

Digital Twin

Bi-Weekly 2 (28/10/2022)

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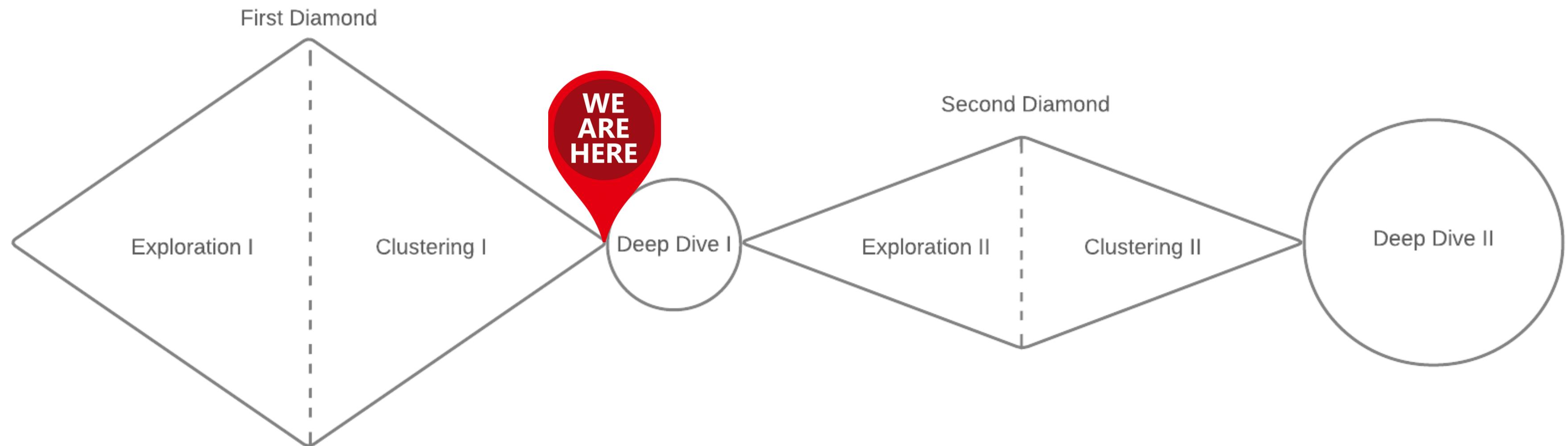
Agenda

- Work progress
- Learnings
- Next steps





Work Progress



Definitions:
 Exploration: Search for content without getting in detail
 Clustering: Putting contents together and insights
 Deep Dive: Going deep with the selected content

- First Diamond**
- A broad overview of the main topics related to Digital Twin.
 - Trying to create insights from contents that are not specific for Digital Twin applications
 - Key research areas:
 - Digital Twin
 - Discrete Event Simulations
 - Data and Process mining
 - Syncro. / Validations
 - Forecasting / Predictions
 - Model Generations

Academic

- Second Diamond**
- Specific overview about the main topics related to Digital Twin and production systems
 - Trying to find what was already done in the same area of Lego Factory
 - Key research areas are the same as the key-words from previous works + new key-words from insights of the first diamond.

Keywords

Classification

Academic
Business
Industrial

Step A

[Digital Twin]

(and)

[startups (or) Big players (or) research labs (or) universities (or) job (or) skills (or) projections (or) market place]

Step B

[Digital Twin and (Manufacturing or production)]

(and)

[Applications (or) Discrete Event simulation (or) process mining (or) model generation (or) sustainability (or) Types (or) Categories (or) Architecture (or) Framework (or) Standards]



