## CIPHER

## **Global Innovation Report**

A breakdown of the world's inventions and activity by technology

In our look across global innovation activity, we set out some basic questions that we wanted to answer:

- How does the technology split look across all current innovations?
- What are the specific technology areas that look positioned for a continued high pace of innovation investment?
- Who are the top owners of inventions in high-growth tech?

In an attempt to provide answers and insight, we classified the world's inventions (as represented by published patents) into discrete technology areas, and put an analytical lens over the full set.

The technology areas are bundled into what we call the **Universal Technology Taxonomy (UTT)** which supports data exploration to answer questions like the above.

The UTT also has a whole range of intelligence which assists with benchmarking, competitor analysis, and investment activity.

With relative ease, the UTT figures out innovation leaders and laggards across certain themes. For example, it can pick out which companies are most actively innovating in sustainable development technologies.

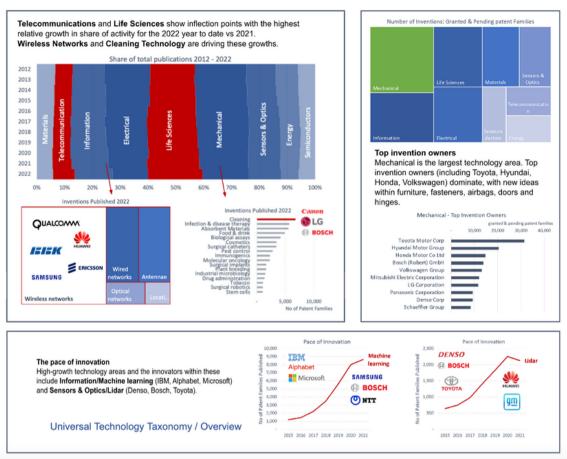
Note: We estimate that there are approximately 25 million protected inventions (currently granted, or pending patent families) registered in territories across the world. If we exclude inventions that are registered in China only then the number drops to 7.9 million. We are specifically looking at this set of 7.9 million assets, disregarding patent families that only include grants or applications in China and nowhere else.

This exclusion is because:

- There are significantly lower barriers to entry for China-specific filings as against other territories;
- Cipher believes that if the invention has value or real merit, then it will most likely be filed in multiple territories by the owner to protect future associated revenue in key markets (such as the US and Europe).

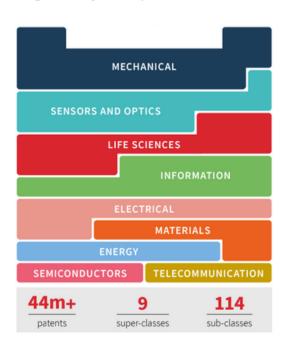


## **Key messages:**



## **Universal Technology Taxonomy**

The first taxonomy to provide consistent and objective analysis of patented technologies owned by all companies globally.



Airbags Bearings Clutches and brakes Conveyors Cutting tools Doors Drills Fasteners Furniture Haptics Haptics Locks Molding Munitions Pipes Pumps Robotics Steering Suspension Transmissions Valves Wheels and tires 3D printing AR and VR Blockchain Engineering software Gaming Image processing Machine learning Printing Scanning Scanning Security Social media Speech recognition Storage Streaming Ul eCommerce	Biometric sensors Fluid sensors Gaze sensors Image sensors Lasers Lenses Lidar Magnetic sensors Pressure sensors Projection Radar sensors Radiographic sensors Spectrometry sensors Touch sensors Ultrasound sensors	Absorbent materials Biological assays Cleaning Drug administration Food and drink Immunogenics Industrial microbiology Infection and disease therapy Molecular oncology Pest control Plant breeding Stem cells Surgical catheters Surgical robotics Tobacco
	ADC and DAC Amplifiers Audio transducers Cables Capacitors Connections Displays Inductors Lighting Motors	Chemicals Coatings Fabrics Gases Glass Insulation Liquid processing Packaging Polymers
	PCBs Resistors Switches Batteries Fuel cells	Lithography Memory Processors Substrates Transistors
	Gas turbines Hydroelectric Nuclear Photovoltaics Piston engines Wind turbines	Antennae Location and satellite Optical networks Wired networks Wireless networks

