

IP Analytics: from data to action

Ekrem Ayhan ÇAKAY

IP Analytics Section

Technology and Innovation Support Division

IP for Innovators Department (IPID)

IP and Innovation Ecosystems Sector

CACEEC, September 22nd, 2026



WIPO

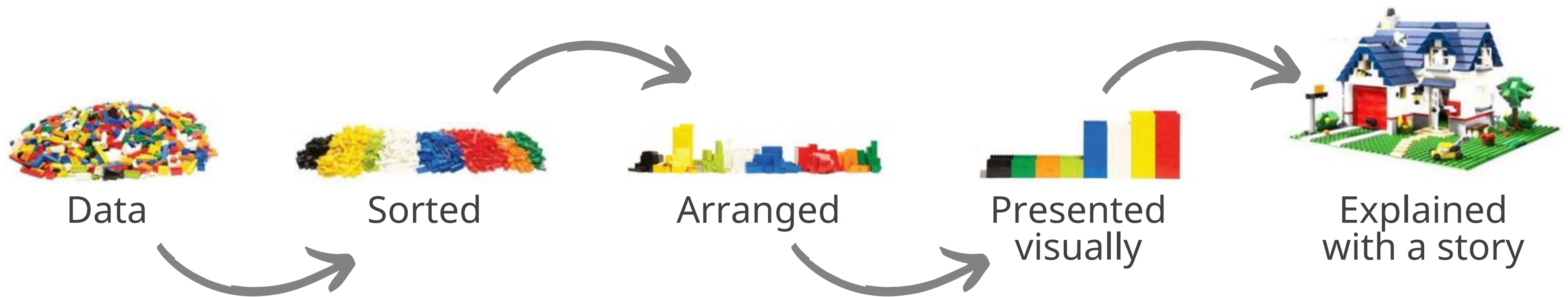
Ekrem A. Çakay

- B.Sc Electronics Engineering @METU, MBA @ITU
- Arcelik IP Department 17-22
Electrolux IP Department 22-24
Patent Analyst since 2017
- Joined WIPO as Patent Analyst in 2024
- Qualified Patent Information Professional (QPIP)
9+ years' experience in patent information
- ekrem.cakay@wipo.int



What is IP analytics?

Leveraging the wealth of knowledge contained in IP data (mostly patents) to provide added-value information and support informed decision making



How can Sri Lanka add value to their natural resources?



Pulmoddai mineral sands

<https://www.attractionsinsrilanka.com/travel-directory/pulmoddai-mineral-sand-deposits/>



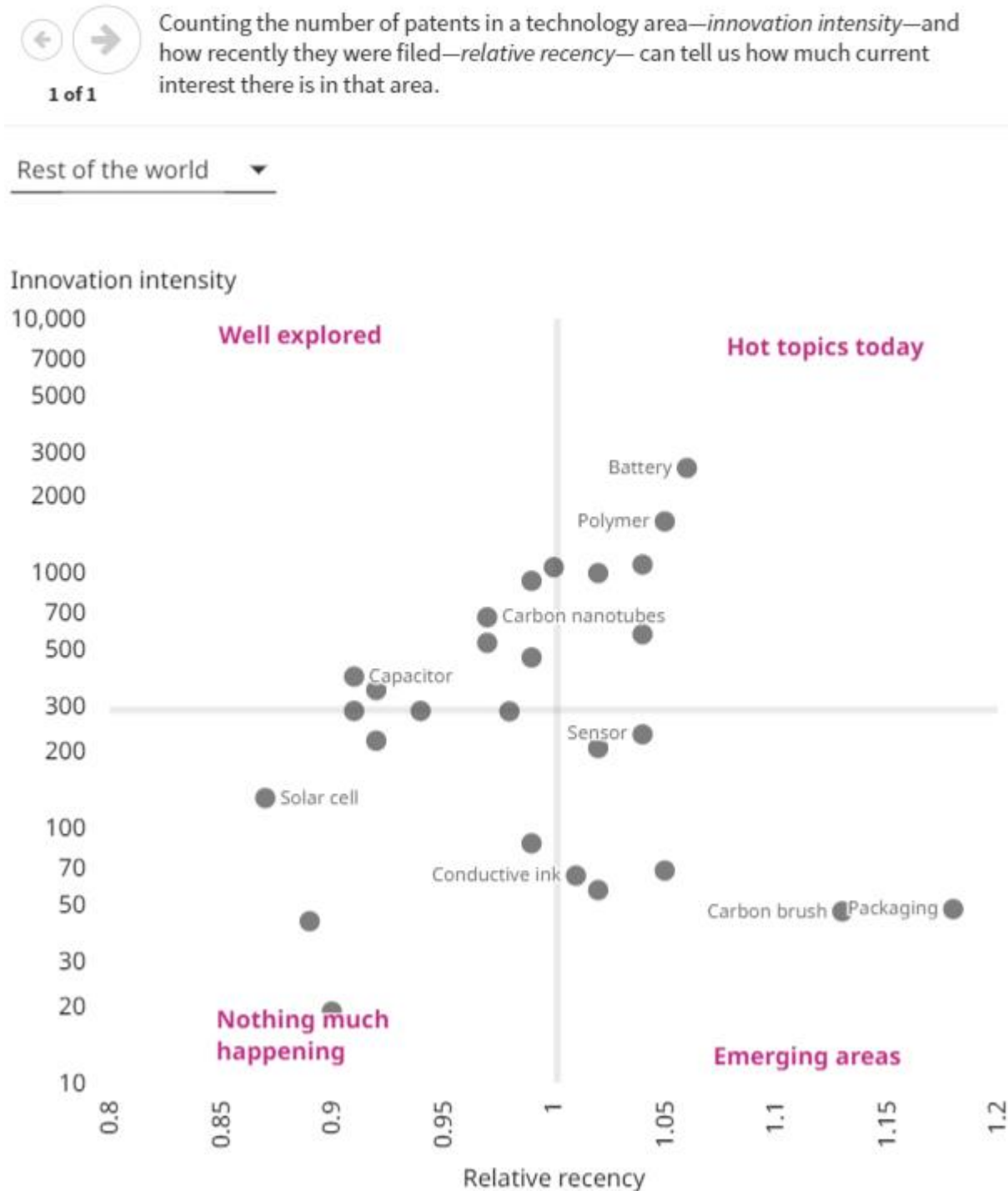
Vein graphite

Source of several commercially important minerals:

Ilmenite, rutile - Titanium

Zircon - Zirconium

How analyzing patent data helped



WIPO MAGAZINE

How Patent Information Can Help Spot Technology Gaps and Catalyze Economic Development

November 2023



By *Lakshmi Supriya*, Technology and Innovation Support Division, WIPO

This is exactly what Wijesinghe and her team at NIA are doing. They are using the insights from patent analytics as foundations on which to build and advance their innovation journey. “These reports are catalysts for shaping the mineral roadmap and policy in Sri Lanka,” she says.

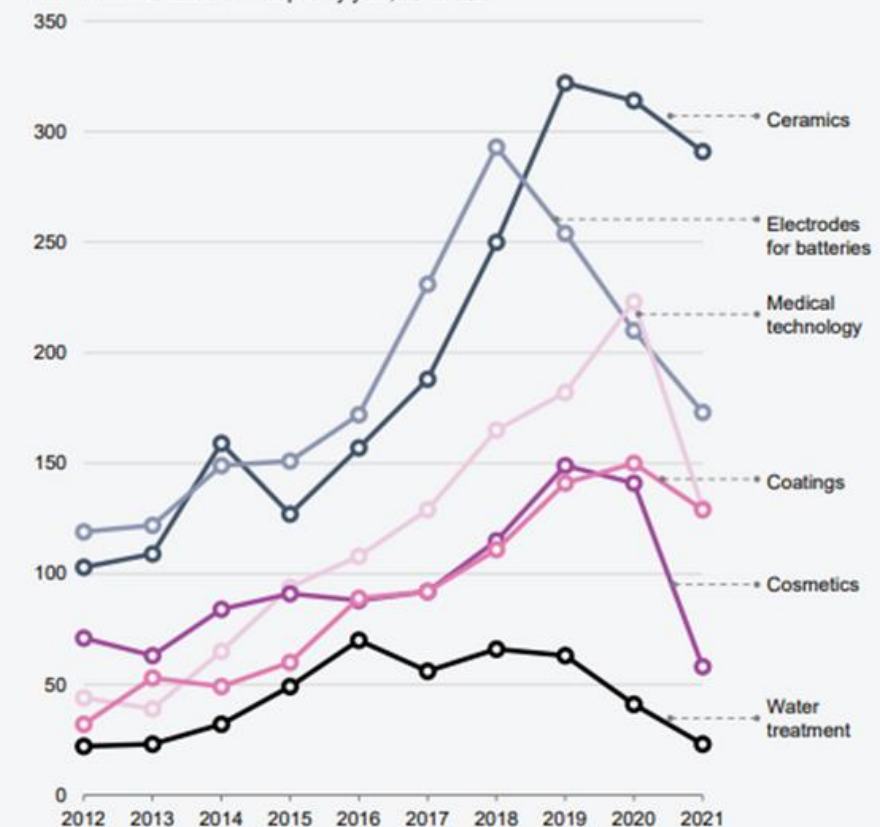
Patent Landscape of Industrial applications of titanium dioxide and titanium



About 94% of the world's titanium in 2019 was used to produce titanium dioxide and about 6% was used to produce titanium metal and titanium alloys. This infographic focuses on the patent landscape of industrial applications of titanium dioxide and titanium. In this infographic, data are limited to granted or pending patents from 2012 to 2021 to focus on the most recent applications and to estimate emerging trends to the next few years, led to a collection of 53,754 patent families.

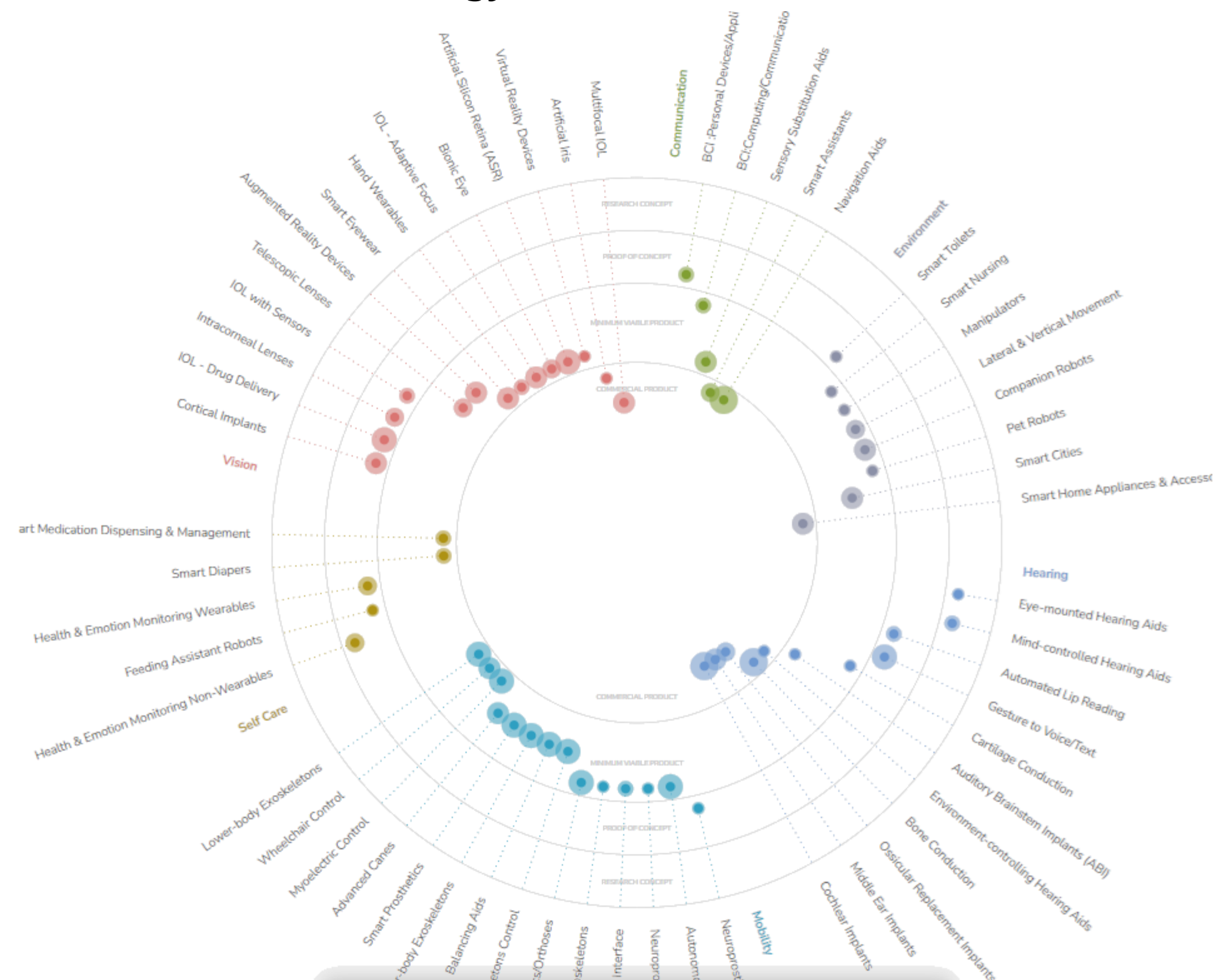
China, Japan and the United States are the most frequent first priority countries.