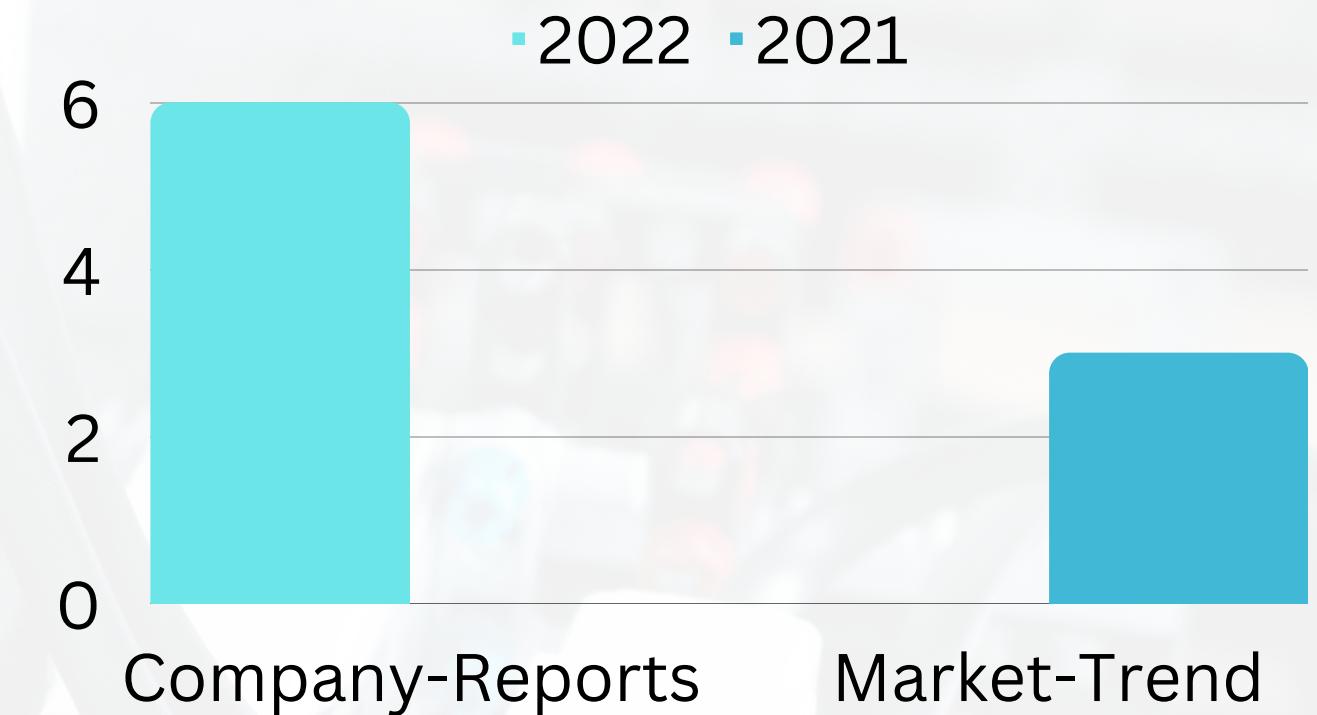
Learnings

Learnings: Business



Major reports from

- Siemens
- Altair
- marketsandmarkets.com
- grandviewresearch.com



Digital twin technology is the process of using data streams to create a digital representation of a real-world asset to improve collaboration, information access, and decision-making. ~ Altair r Digital Twin Global Survey Report 2022

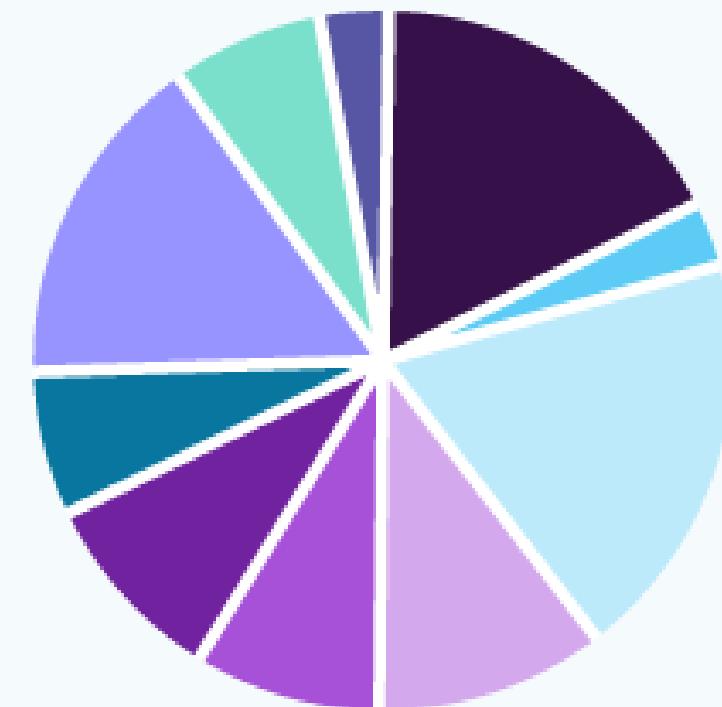
Learnings: Business



Report Attribute	Details
Market size value in 2022	USD 11,126.2 million
Revenue forecast in 2030	USD 155,839.4 million
Growth rate	CAGR of 39.1% from 2022 to 2030

