPANLLC.COM

EURAM – JUNE 23, 2025

# INTRODUCTION

- AI as a key indicator of national competitiveness
- Growing global investment in AI ecosystems
- Research motivation: Why compare Japan and UK AI ecosystems?
- Gap in literature: Focus on non-US tech powerhouses

**Keywords:**
AI innovation, AI ecosystem, business ecosystem, startup ecosystem, comparative analysis, Japan-UK comparison, interviews, coding analysis, thematic analysis.

# RESEARCH GAP & PURPOSE

- Provides the first comprehensive comparative analysis of AI startup ecosystems between Japan and the UK, offering insights into how different cultural, institutional, and market contexts shape AI innovation;
- Develops a novel analytical framework for evaluating AI startup ecosystems across six dimensions, enabling systematic cross-national comparison;
- Identifies specific barriers and enablers in both ecosystems through primary interview data with AI startup founders and executives;
- Offers evidence-based recommendations for policymakers and practitioners to enhance AI startup ecosystem development in both countries;
- Challenges the "Silicon Valley-centered" view of AI innovation by demonstrating how countries can develop successful AI ecosystems aligned with their unique strengths.

# LITERATURE REVIEW - EVOLUTION OF ECOSYSTEM THEORIES

- From Moore's (1993) business ecosystem concept to modern frameworks
- Iansiti & Levien's (2004) ecosystem health metrics: productivity, robustness, niche creation
- Isenberg's (2011) six-domain entrepreneurial ecosystem framework
- Spigel's (2017) integration of cultural, social, and material attributes

- Limitations in traditional theories when applied to AI domains:
- Underestimation of dynamic, non-linear relationships (Roundy & Bayer, 2019)
- Geographic constraint assumptions challenged by digital networks (Acs et al., 2017).

# LITERATURE REVIEW - UNIQUE CHARACTERISTICS OF AI STARTUP ECOSYSTEMS

- Heightened platform dependency and data-centric nature (Iansiti & Lakhani, 2020)
- Distinctive innovation patterns: disruptive vs. incremental improvement
- Technology-intensive rather than capital-intensive resource requirements
- Novel ethical considerations and regulatory challenges (Cusumano et al., 2021)
- Accelerated development cycles not captured by traditional ecosystem models
- Data network effects, algorithmic governance, and platform-based value creation

# LITERATURE REVIEW - CURRENT UNDERSTANDING OF JAPAN AND UK AI LANDSCAPES

**Japan: Strong corporate partnerships and practical implementation focus**

- Paradox of conservative investment practices with accessible AI funding (Ryan, 2024)
- Evolving governance through strategic initiatives and cross-ministerial collaboration
- Limited empirical research on AI-specific startup dynamics

**UK: Research-oriented, internationally focused ecosystem**

- World-class universities and strong government support (Westgarth et al., 2022)
- National AI Strategy promoting ethical development
- Diverse sectors: healthcare, finance, manufacturing
- Concentration in innovation hubs: London, Cambridge

# METHODOLOGY

**Mixed-methods approach combining:**

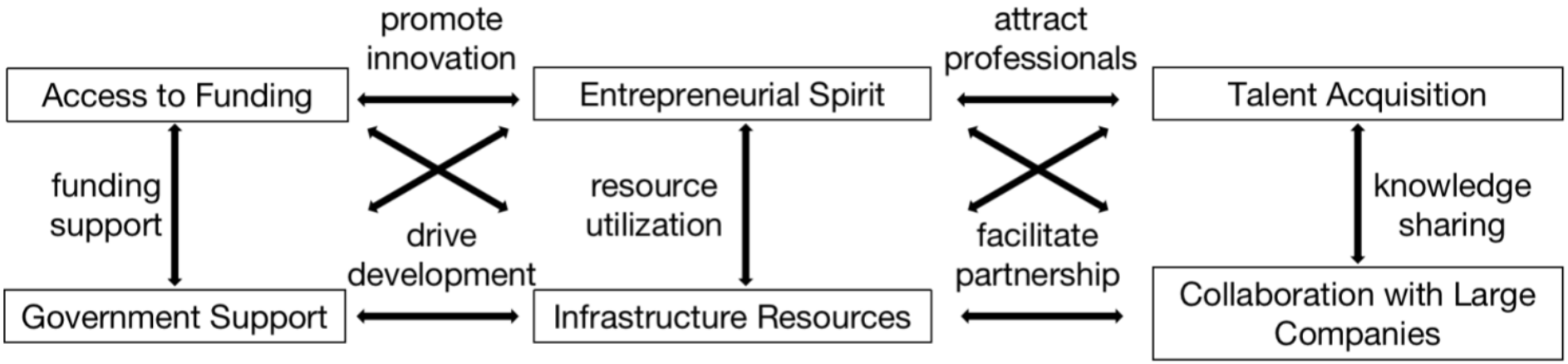
- Secondary research analysis
- Primary data from 10 AI startups (5 from each country)
- Semi-structured interviews with founders/executives
- Systematic coding and thematic analysis to identify patterns