Patent families based on first priority year, 2012–2021

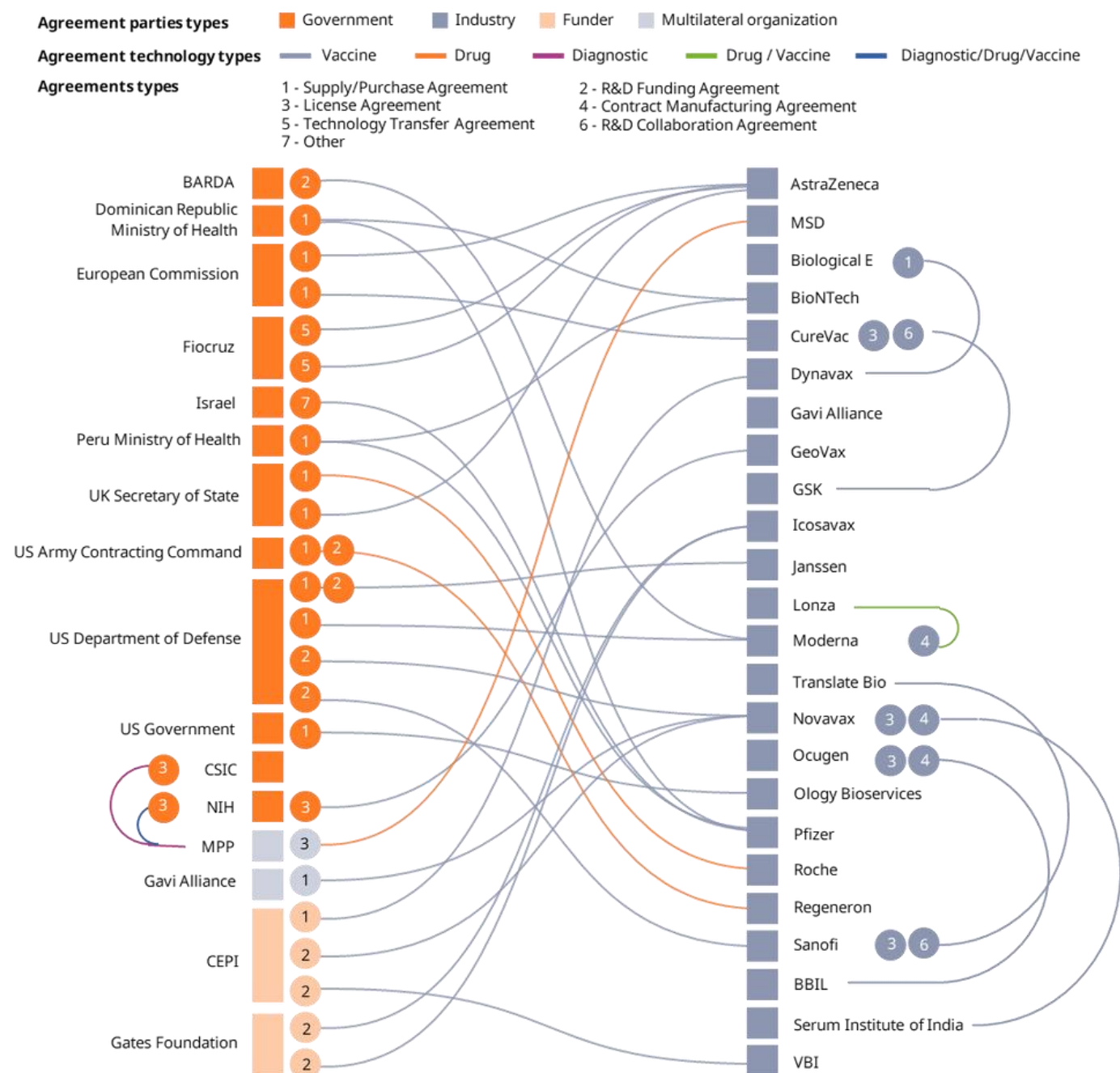


It's more than just patents

Assistive Technologies – assessing Technology Readiness Levels (TRLs)

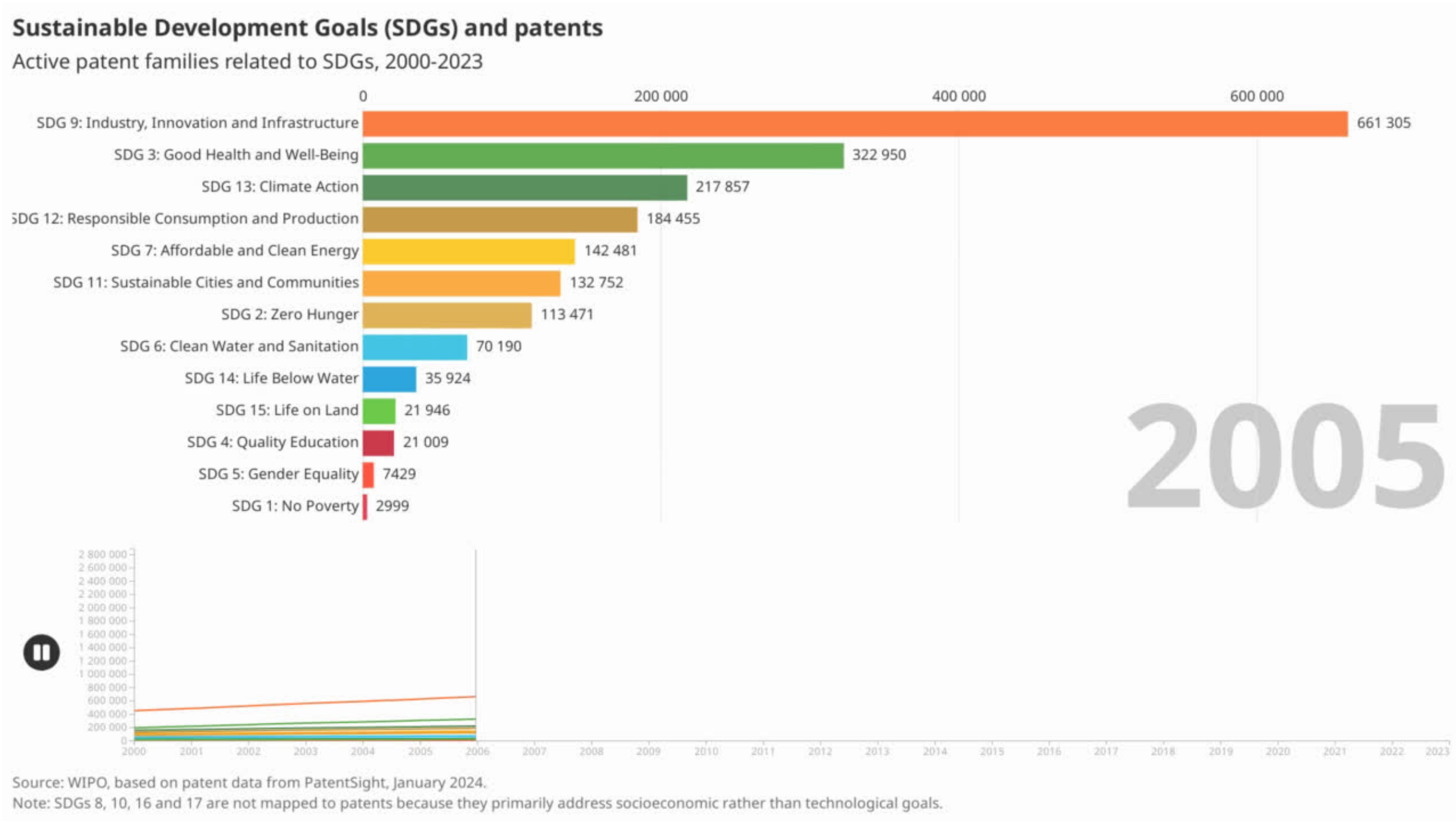


COVID-19-related technology agreements



World IP Day 2024

Analyzing SDG-related patents



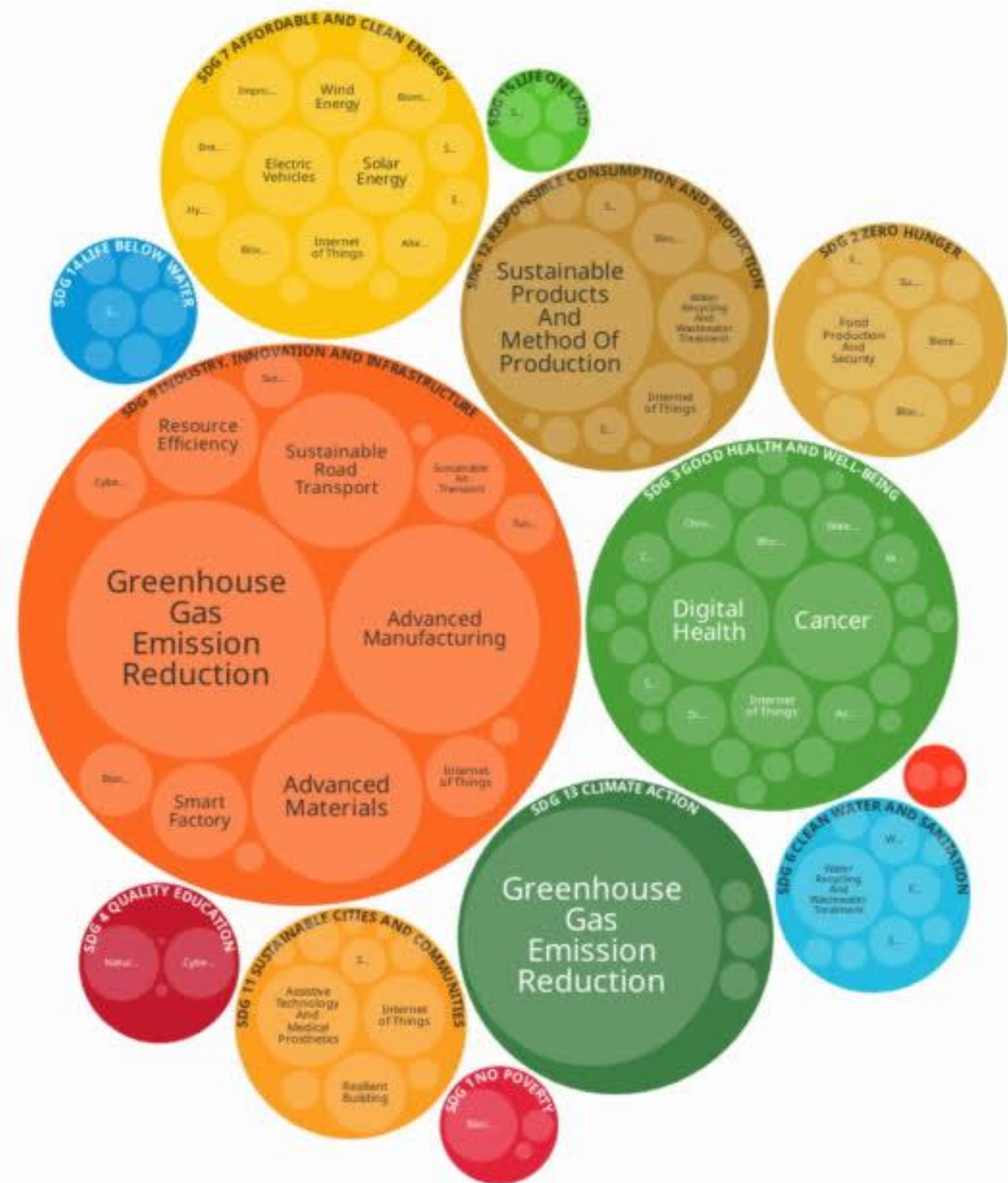
Mapping Innovations:
Patents and the Sustainable
Development Goals



Check out the
SDG report here!