Global Digital Twin Market

share, by end use, 2021 (%)



- Manufacturing
- Agriculture
- Automotive & Transport
- Energy & Utilities
- Healthcare & Life Sciences
- Residential & Commercial
- Retail & Consumer Goods
- Aerospace
- Telecommunication
- Others



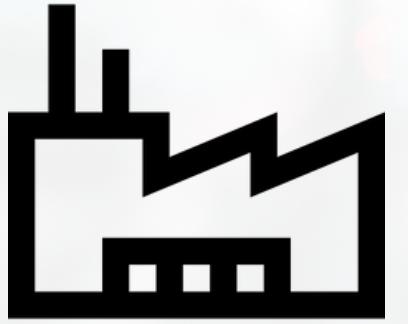
GRAND VIEW RESEARCH

\$7.5B

Global Market Size,
2021

Source:
www.grandviewresearch.com

Learnings: Industrial



SIEMENS

30+

Industries & Startups



WareBee™

SEKAI



ditto



A digital twin is a virtual representation of an object or system that spans its lifecycle, is updated from real-time data, and uses simulation, machine learning and reasoning to help decision-making. ~ IBM

Learnings: Industrial



Tour de France
2022



Leveraging the power of digital twins to revolutionize race operations

Operational efficiency is critical for A.S.O. To ensure that they have full visibility of the entire race we've created a digital twin of the Tour de France and Tour de France Femmes avec Zwift to enable them to digitally transform race operations.