# SIX-DIMENSIONAL AI ECOSYSTEM ANALYTICAL FRAMEWORK

Six dimensional analysis of AI startups:

- 1. Access to Funding
- 2. Entrepreneurial Spirit
- 3. Talent Acquisition
- 4. Government Support
- 5. Infrastructure Resources
- 6. Collaboration with Large Companies

# SIX- DIMENSIONAL AI ECOSYSTEM ANALYTICAL FRAMEWORK



# CASE STUDY SELECTION

**TABLE 1 ***
**Overview of 5 Selected Japanese AI Startup Companies**

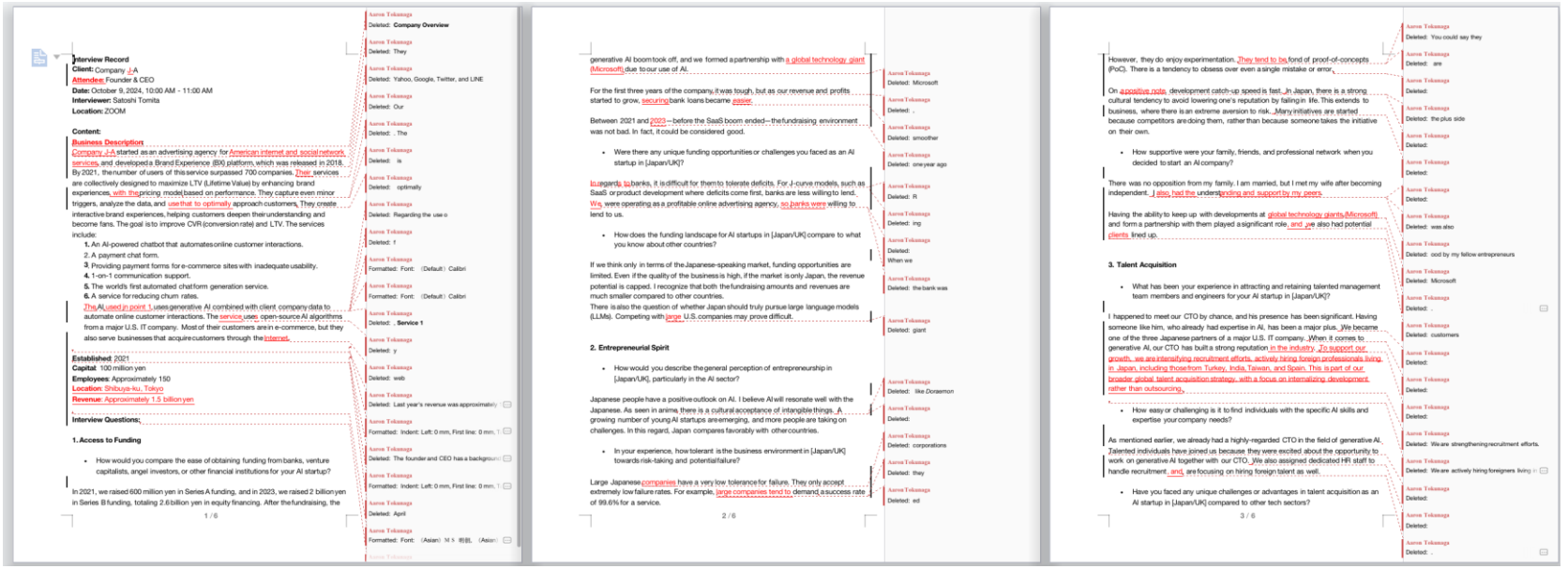
| Company | Establishment | Capital | Employees | Revenue | Business Focus |
|---|---|---|---|---|---|
| J-A | 2021 | ¥100M | ~150 | ¥1.5B | AI-powered BX platform, chatbots, e-commerce solutions |
| J-B | 2012 | ¥100M | 9 (+11 contractors) | ¥200M | Baby tech, AI cry analysis, parenting apps |
| J-C | 2017 | ¥17.85B (Funding Amount) | 650 | N/A | Legal tech, AI contract review, legal process automation |
| J-D | 2020 | ¥182M | ~60 | N/A | Sustainability solutions with AI, consulting |
| J-E | 2005 | ¥378M | 200 | ¥2.3B | AI/DX solutions, TSE listed, enterprise services |