Bringing data to life

Delving deeper into the mapping of SDGs and patents shown in this chart.



Mapping Innovations:
Patents and the Sustainable
Development Goals



Check out the
SDG report here!

IP analytics training



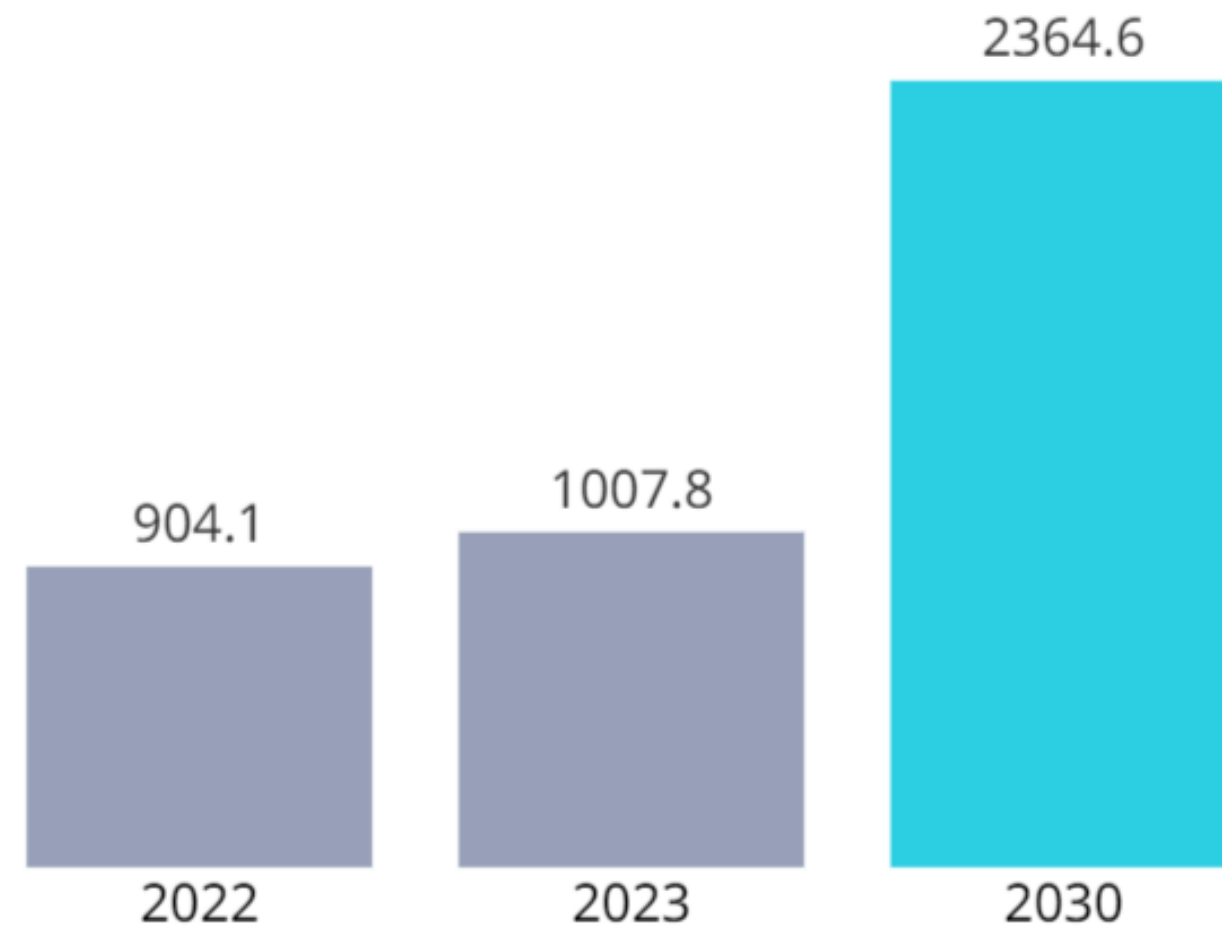
New
game-based
learning



A high-growth area

Patent analytics market size to surpass USD 2.3 billion by 2030, exhibiting a CAGR of 13%

Market size (million, USD)



Data source: Fortune Business Insights

New IP Analytics Section in the IP and Innovation Ecosystems Sector created in September 2023, within IP for Innovators Department (IPID)

We have a vision of becoming a global center of excellence for IP analytics with in-house experts

Patent Analytics Community of Practice

WIPO thought leadership initiative

Launched in November 2023

70+ members from 21 IP offices

Aiming to create a strong community of patent analytics practitioners to create **common understanding, identify good practices** and advance the field of patent analytics through **knowledge and resource sharing, problem-solving and cooperation**

Second **Patent Analytics CoP Annual Symposium** will take place in Rio de Janeiro in September, 2025



IP analytics at WIPO



WIPO Technology Trends

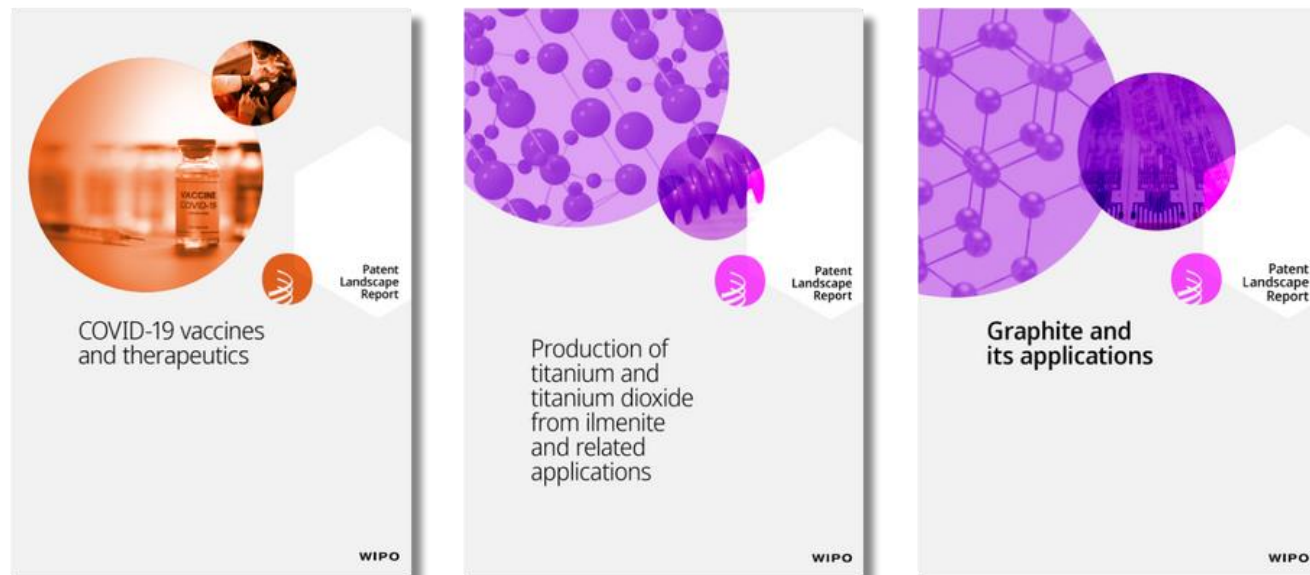


Patent analytics methodological resources

- WIPO guidelines for preparing patent landscape reports
- Manual on free and open-source tools for patent analytics
- Handbook on patent analytics



WIPO patent landscape reports



IP analytics training

- Introductory and advanced seminars and workshops for Member States and TISCs.