Race vehicle location



Onsite weather

03 08



Caravan



Learnings: Academic



Overall research performance

294
Scholarly Output i

View list of publications

28,189
Views Count i

4.58
Field-Weighted Citation Impact i

6,336
Citation Count i

67
International Collaboration i



Metric

■ Academic-corporate collaboration

■ No academic-corporate collaboration

Scholarly Output

9.2%

27

90.8%

267

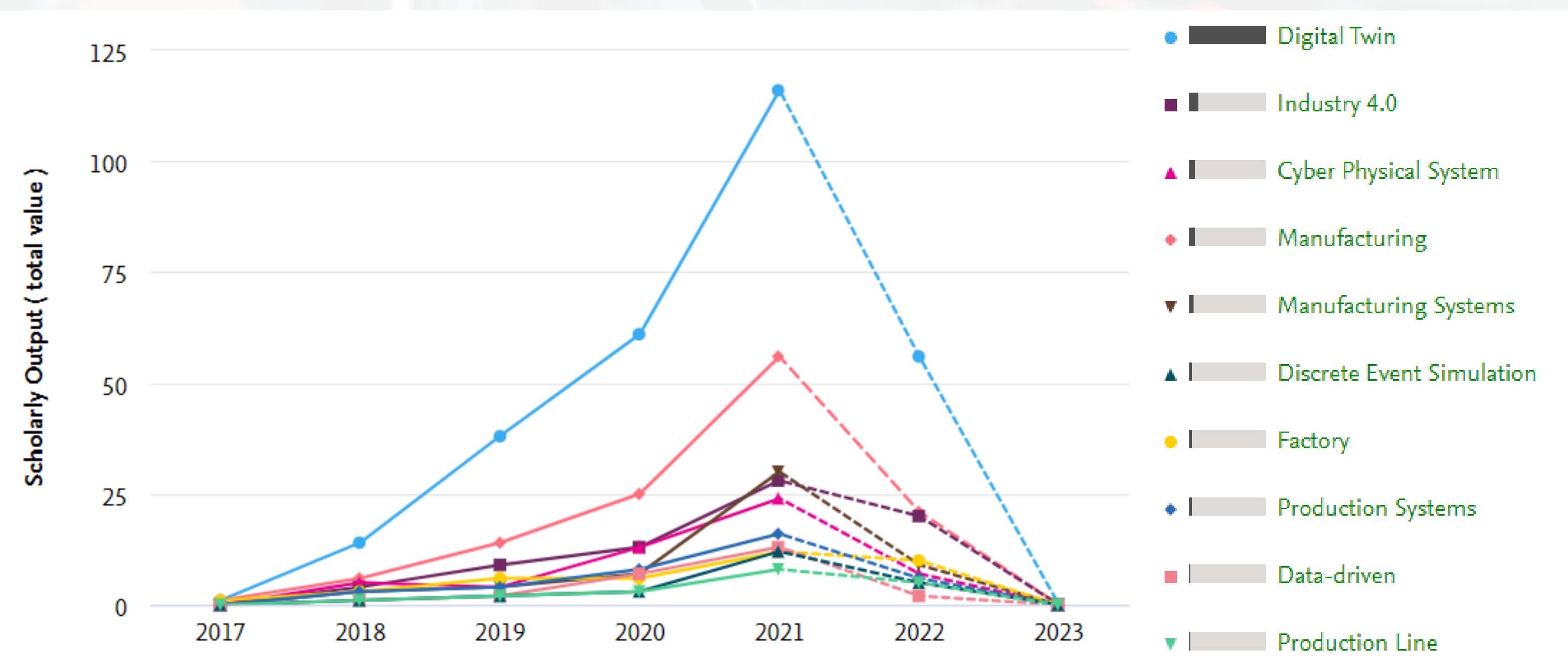
Learnings: Academic Major Keyphrases