**TABLE 2 ***
**Overview of 5 Selected UK AI Startup Companies**

| Company | Establishment | Capital | Employees | Revenue | Business Focus |
|---|---|---|---|---|---|
| UK-A | 2023 | £50K | 5 | £30K | AI education, course development |
| UK-B | 2021 | £750K | 10 | £200K | AI for carbon emission tracking in construction |
| UK-C | 2004 | £20M | 400 | £80M | AI-driven network automation |
| UK-D | 2013 | £600K | 10 | £1.5M | AI software testing platforms |
| UK-E | 2005 | £15M | 100 | £10M | AI IT infrastructure monitoring |

# DATA COLLECTION

## Interview Records for Each Company





Aaron_20241029_Memo(...A).docx


Aaron_20241029_Memo(...B).docx


Aaron_20241029_Memo(...C).docx


Aaron_20241029_Memo(...D).docx


Aaron_20241102_Memo(...JE).docx


UK_A_Interview.docx


UK_B_Interview.docx


UK_C_Interview.docx


UK_D_Interview.docx

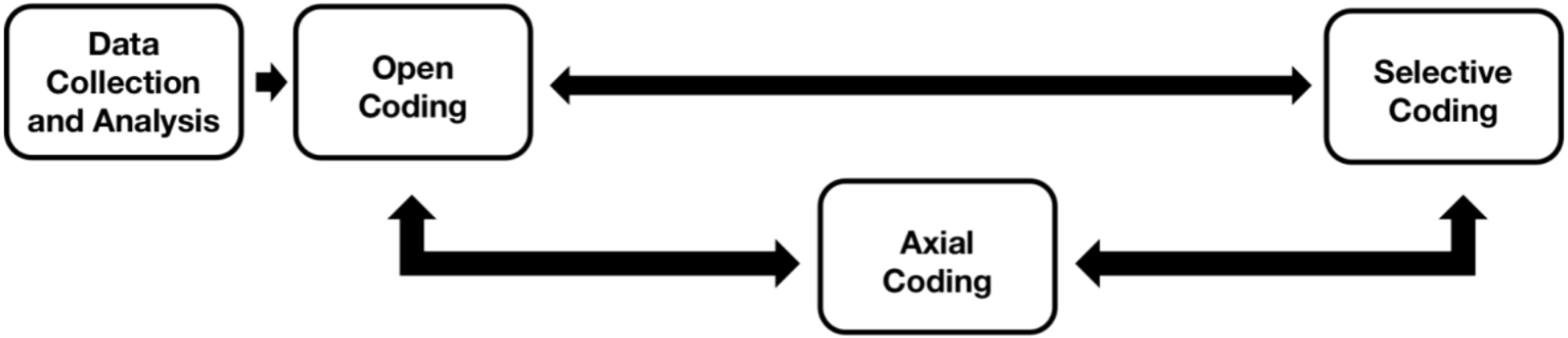

UK_E_Interview.docx

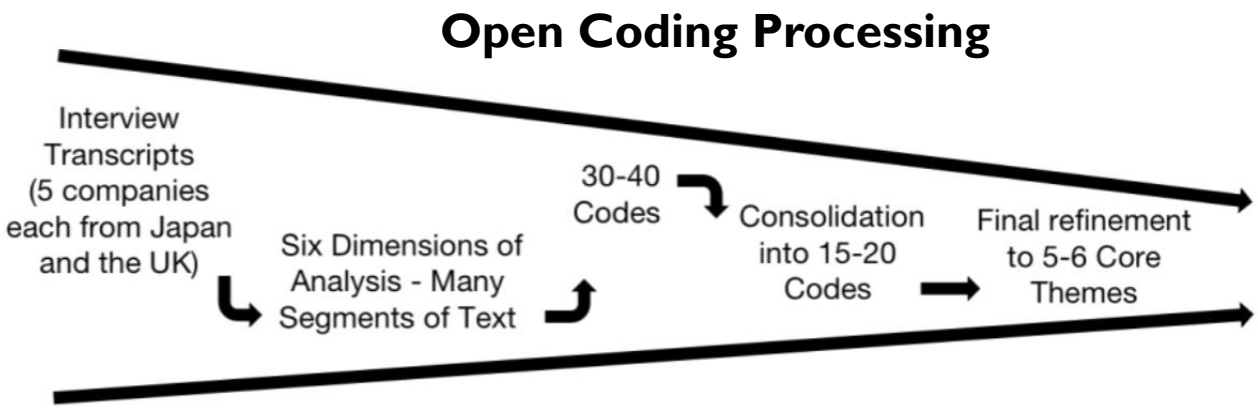
# INTERVIEW QUESTIONS

**TABLE 3 ***
**Interview Questions**

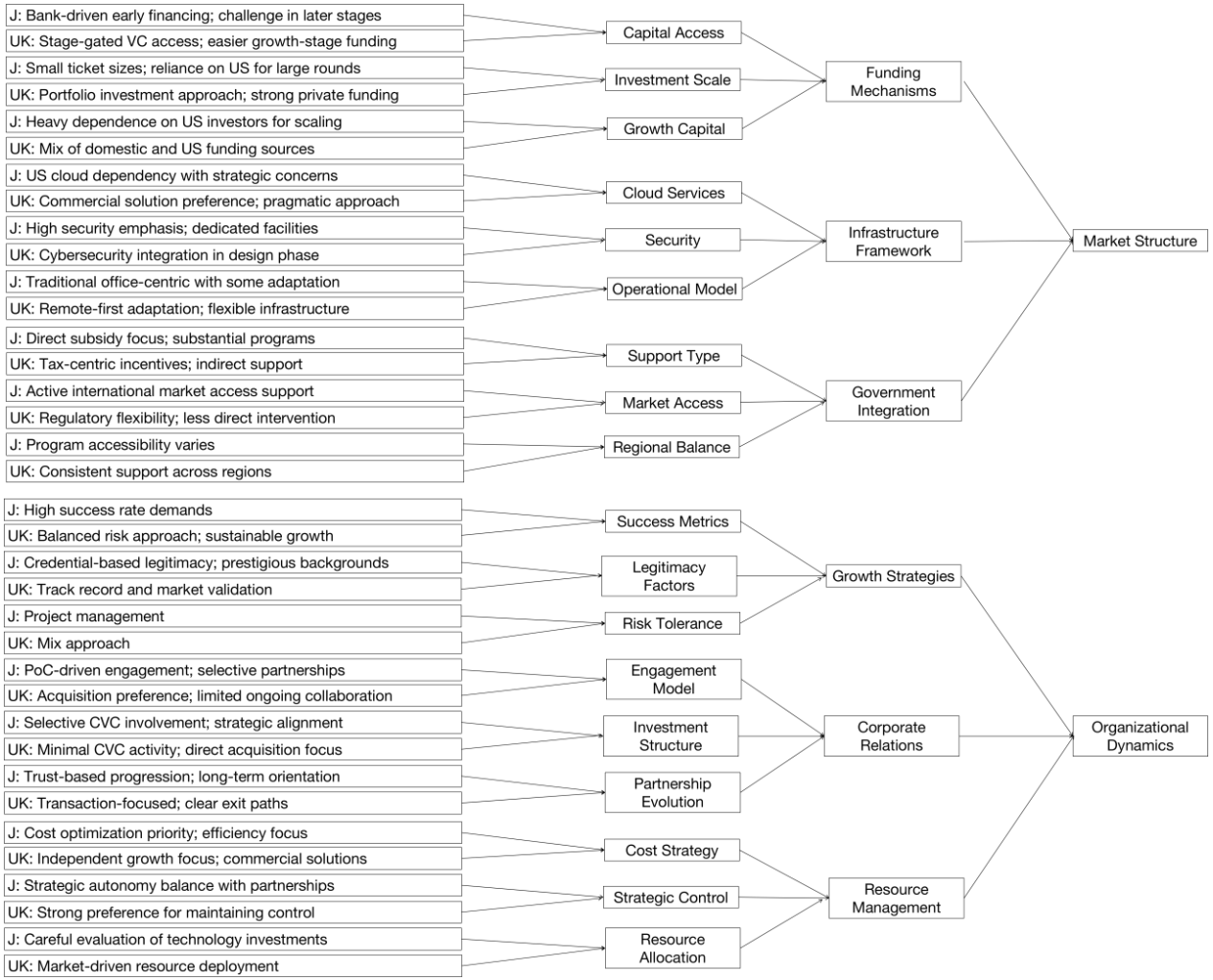
| Dimension | Interview Questions |
|---|---|