Patent Landscape Report
Webinar, July 3

Generative Artificial Intelligence



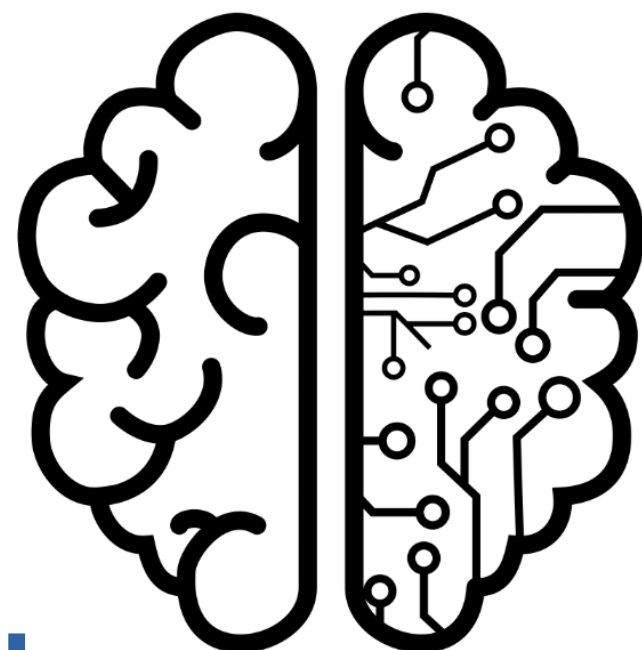
Photos: Getty Images

WIPO

Interest in GenAI is booming

**54,000 patent
families
(inventions)**

**25%
published
in 2023**



**75,000 scientific
publications**

**45%
published
in 2023**



Methodology: modern concepts like GenAI makes patent search tricky



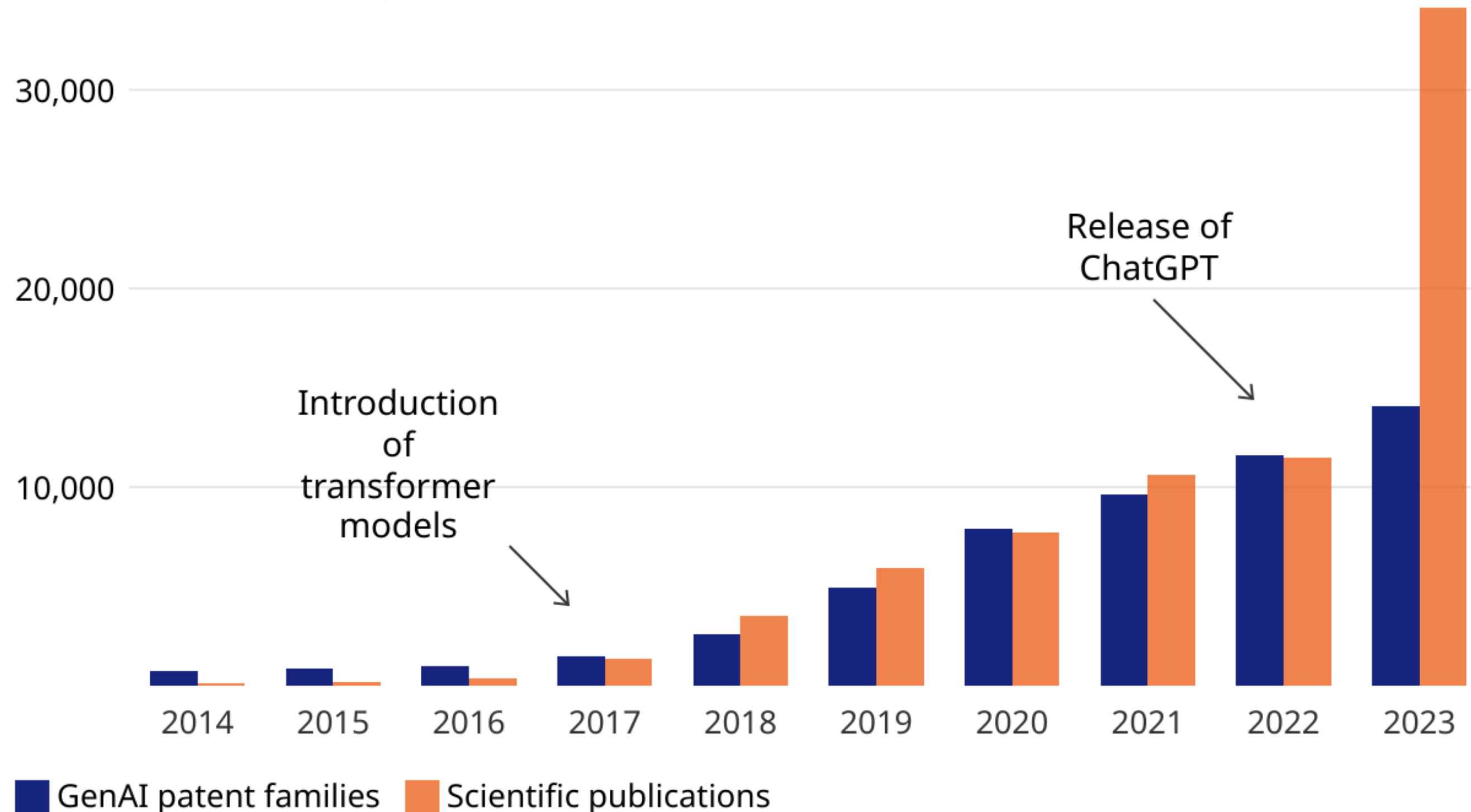
Traditional search using patent classification and/or keywords

+

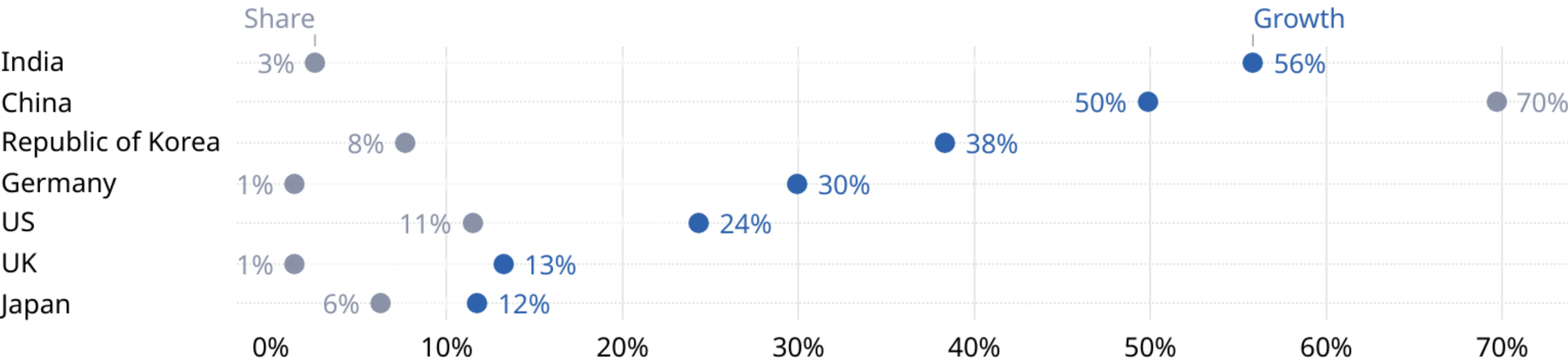


100 prompts for various concepts of GenAI in an advanced AI search algorithm

Since the introduction of the transformer in 2017, the number of GenAI patents has increased by **over 800%**



Chinese inventors have a 70% market share of GenAI patents, but the highest annual growth rate comes from Indian inventors



Patent Landscape Report

Agrifood



WIPO

Methodology



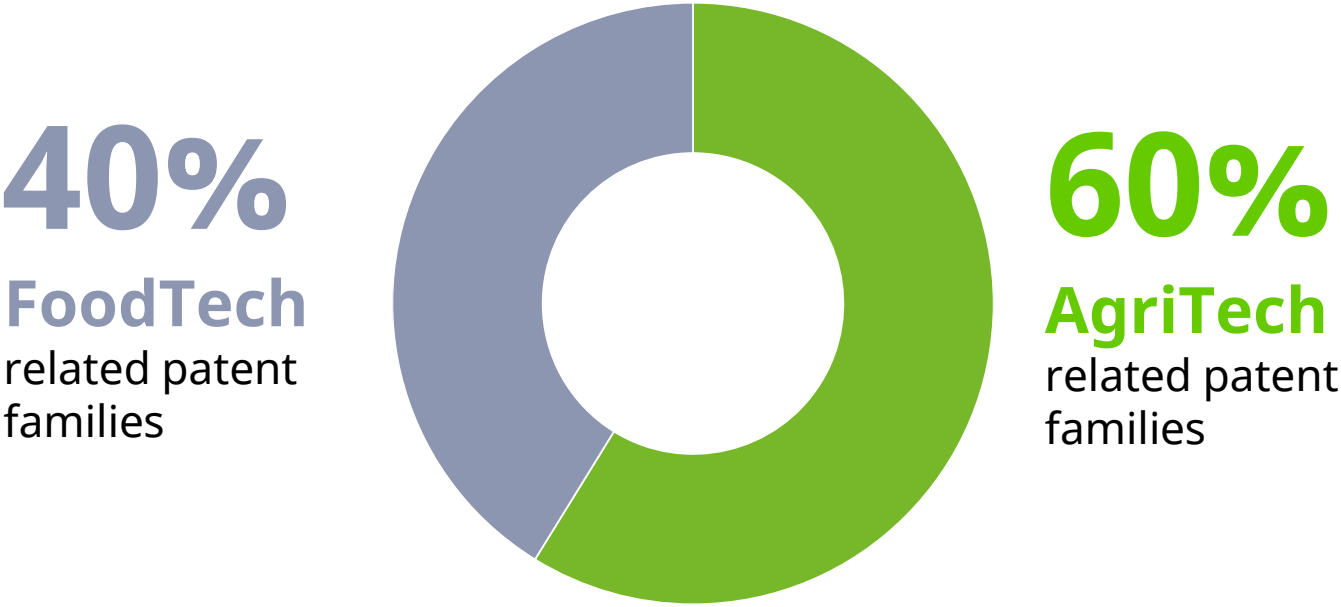
- Automation
- Carbon farming
- Compliance/trackability
- Connectivity/sensors/smart farming
- Crop adaptation and genetics
- Planting/harvesting/storage
- Education and training
- Economic management/whole farm management

- Investment/exchange platform
- Livestock management
- Mapping/imagery
- Pest/disease management
- Precision agriculture
- Robotics and drones
- Soil and fertilizer management
- Waste management
- Water management

- Consumer technology
- Delivery services
- Food technology
- Food chemistry
- Food services
- Supply chain

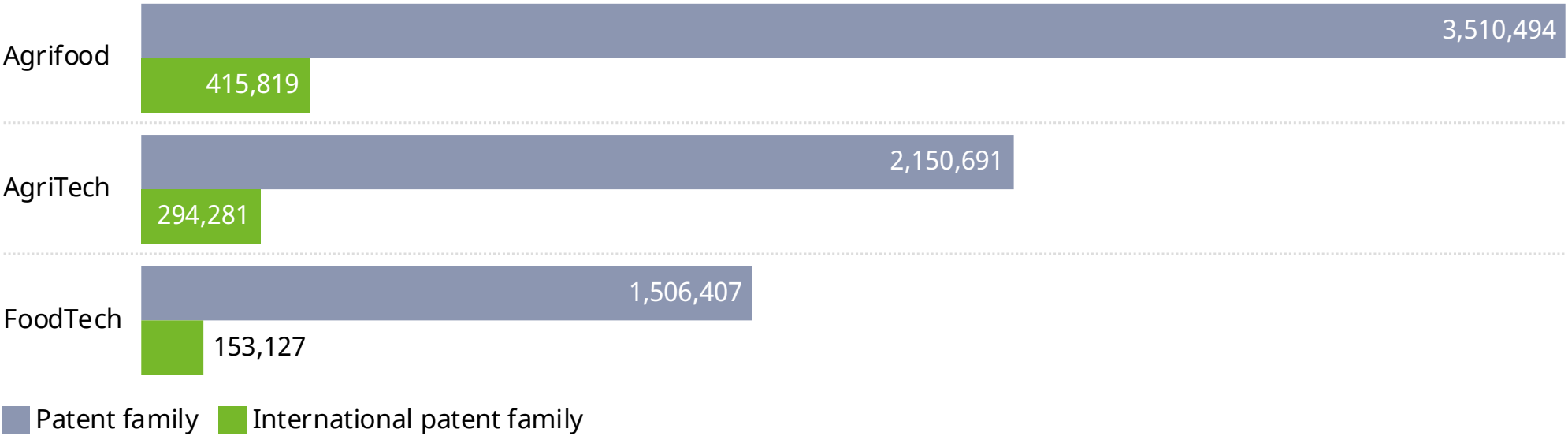
3.5 million patent families

450,000 international patent families



More than 3.5 million patent families have been published in the Agrifood sector over the past 20 years, with around 12% being international patent families.

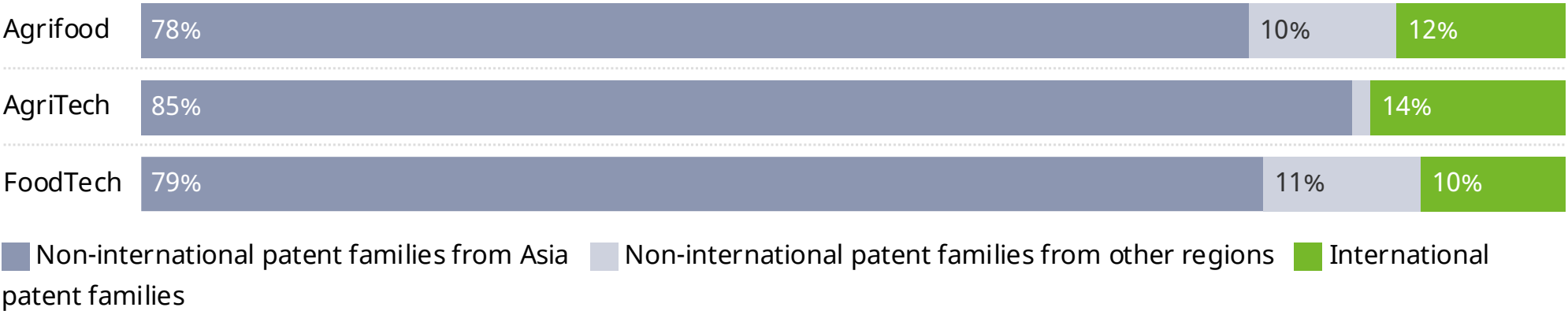
Number of patent families and international patent families for the Agrifood super-domain, comprising the AgriTech and FoodTech domains



Note: For complete notes, see Chapter 2, Figure 2.1 and 2.2.
Source: WIPO, based on patent data from Orbit Intelligence (Questel), March 2024.

