

# **THE PRINCIPLE OF RELATEDNESS**

**LOCAL & GLOBAL KNOWLEDGE SOURCING**

**Pierre-Alexandre Balland**

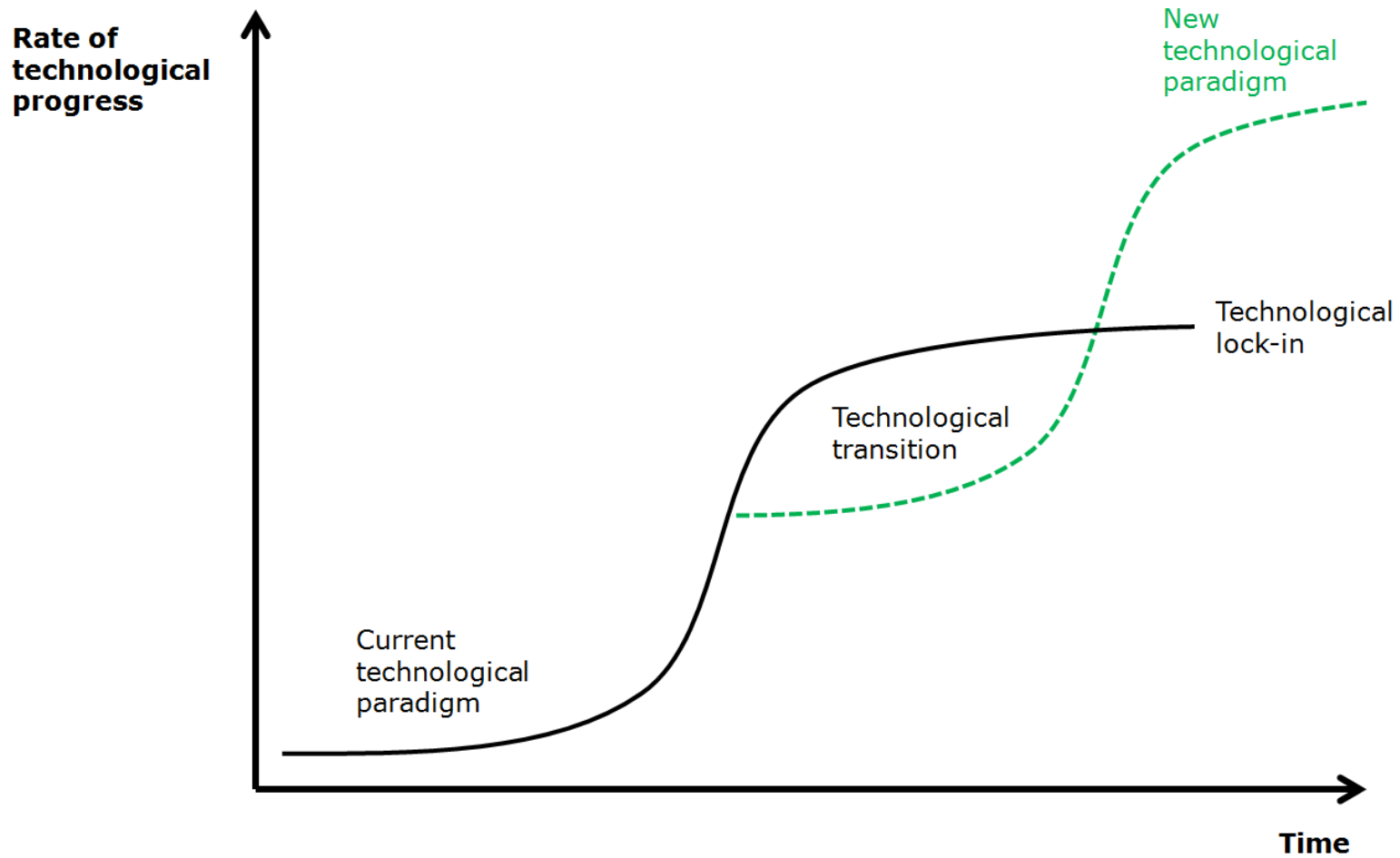
**Ron Boschma**











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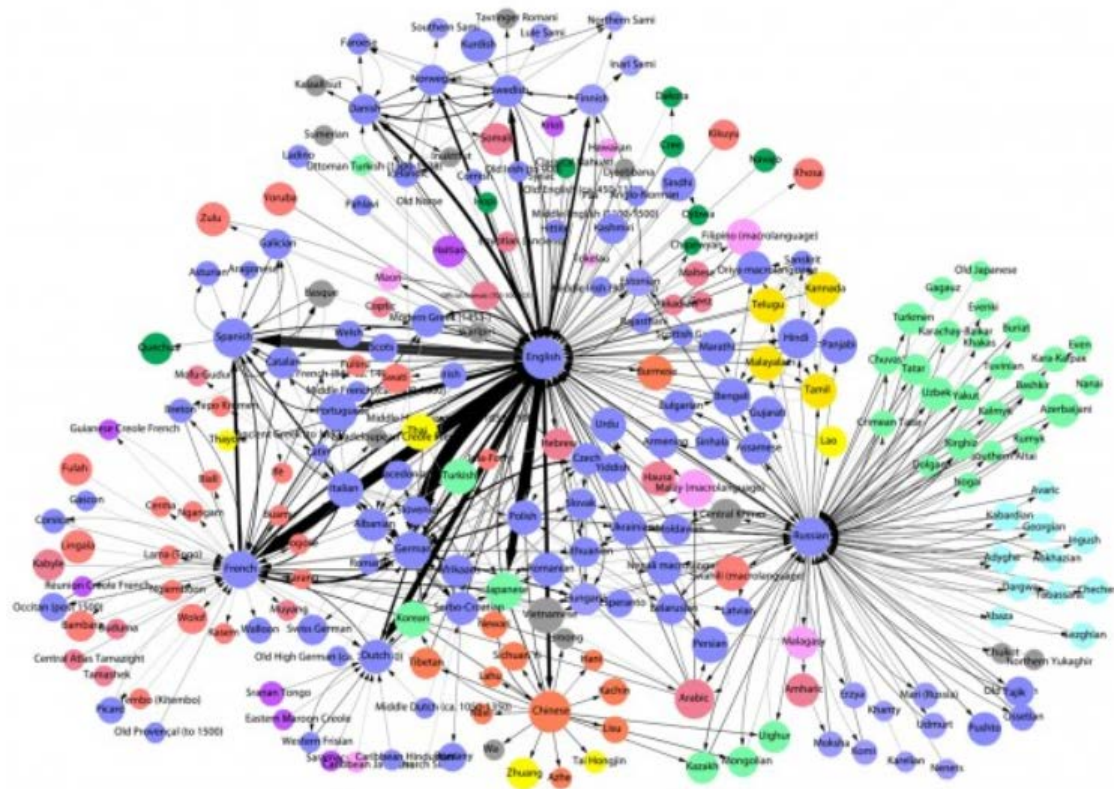
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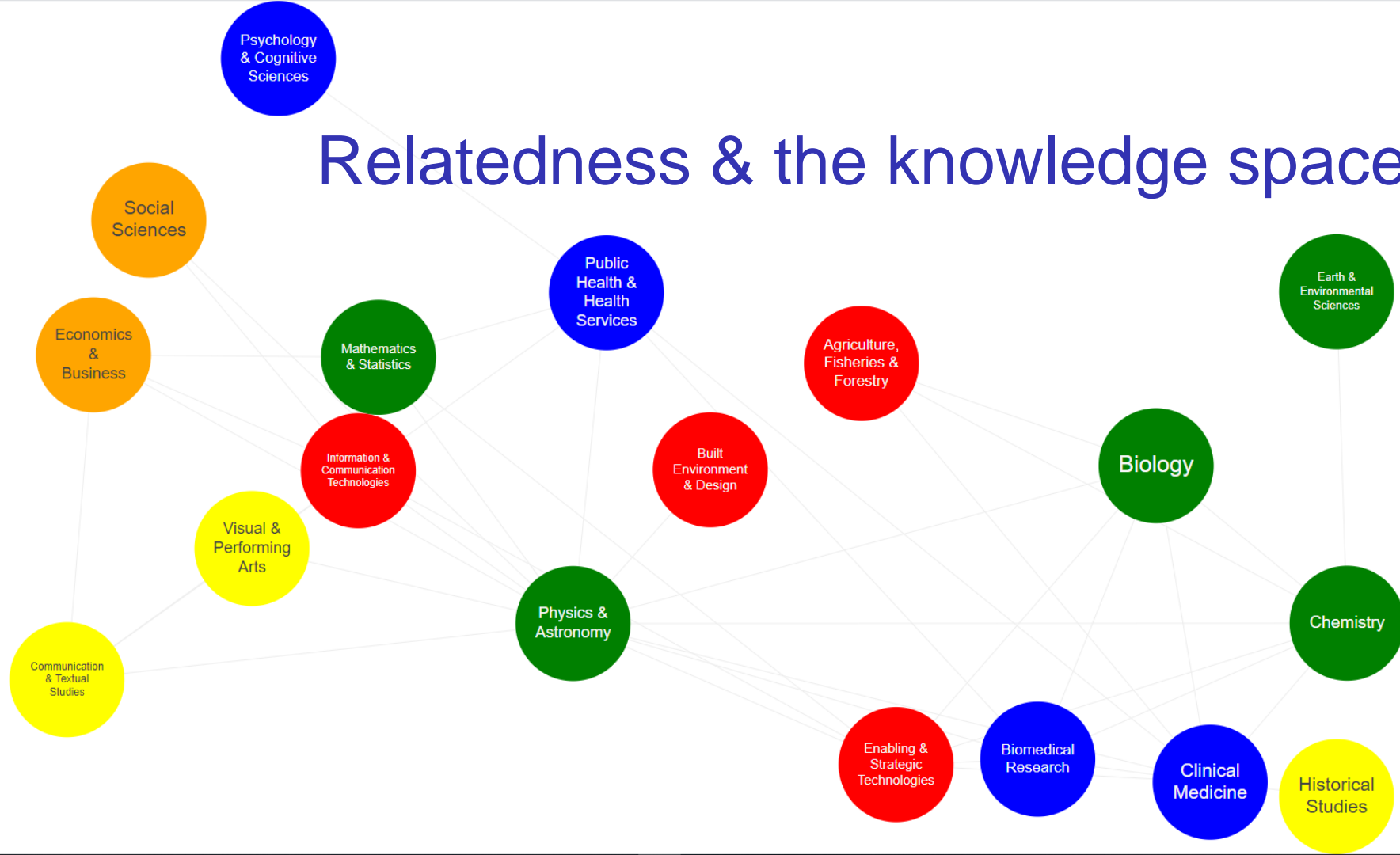
# Key issues

- Regions need to continuously **re-invent** themselves to secure long run prosperity
- Identify **diversification opportunities** that upgrade the regional economy
  - By building on **local** capabilities (internal relatedness)
  - By **connecting** to regions that have **complementary** capabilities (external relatedness)