| 1. Access to Funding | - How would you compare the ease of obtaining funding from banks, venture capitalists, angel investors, or other financial institutions for your AI startup?<br>- Were there any unique funding opportunities or challenges you faced as an AI startup in [Japan/UK]?<br>- How does the funding landscape for AI startups in [Japan/UK] compared to what you know about other countries? |
| 2. Entrepreneurial Spirit | - How would you describe the general perception of entrepreneurship in [Japan/UK], particularly in the AI sector?<br>- How tolerant is the business environment in [Japan/UK] towards risk-taking and potential failure?<br>- How supportive were your family, friends, and professional network when you decided to start an AI company? |
| 3. Talent Acquisition | - What has been your experience in attracting and retaining talented management team members and engineers?<br>- How easy or challenging is it to find individuals with the specific AI skills and expertise your company needs?<br>- Have you faced any unique challenges or advantages in talent acquisition as an AI startup in [Japan/UK]? |
| 4. Government Support | - What types of government support, if any, have you received for your AI startup in [Japan/UK]?<br>- How would you evaluate the effectiveness and accessibility of government programs for supporting AI startups?<br>- Are there any specific regulations or policies in [Japan/UK] that have significantly impacted your AI startup, either positively or negatively? |
| 5. Infrastructure Resource | - How would you assess the availability and quality of necessary infrastructure resources (e.g., high-performance computing, data centers) for AI startups in [Japan/UK]?<br>- Have you utilized any AI-specific coworking spaces, incubators, or accelerators in [Japan/UK]? If so, how impactful were they?<br>- How has the digital infrastructure (e.g., 5G networks, cloud services) in [Japan/UK] supported or hindered your AI startup's development? |
| 6. Collaboration with Large Companies | - Were large companies likely to engage in transactions (purchasing) with startups?<br>- Were large companies likely to form alliances with startups?<br>- Did large companies invest in startups? (How much CVC investment was there?) |