Non-international patent families represent 86% of the overall AgriTech domain and 90% in FoodTech.

Figure 2.2 Share of international patent families in Agrifood, AgriTech and FoodTech



Note: The data statistics are based on the number of patent families published since 2004.
Source: WIPO, based on patent data from Orbit Intelligence (Questel), March 2024.

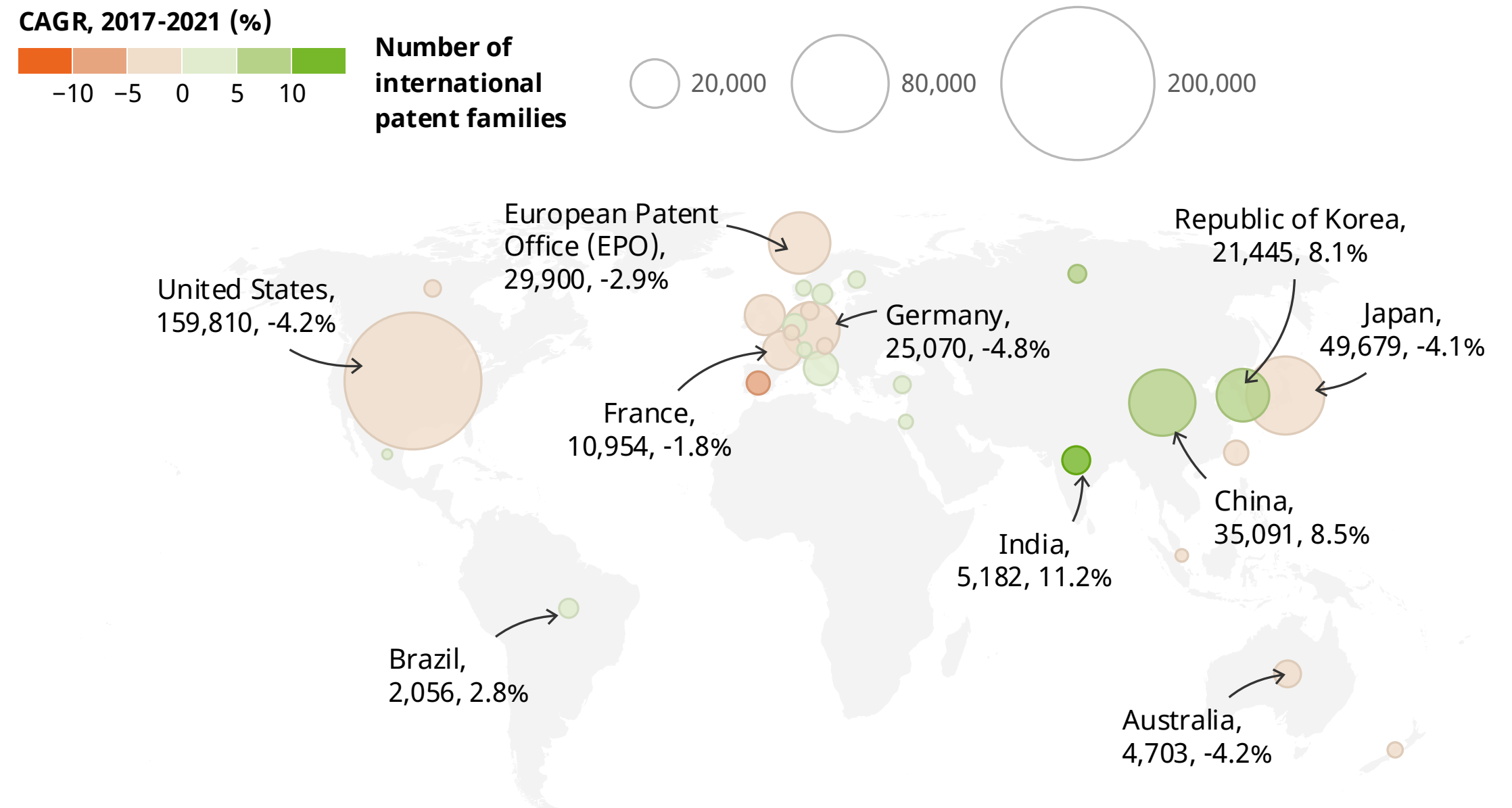
Inventive regions in Agrifood

The United States leads in patent filings in the Agrifood sector, Japan and China take second and third place.

India has seen the fastest annual growth in patent applications, followed closely by China and the Republic of Korea.

The United States is a leader in Agrifood but faces a declines in growth, whereas India and China are experiencing rapid growth.

Figure 2.6 Top first priority jurisdictions (a proxy for R&D location) in Agrifood by number of international patent families



Note: The data statistics are based on the number of international patent families published since 2004.

Source: WIPO, based on patent data from Orbit Intelligence (Questel), March 2024.

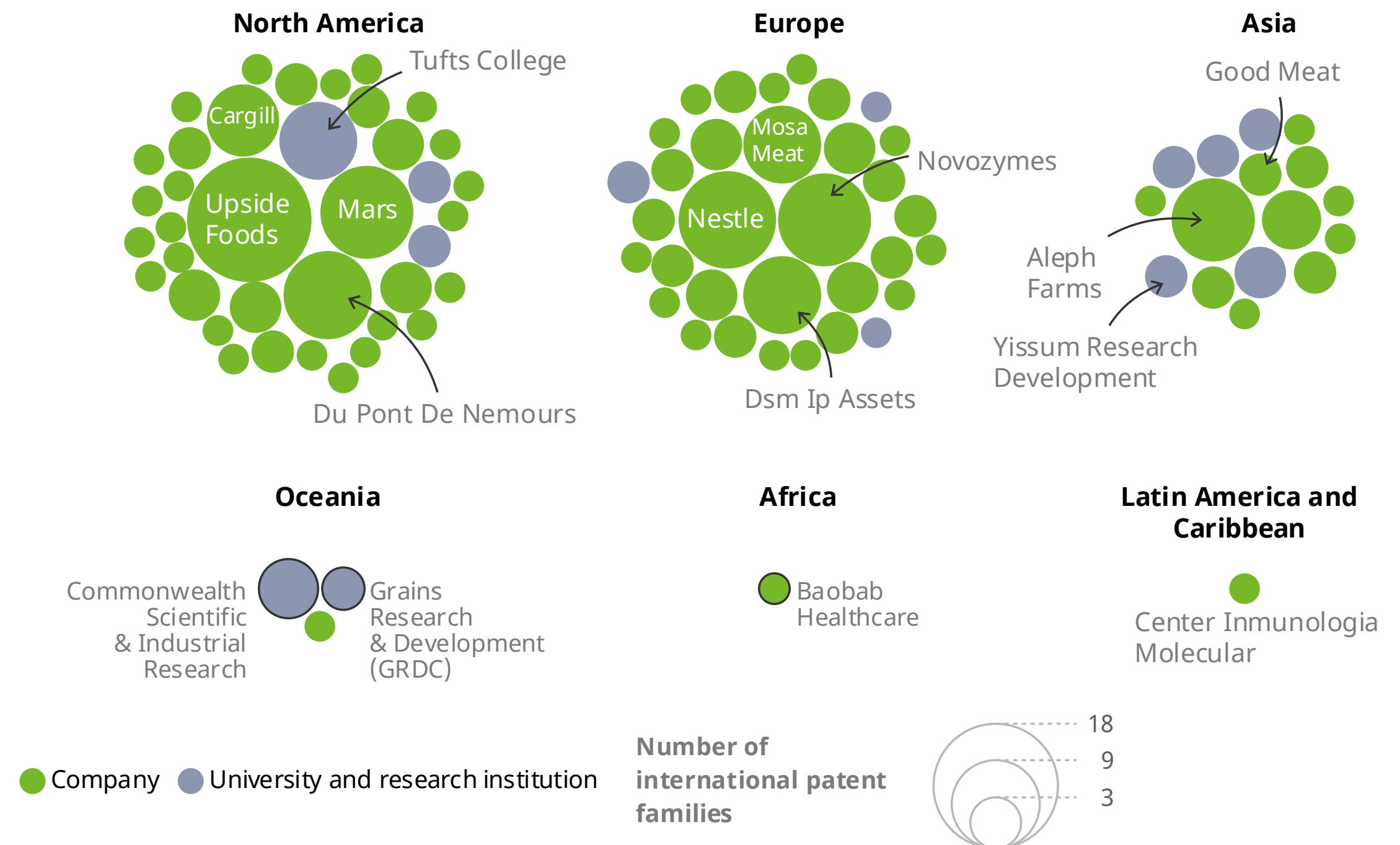
Case study: Alternative nutrient sources for human food

Cell-based meat

Cell-based meat production has seen a significant increase in patent filings since 2019, with a CAGR of 97% from 2017 to 2021.

Industrial entities outnumber academic institutions among the top players, with leading companies including startups like Upside Foods, Aleph Farms, Mosa Meat, and Good Meat.

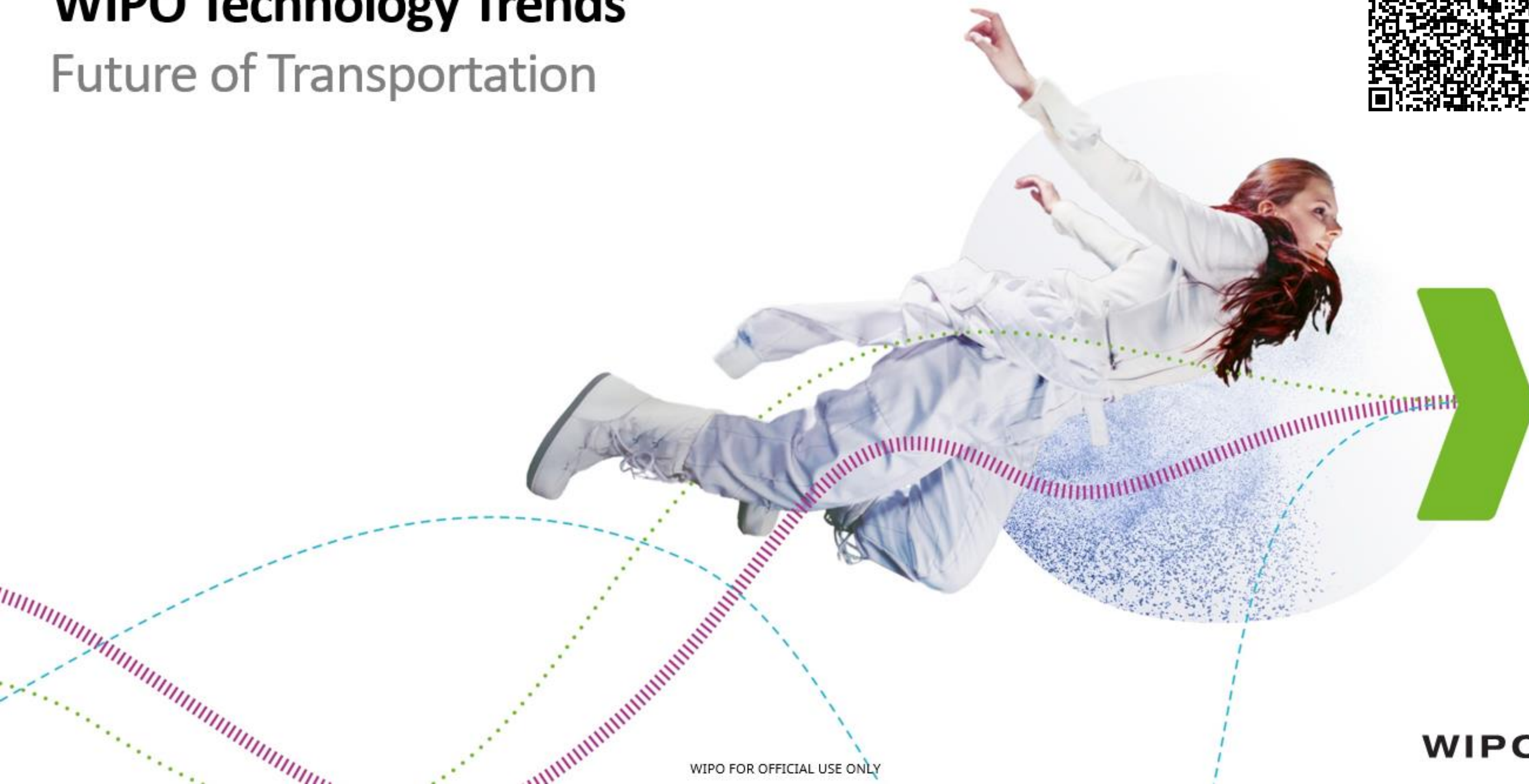
Figure 5.5 Patent applicants in the cell-based meat field

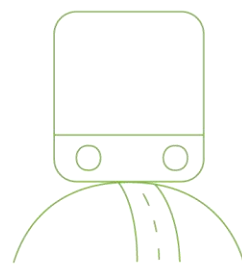


Note: The data statistics are based on the number of international patent families published since 2004.
Source: WIPO, based on patent data from Orbit Intelligence (Questel), March 2024.