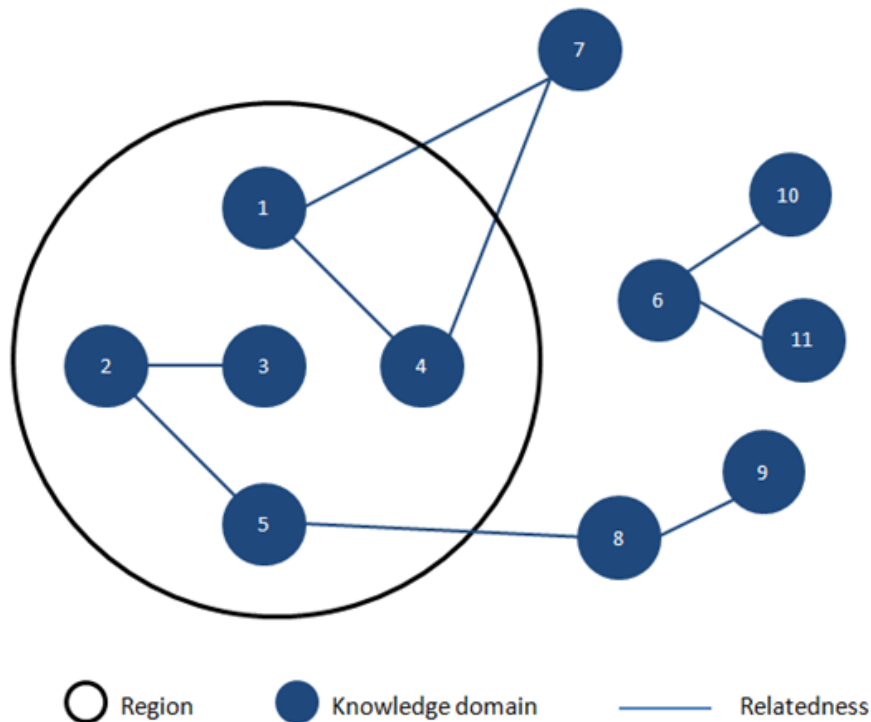
# Most influential languages



# Relatedness & the knowledge space



# Regional knowledge structure



# The density of related technologies

$$D_{i,c,t} = \frac{\sum_i x_i \varphi_{ij}}{\sum_i \varphi_{ij}} \times 100$$

City	Technology	Density (%)
Ile de France	Biotech	10
Ile de France	Nanotech	100
Rhone Alpes	Biotech	80
Rhone Alpes	Nanotech	0
...	...	...

The **Density Index** indicates how close a potential new technology is to the knowledge bases of a given city