# CODING CONCEPT

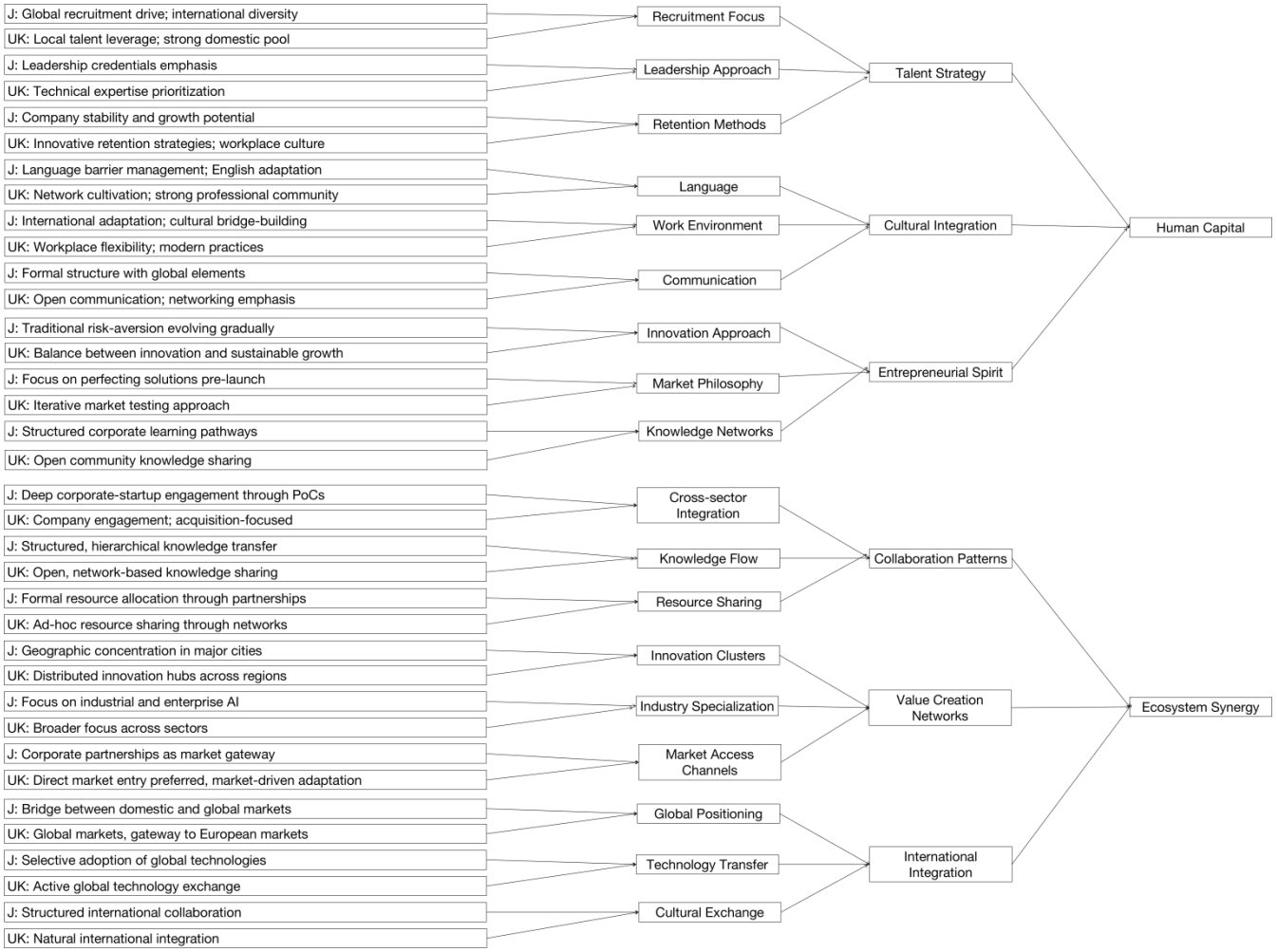


# INTERVIEW DATA ANALYSIS - JAPAN AND UK OVERVIEW



# INTERVIEW DATA ANALYSIS
# - JAPAN AND UK OVERVIEW CONTINUED



# INTERVIEW DATA ANALYSIS - UK DETAILS

- Funding patterns: Early-stage challenges, growth-stage opportunities
- Entrepreneurial character: Balance of innovation and sustainable growth
- Talent dynamics: Strong recruitment, retention challenges
- Government support: Tax policies, regulatory environment
- Infrastructure landscape: Commercial solutions dominance
- Corporate engagement: Limited large company interaction

# INTERVIEW DATA ANALYSIS
# JAPAN INTERVIEW DATA ANALYSIS AND RESULTS

## 1. Access to Funding

- Early-stage AI startups benefit from accessible bank loan from public-private programs.
- A well-established environment for equity financing
- VCs tend to require established services or products
- Japanese investors cannot meet the demand for large amounts, so later-stage AI startups must rely on U.S. investors.