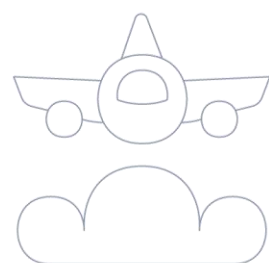
WIPO Technology Trends

Future of Transportation

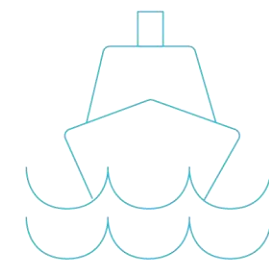
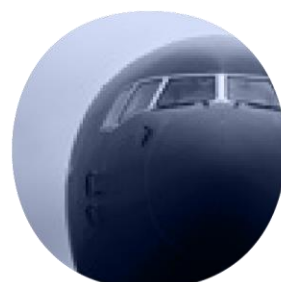




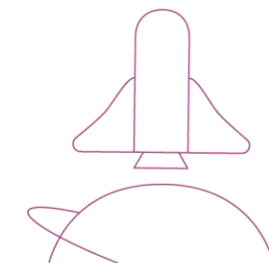
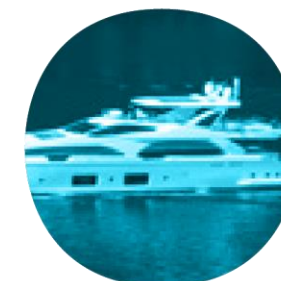
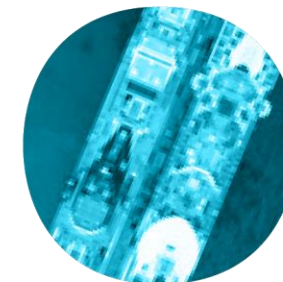
Land transport