# European hubs in battery technologies

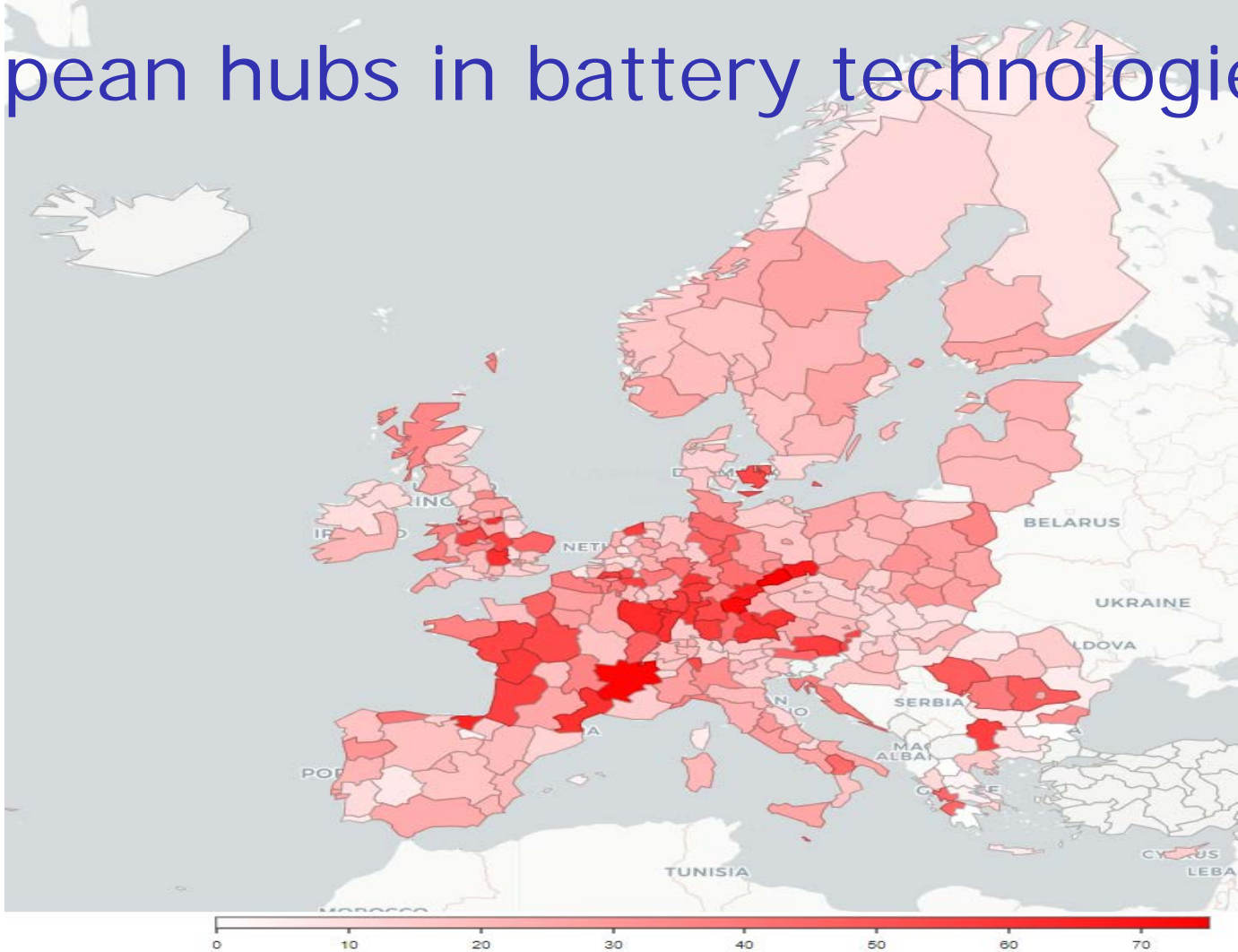
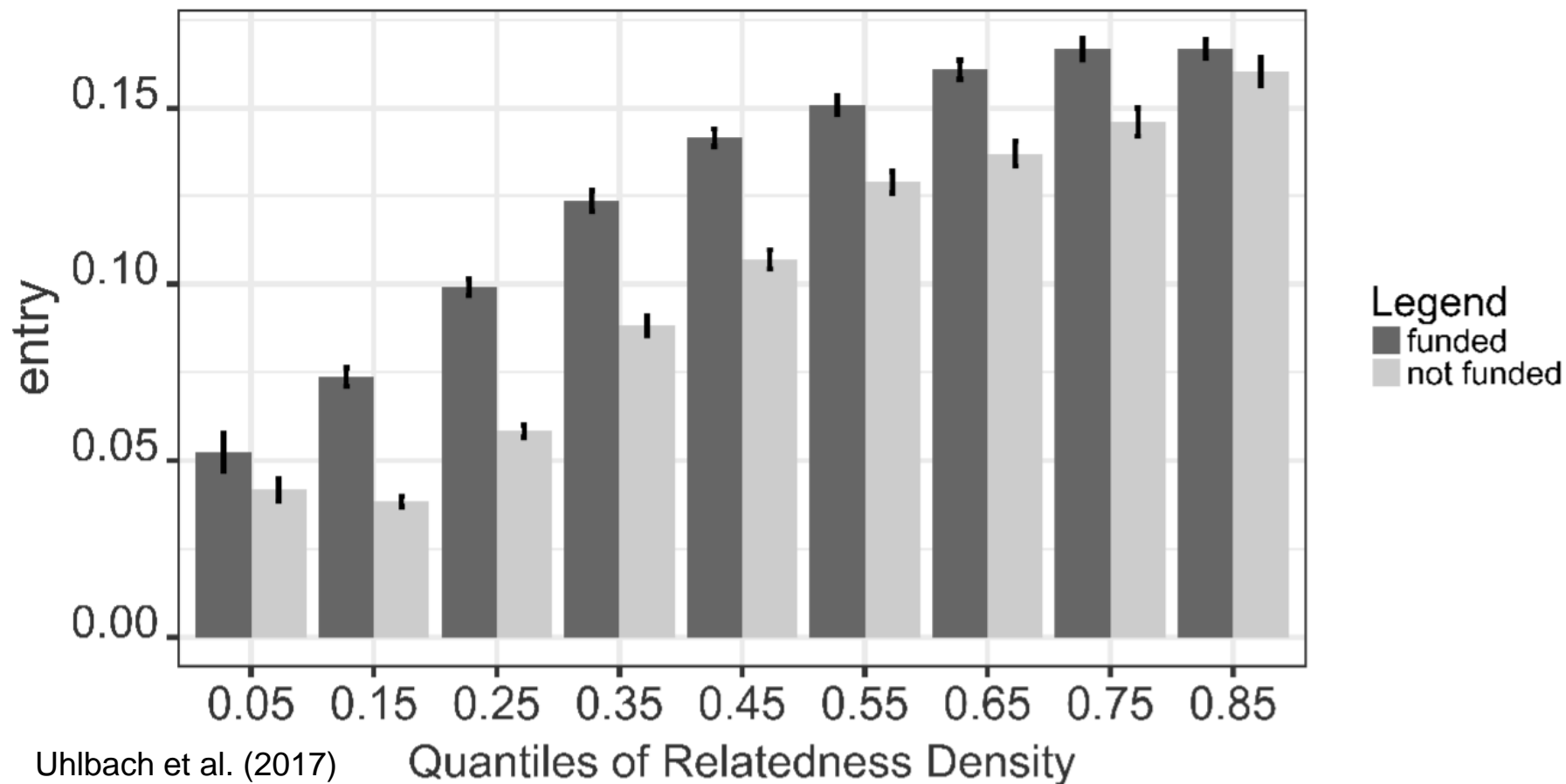
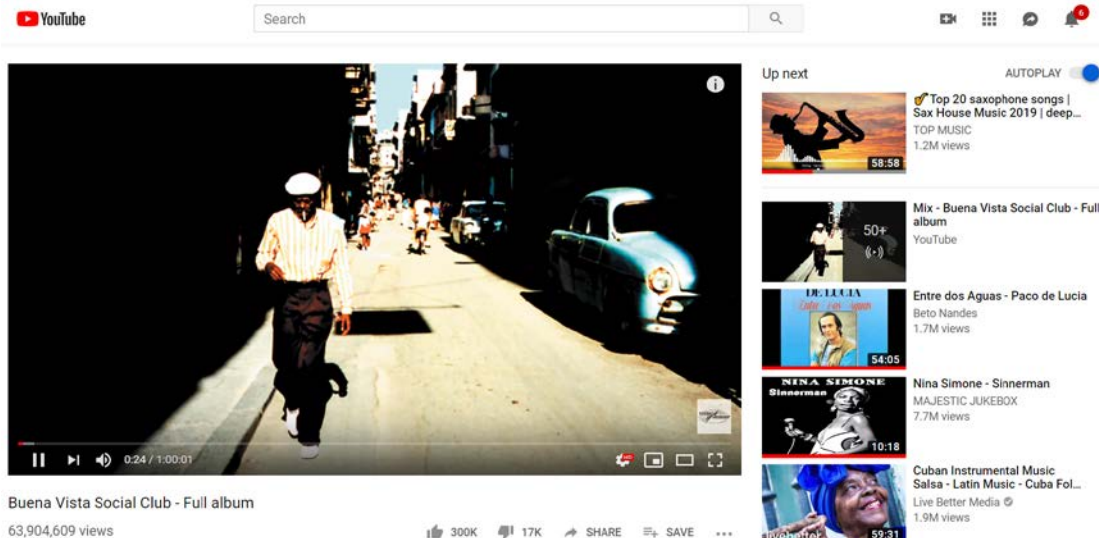