# INTERVIEW DATA ANALYSIS
# JAPAN INTERVIEW DATA ANALYSIS AND RESULTS

2. Entrepreneurial Spirit

- Traditionally, Japanese society has a risk-averse and conservative social culture
- With low tolerance for failure
- However, this is gradually shifting with the younger generations, as top graduates and professionals establish more startups.

# INTERVIEW DATA ANALYSIS
# JAPAN INTERVIEW DATA ANALYSIS AND RESULTS

3. Talent Acquisition

- Difficulty in recruiting talent, particularly engineers
- If companies have a top talent , it tends to attract others
- Hiring foreign staff actively
- Nurturing AI engineers internally

# INTERVIEW DATA ANALYSIS
# JAPAN INTERVIEW DATA ANALYSIS AND RESULTS

4. Government Support

- Most successful startups grow independently without relying on government support and operate within market mechanisms
- International market access support through JETRO

# INTERVIEW DATA ANALYSIS
# JAPAN INTERVIEW DATA ANALYSIS AND RESULTS

5. Infrastructure Resources

- Heavy reliance on major U.S. IT companies
- The cloud services of U.S. IT companies are the global standard
- Japanese startups can't choose an alternative.
- This dependency risk is a fundamental dilemma.

# INTERVIEW DATA ANALYSIS
# JAPAN INTERVIEW DATA ANALYSIS AND RESULTS

## 6. Collaboration with Large Companies

- Japanese large companies want to make active relationships with startups.
- Transactions and corporate alliances between Japanese large companies and startups are becoming more common
- Investments from Japanese large companies namely CVC investment are also active.

# FINDINGS AND DISCUSSION

**Value Creation**

- **Japan:** Market-driven growth; strong commercialization and practical implementation.
- **UK:** Focus on fundamental research; strong university-industry knowledge transfer.

**Value Capture**

- **Japan:** Strong domestic market validation, efficient with smaller funding.
- **UK:** Longer development cycles, larger funding needs, international focus from the beginning.

# FINDINGS AND DISCUSSION

**Value Distribution**

- **Japan:** Centralized in Tokyo.; relies on human networks for talent acquisition
- **UK:** Broader geographical spread e.g. London, Cambridge; international talent, higher costs.

**Governance Structures**

- **Japan:** Market-driven approach, minimal government intervention, strong corporate engagement frameworks.
- **UK:** Structured government support approach, formal collaboration frameworks.

# FINDINGS AND DISCUSSION

**Governance Mechanisms**

- **Japan:** Informal, relationship-based transactions, smooth smaller-scale funding.
- **UK:** Formal, competitive funding processes; larger in size, but also stricter in requirements.

**Key Challenges & Recommendations**

- **Japan:** Small investment scale, slow decision-making, weak global reach
  → *Need: larger funding pools, faster decision-making, aggressive global expansion*
- **UK:** Talent retention, weak corporate engagement
  → *Need: stronger talent strategies and fostering stronger startup-corporate collaboration*

# CONCLUSION AND FUTURE WORK

**Overall Contribution**

- The first comprehensive comparison of Japanese and the UK AI startup ecosystems outside the US-China axis

**The Strategic Takeaway**

- Building competitive AI startup ecosystems isn't about copying Silicon Valley.
- Success lies in leveraging local strengths and ensuring global connectivity—in funding, talent, and knowledge.

# CONCLUSION AND FUTURE WORK

**Future Research Directions**

- Extend ecosystem theory to reflect AI-specific characteristics
- Explore AI's interaction with national innovation systems for new theoretical insights.
- Address current study limitations:
  - Expand sample sizes (≥20 startups per country).
  - Incorporate quantitative data and analysis.
  - Broaden the scope to include other emerging AI startup ecosystems.

# THANK YOU

Do you have any questions?

- Contact: yirui.jiang@cranfield.ac.uk
  tomita@tcconsulting.co.jp
  aaron@aaroninjapanllc.com