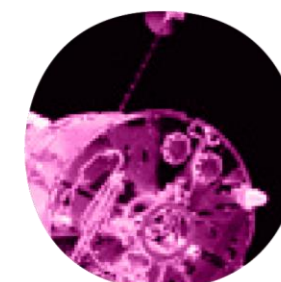
Air transport



Sea transport



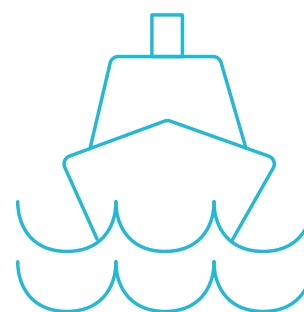
Space transport



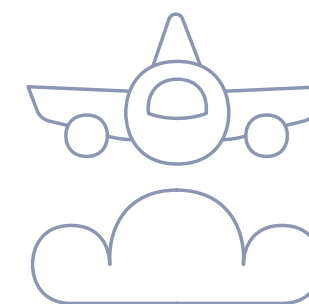
4 transport modalities



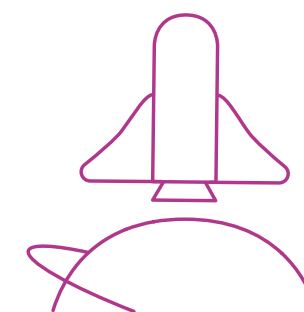
Land



Sea



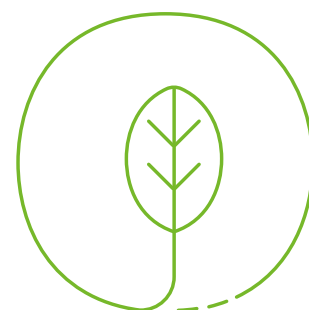
Air



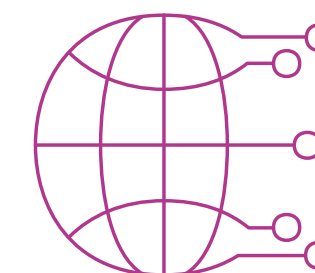
Space

Transport

2 megatrends



Sustainability

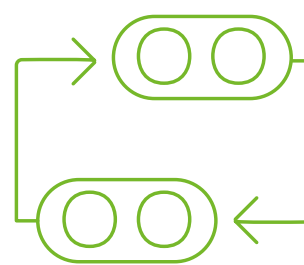


Digitalization

4 technology trends



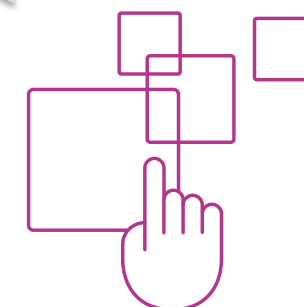
Sustainable
Propulsion



Automation
and Circularity

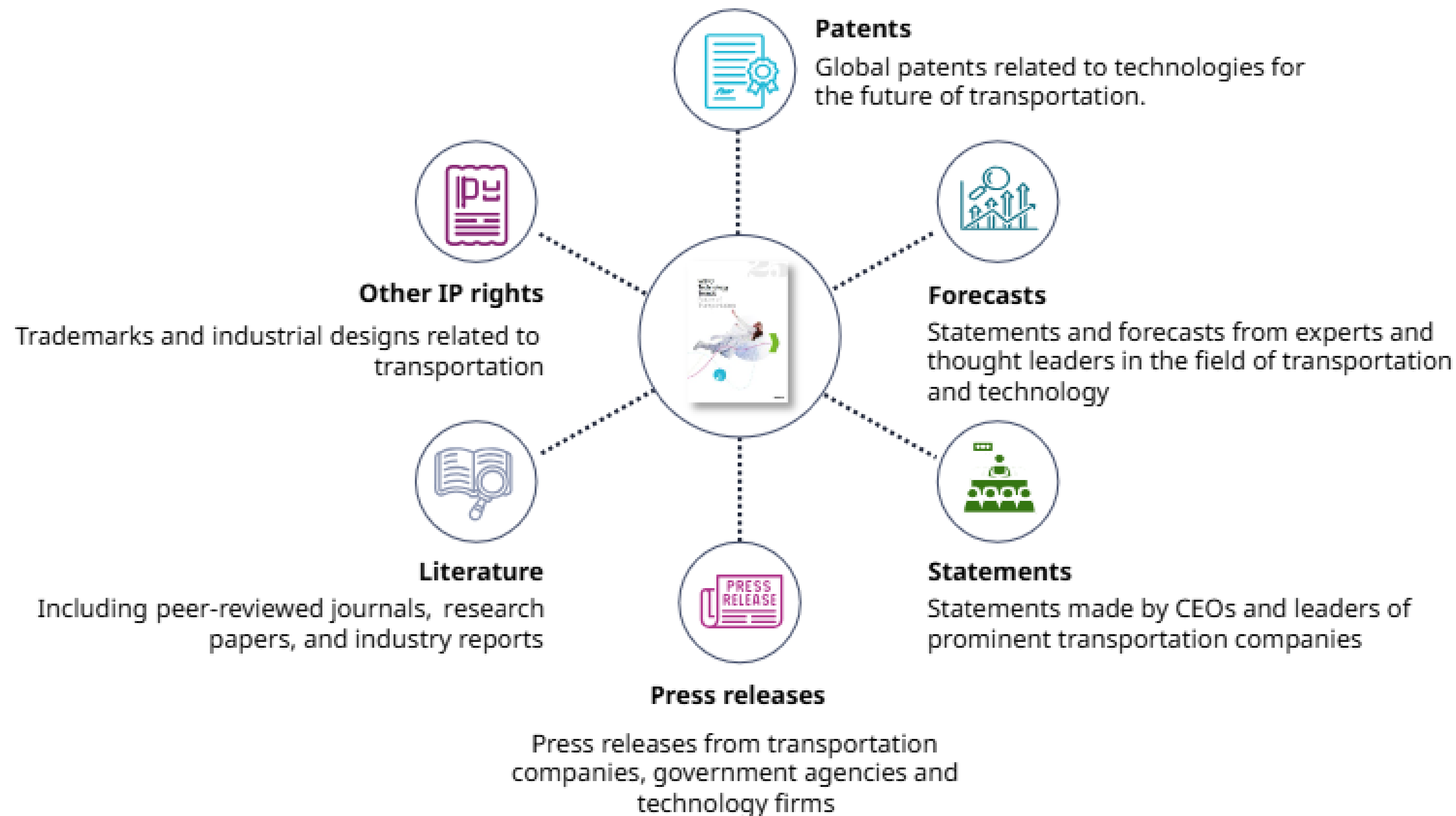


Communication
and Security



Human-Machine
Interface

Technology



Future of Transportation

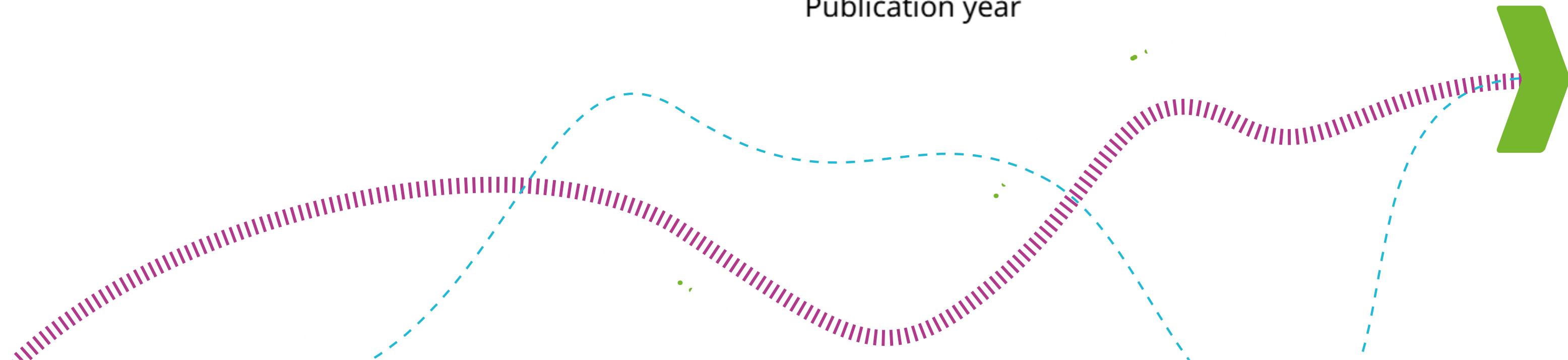
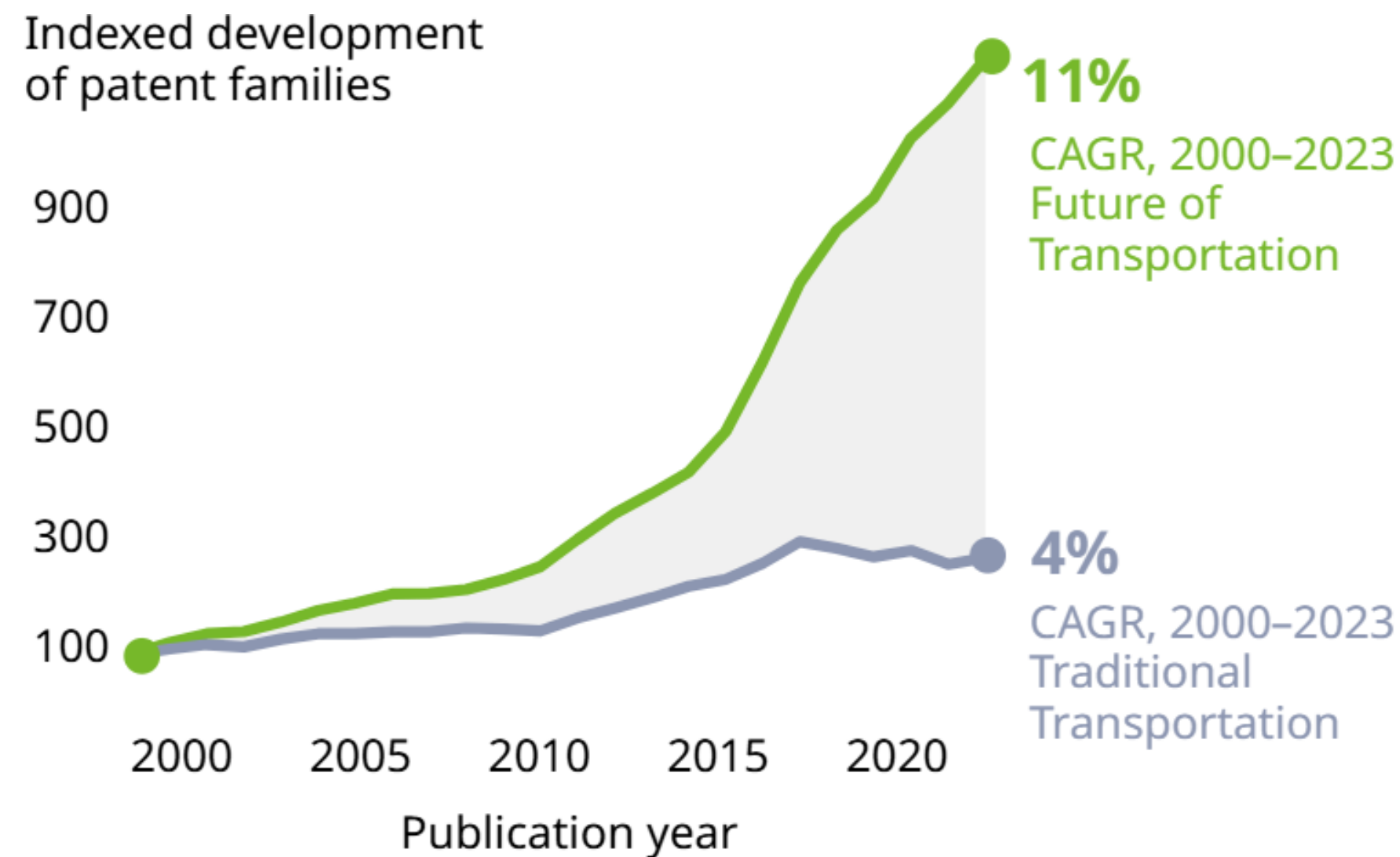
1.1M+

Inventions (Patent families) published, 2000-2023

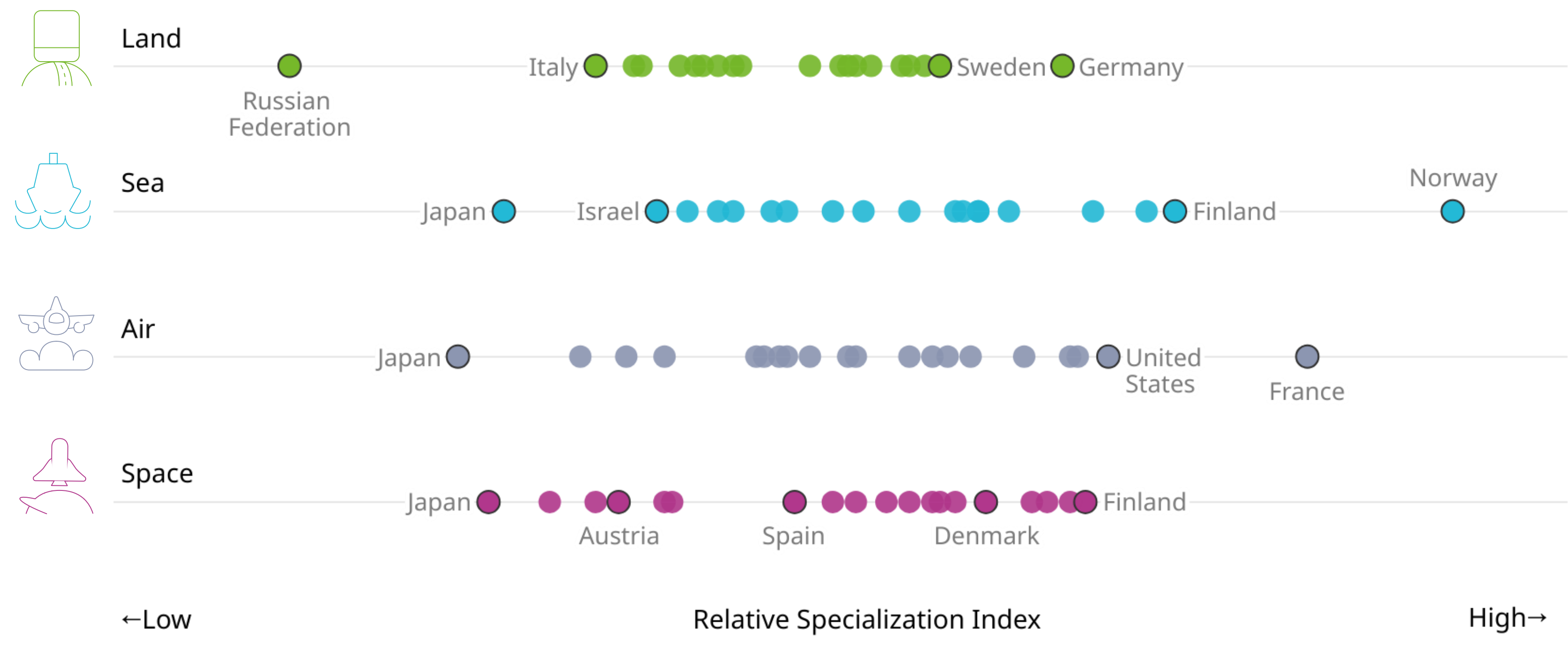
11% ↑

The number of patents related to the future of transportation has grown at a compound annual growth rate (CAGR) of nearly 11%.

In comparison, patents in traditional transportation have grown at a rate of only 4% over the same period.



Pockets of specialism



Trademarks

Number of Filings: **3,725,444**

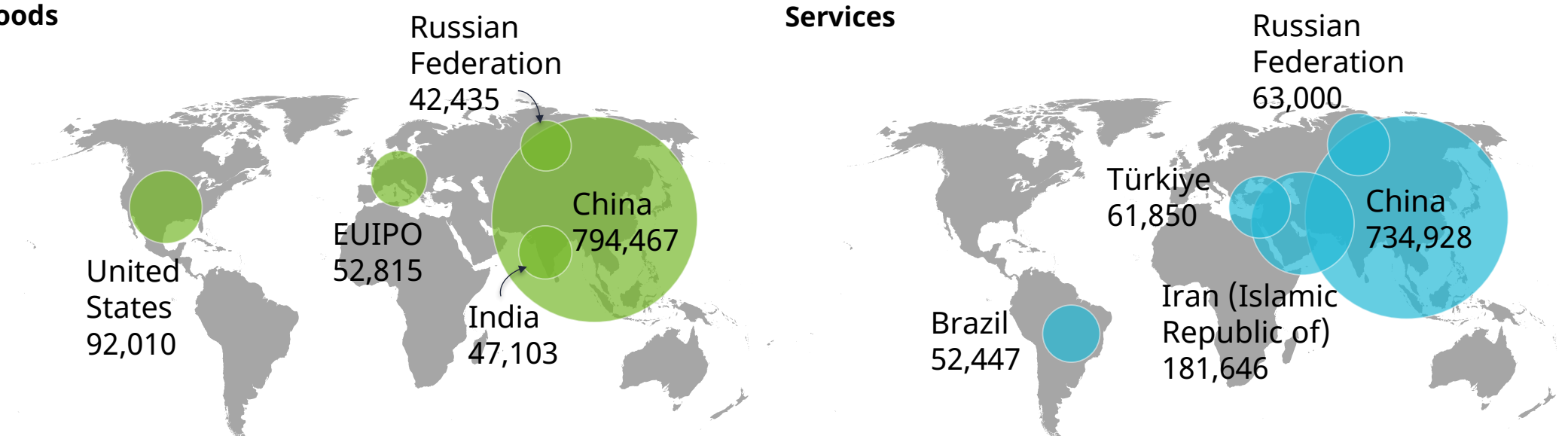
Annual Growth: **5.8%**

Top filing jurisdictions of trademarks related to transportation

Goods

Services

Number of trademarks

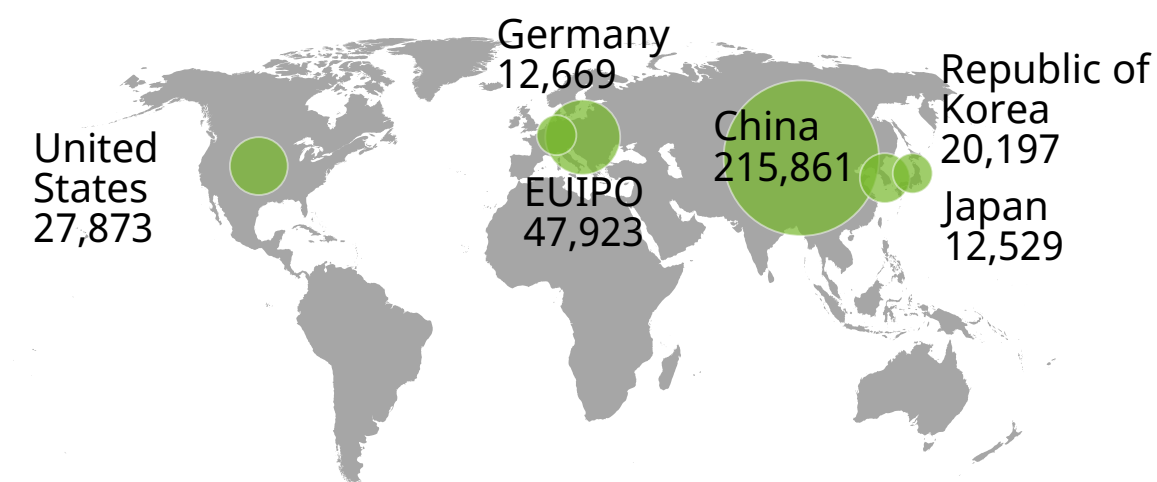


Industrial designs

Number of Filings: **350,721**

Annual Growth: **1.4%**

Protection jurisdictions of transportation-related industrial designs



Envisioning the future



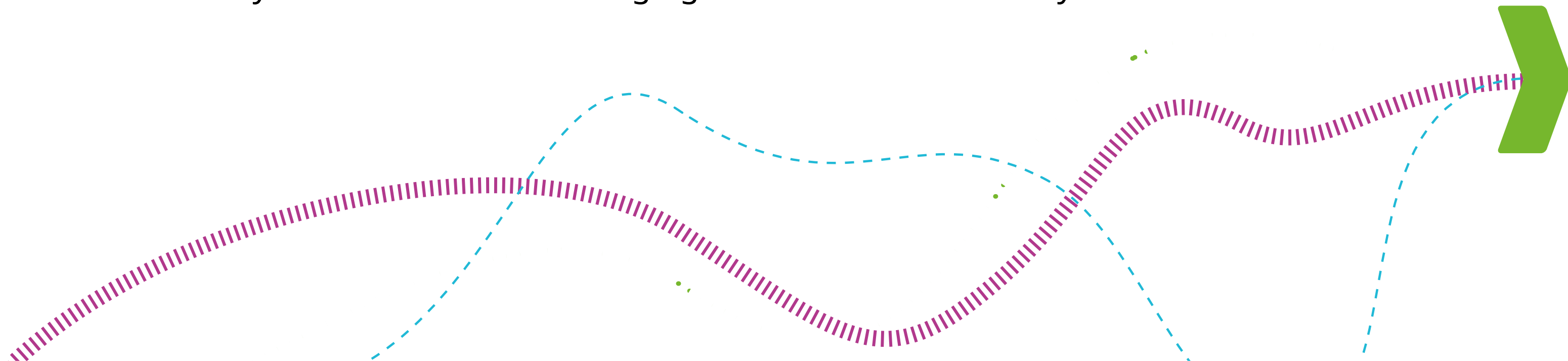
"Dreams in the skyline"