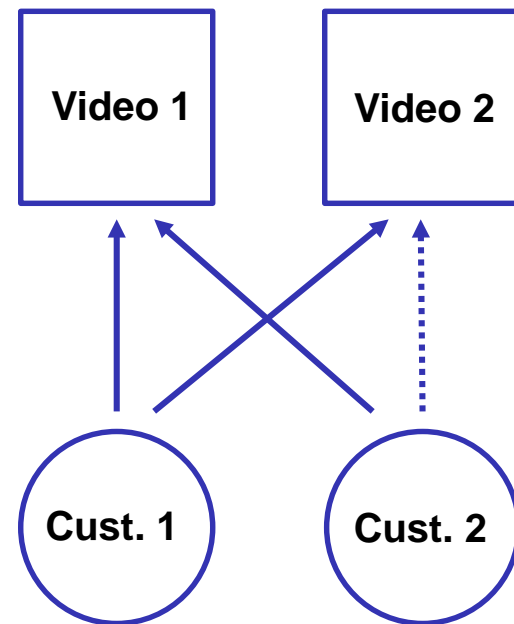


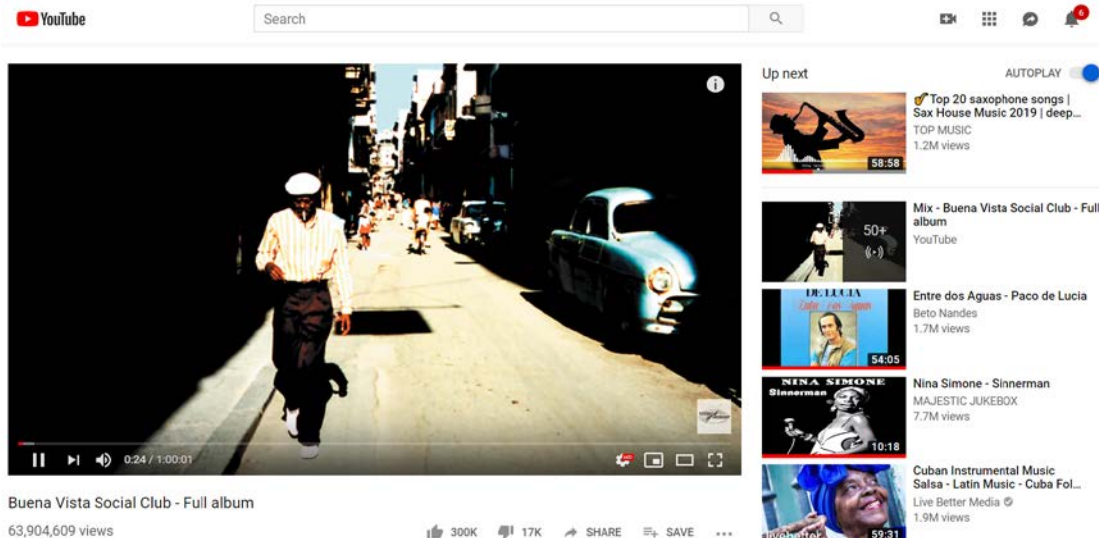
Figure 2: Differences of Mean Entry Probabilities