Learnings: Academic

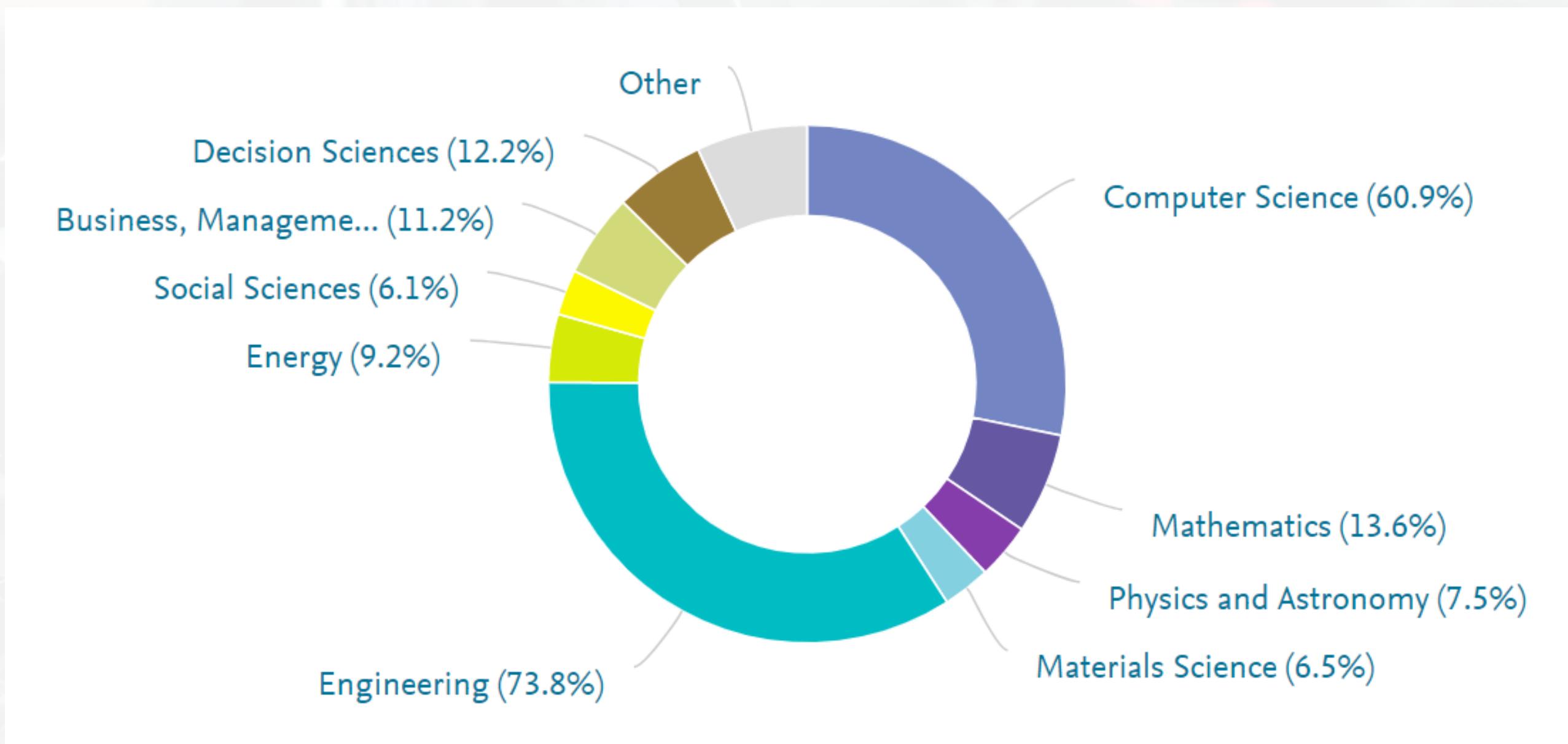


Keyphrases: by year

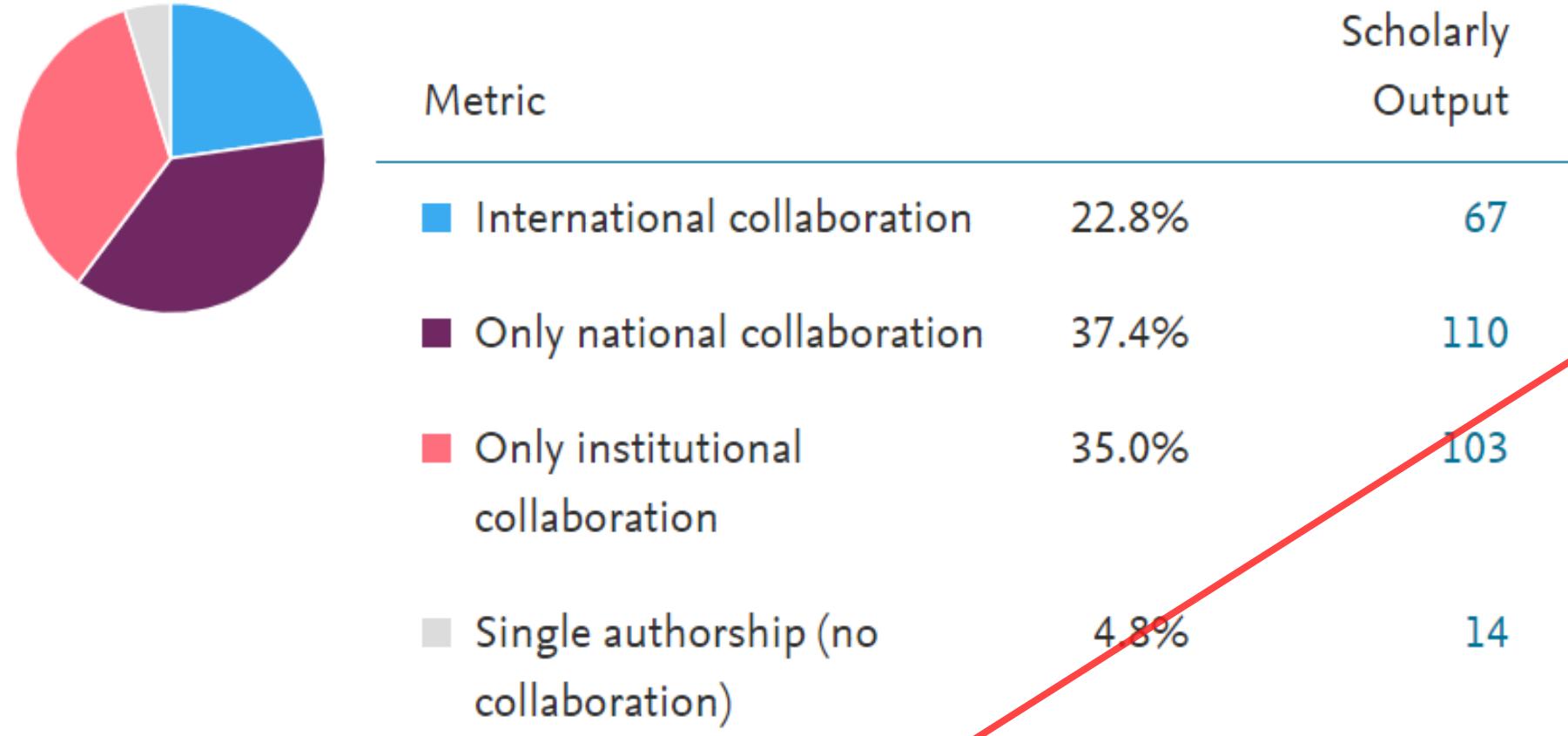


Learnings: Academic

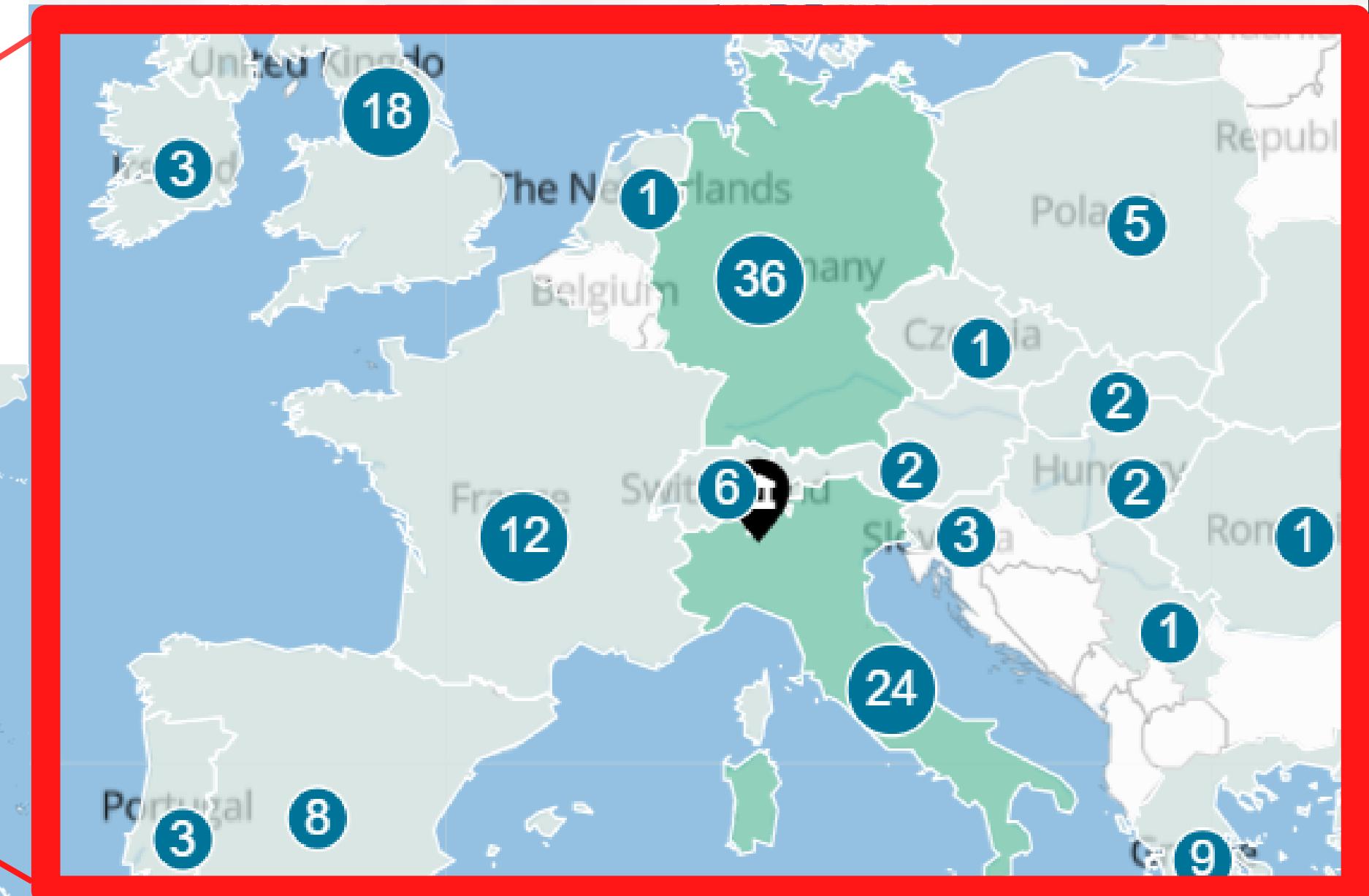
Publication share by Subject Area