"The changing tides"



"From layovers to liftoff"





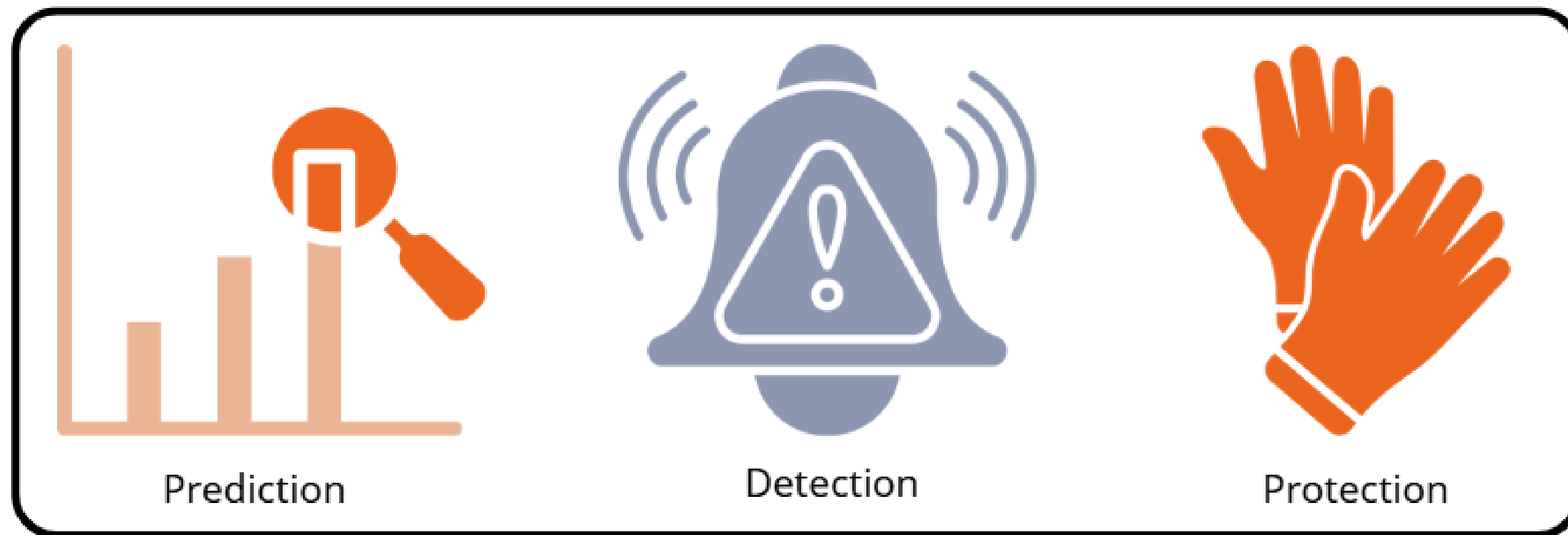
WIPO Patent Landscape Report

Occupational Health and Safety

Access the
report



Categorizing occupational health and safety



Number of inventions

452k



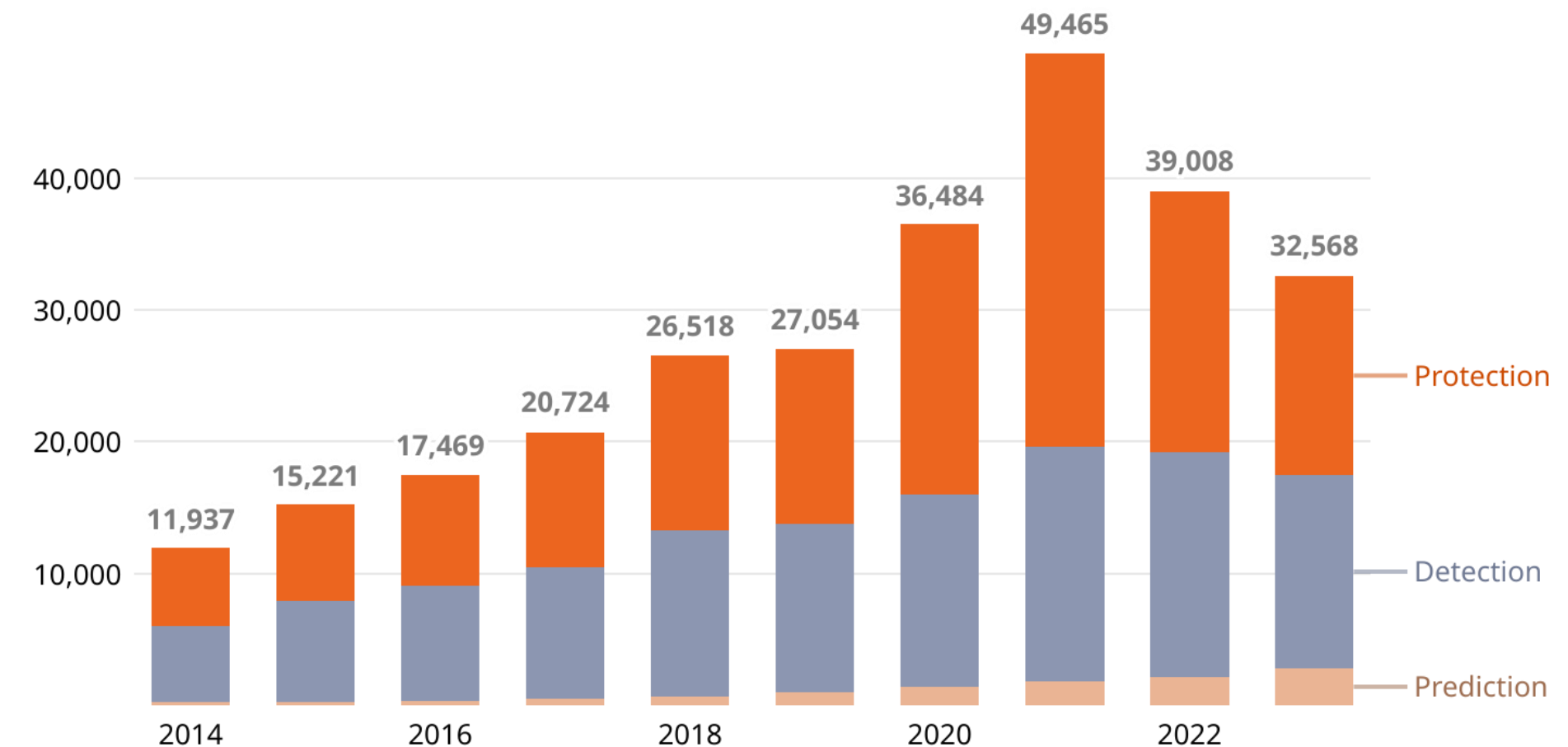
Key Takeaways

Prediction has the fastest growth in OHS innovation (26% annual growth, 2018-2023), outpacing Detection and Protection.

India and the Republic of Korea are highly specialized in the field, while corporates such as IBM, Huawei, Samsung, Alphabet and Apple are driving OHS advancements.

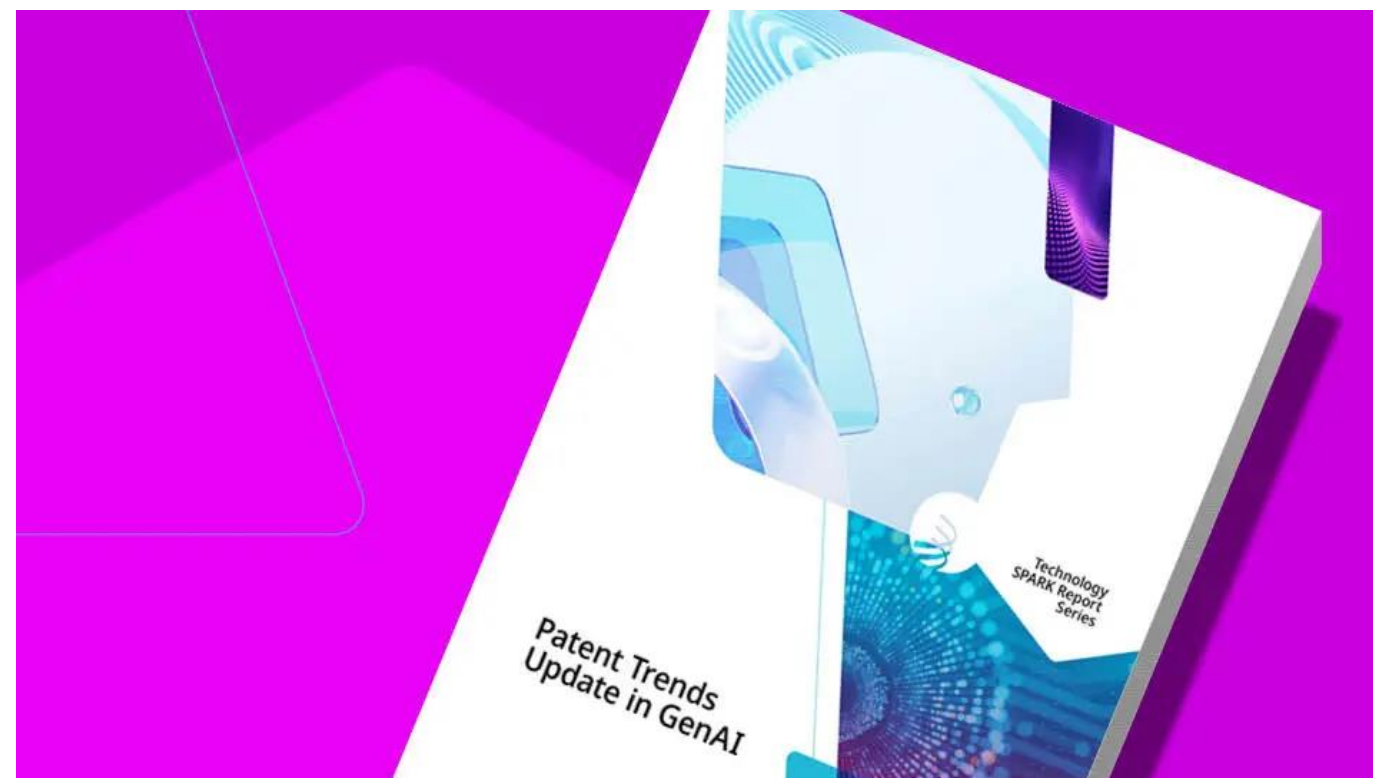
AI-driven Prediction technologies, with rising patent filings, are revolutionizing OHS by forecasting risks using adaptive data analysis.

IoT sensors and VR training enhance Detection and Protection, improving real-time monitoring.



Source: WIPO, based on patent data from Orbit Intelligence (Questel), December 2024

Recent works



Upcoming work

WIPO SPARK:

Patenting in Deep Science
Startups and Spinouts

Launch date: October 2026



Thank you

IP.analytics@wipo.int



Lots more to explore
on our WIPO webpages!