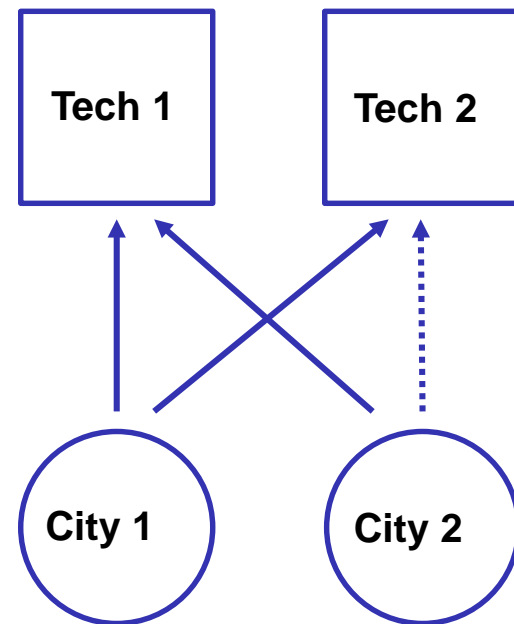


**We build recommendation systems to  
guide investment decisions in cities**

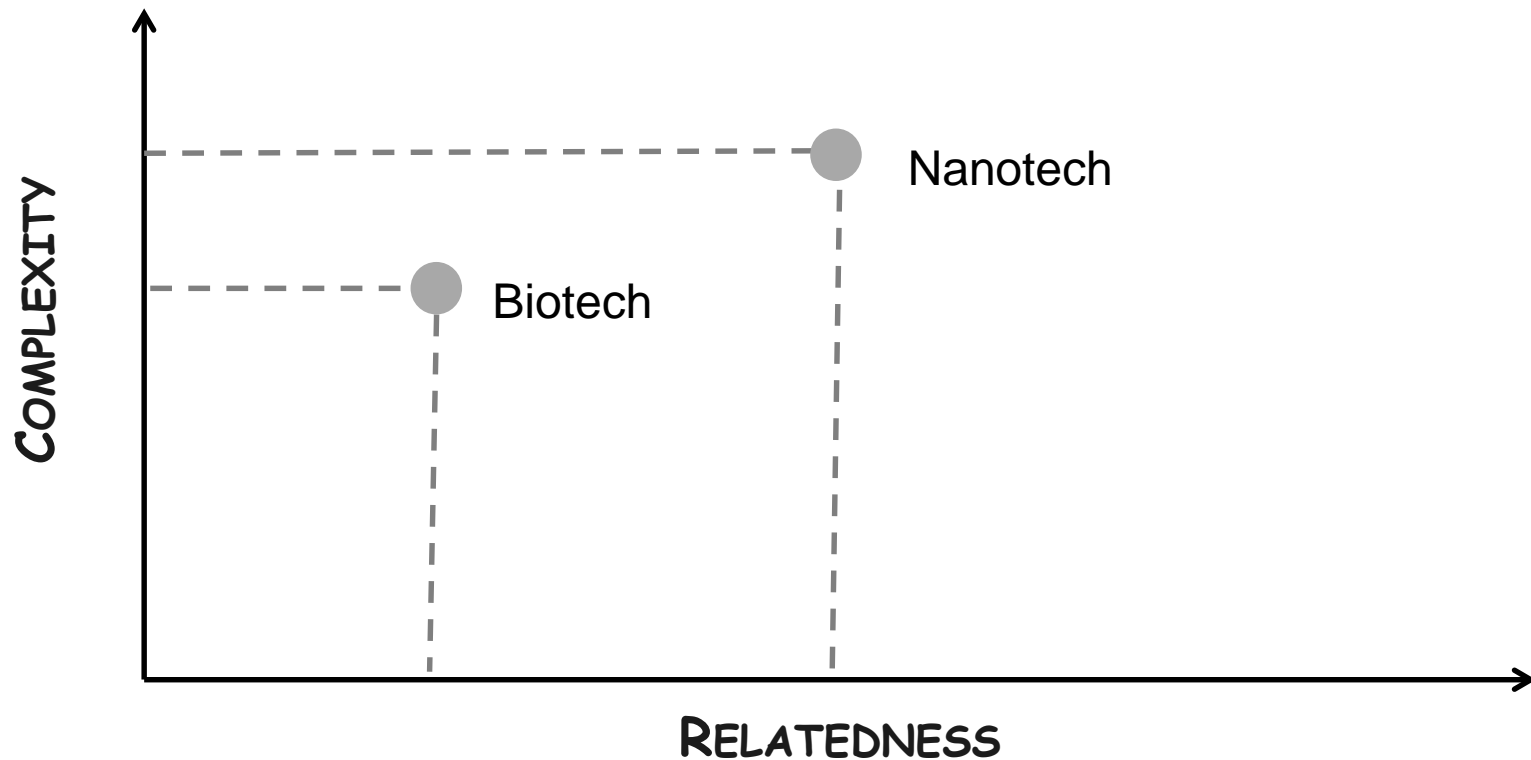




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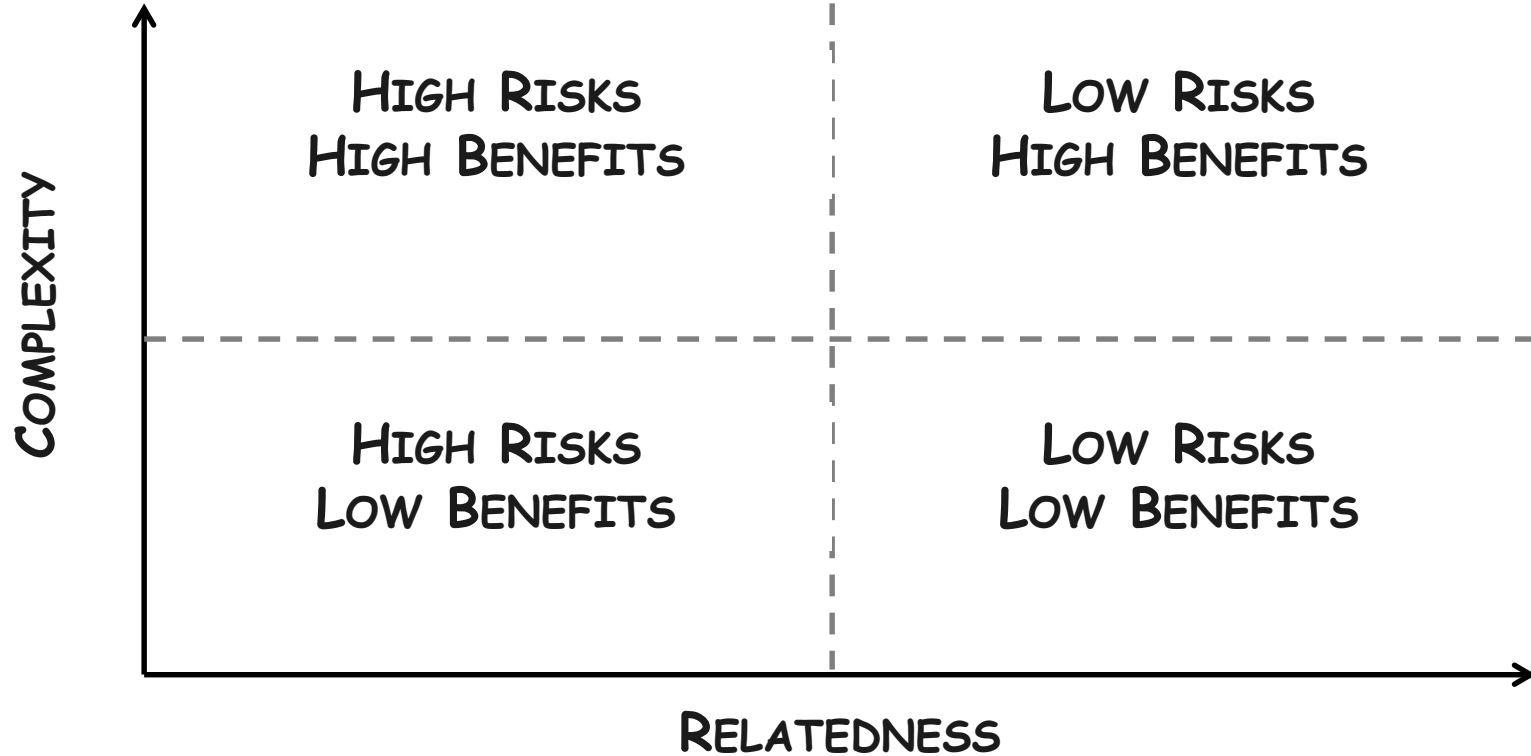