Learnings: Academic

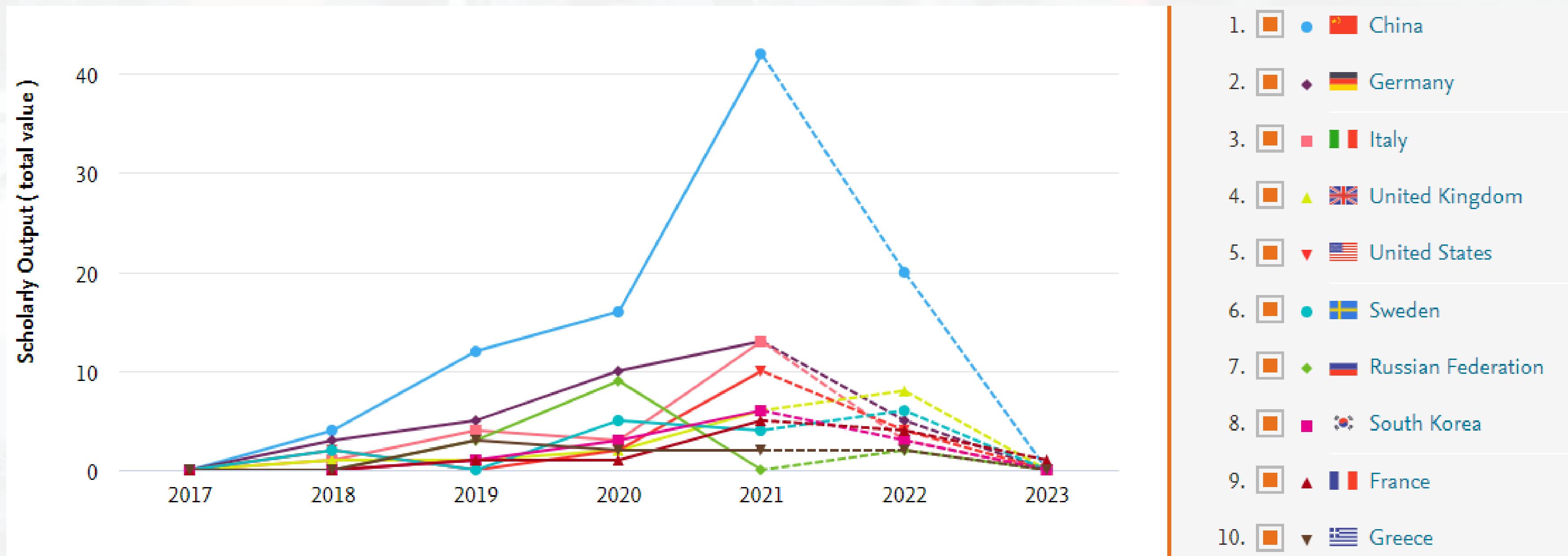


Country wise distribution



Learnings: Academic

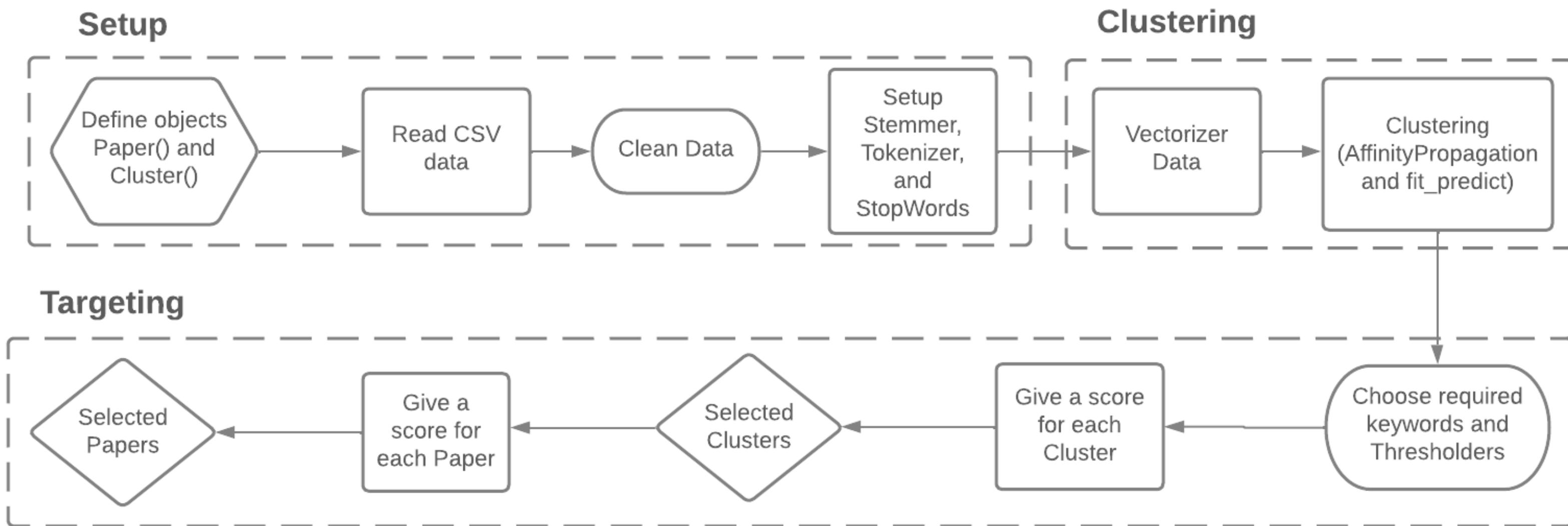
Country wise distribution: by year



Learnings: Academic

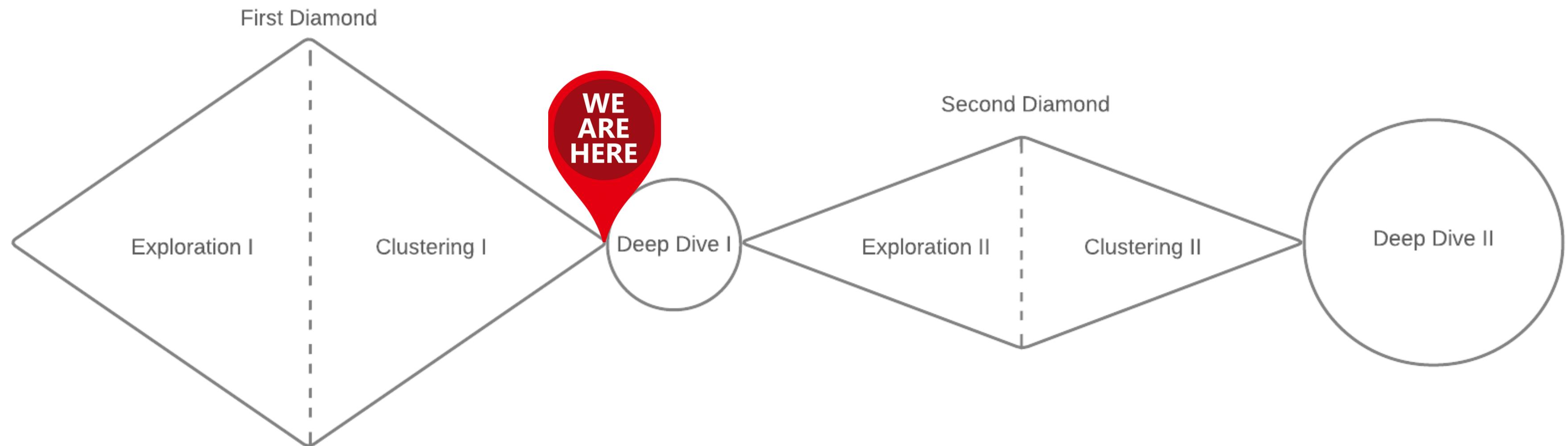


Clustering Academic Articles



Next Steps





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Next Steps

- Pick important papers from the clusters
- Read import papers
- Refine keywords for a second level of review





Thank You