# Evidence-based framework for S3

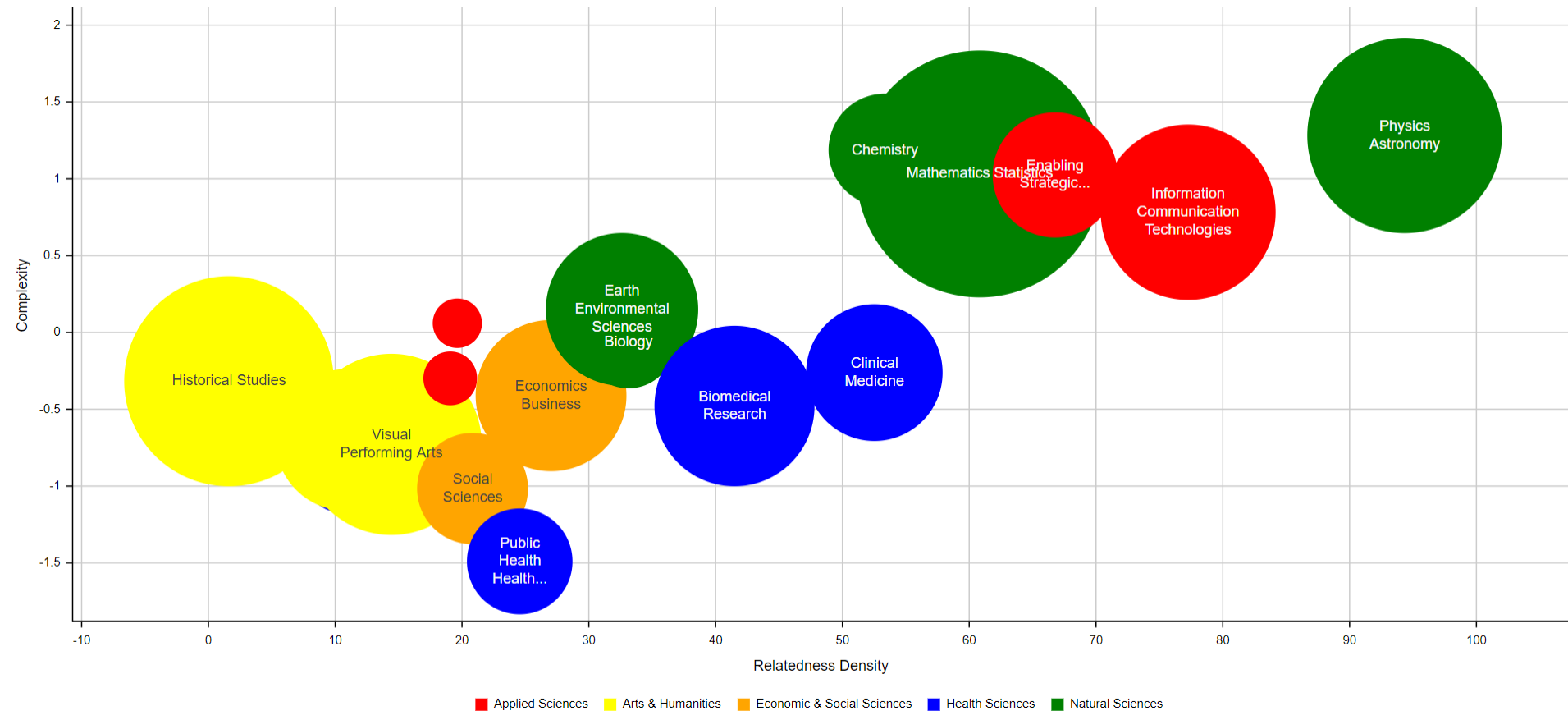


Balland, P. A., Boschma, R., Crespo, J., & Rigby, D. L. (2019). Smart specialization policy in the European Union: relatedness, knowledge complexity and regional diversification. *Regional Studies*, 53(9), 1252-1268.

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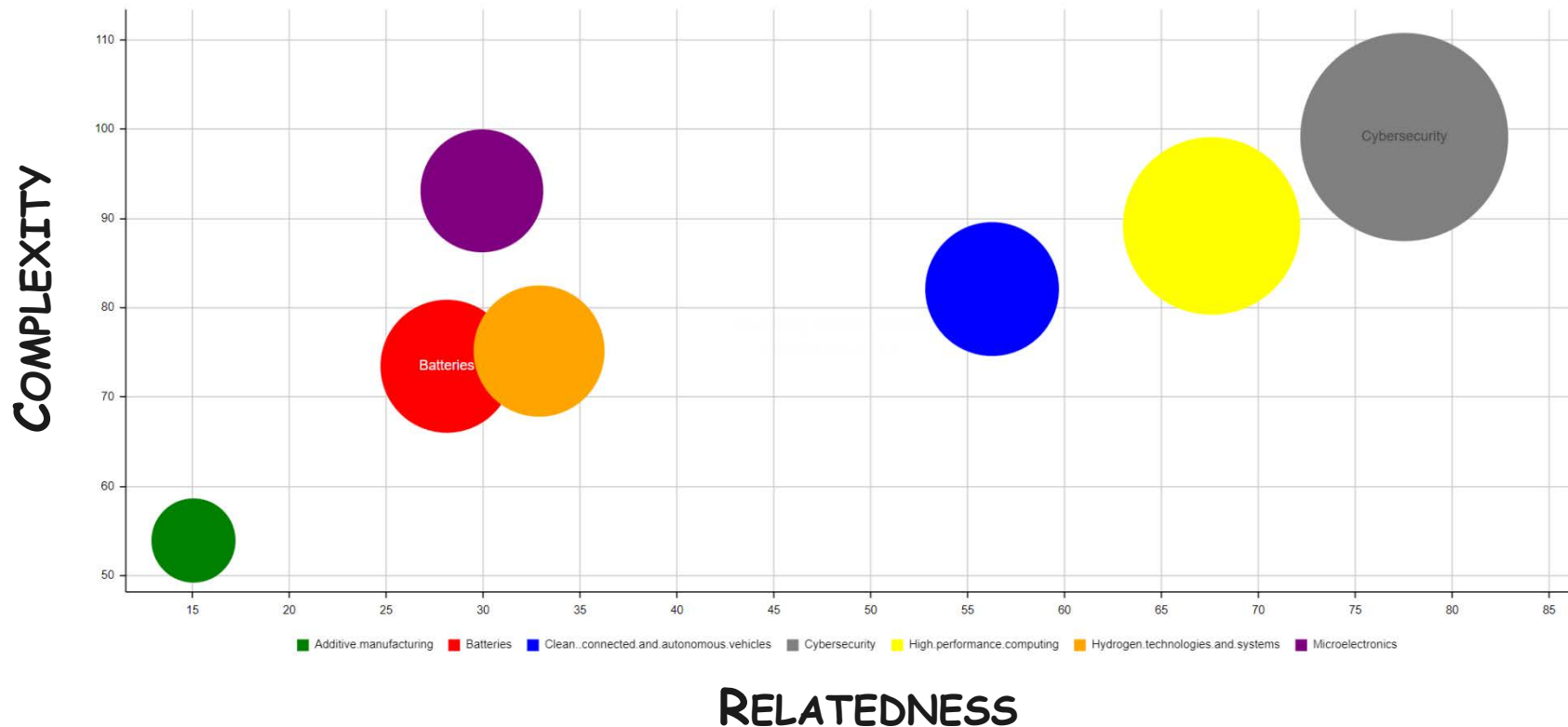


# S3 framework (FR10)

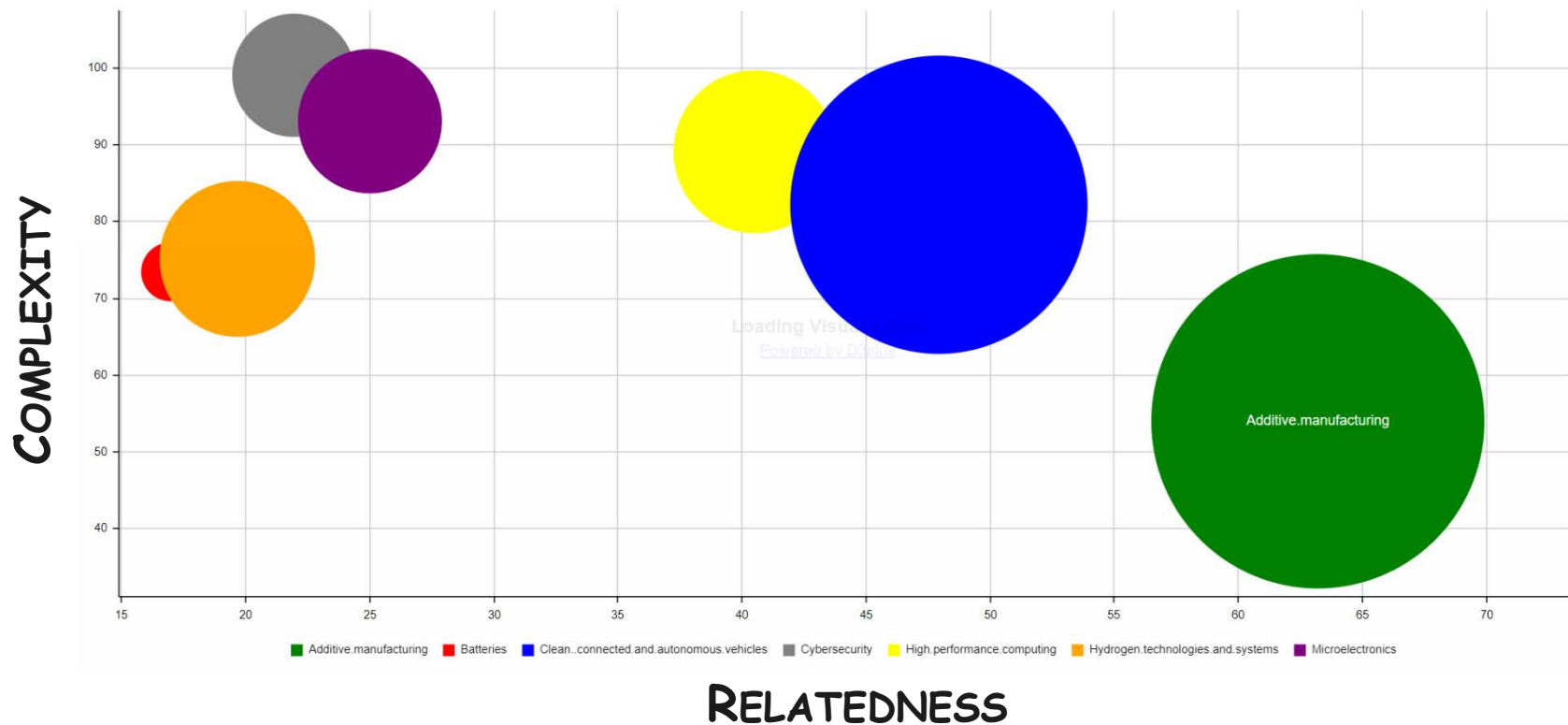




# Ile de France opportunities in 7 key techs



# Lancashire opportunities in 7 key techs



# Beyond local capabilities

- Local capabilities are key but so are **external** linkages
- Balland and Boschma (2019) show that regions that collaborate with **complementary** regions more likely to develop successful specializations
- A key issue to identify the right regions as **strategic partners** as part of S3
- Strategic partners not just any regions but the ones that can provide **missing** capabilities

# How to find strategic partners?

