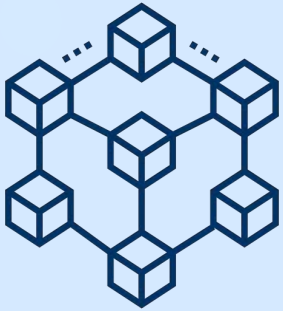
BLOCKCHAIN IN THE AUTOMOTIVE AND LOGISTICS SECTORS

PRESCOUTER

June 2021



The use of blockchain technology offers a clear impact to the profitability of companies in the automotive and logistics markets and will be a source of competitive advantage for those companies that can incorporate this technology throughout their organization.

Blockchain solves age-old questions of trust, allowing reliability on the outputs of a system without any intermediary or mediating entity. Blockchain technology simplifies and speeds up processes, reduces risks, and increases transparency and trust between parties. Hence, implementing blockchain can decrease costs by speeding up processes while guaranteeing security and transparency of transactions.

In this Intelligence Brief, we cover the potential benefits of adopting blockchain and the reasons why companies may be hesitant to adapt the technology. We specifically look at where blockchain can be implemented throughout automotive and logistics value chains, along with examples of various blockchain technology providers and the companies at the forefront of the trend of blockchain adoption within the automotive and logistics sectors.

NOTED BENEFITS OF BLOCKCHAIN INCLUDE

Cost reduction of up to 85%

Revenue increase of over $100B + 400% in new customers

Blockchain has the potential to drastically lower costs and increase revenue by addressing critical issues and supporting new growth opportunities.

Automotive

70% blockchain impact on cost reduction side

Reducing fraud

Transparent lifecycle

Speeding up processes

100B euros in new revenues from blockchain applications

New business models from consumer data

Speeding up design process

Logistics

Reduce cost of documentation by 85%

Reduce risk of loss theft damage of bill of lading to 0

New functionalities enable high growth for players

Up to 400% increase in new customers

Up to 1200% increase in customer spending

According to one estimate from the World Economic Forum, reducing supply chain barriers to trade could increase global gross domestic product (GDP) by nearly 5% and global trade by 15%.

The unique characteristics of blockchain make this technology subject to study under several theoretical and practical possibilities in addition to those that are more predictable, such as finance and computer science.

Economy

- Reduction of transaction costs
- Transformation of production and value distribution

Sociology and philosophy

- Technologies considered disruptive can modify the configuration of social reality

Law

- Social contracts
- Legal implications of transactions made based on blockchain

Business administration

- New business models
- Governance

Despite all of these benefits, many companies still struggle with making the decision to adopt blockchain and implement the technology.

A 2018 Deloitte report revealed that companies have difficulties understanding the appropriate approach to developing blockchain solutions. Hence, although blockchain has high potential to reduce operational costs, integration **requires significant changes in established processes**, generating risks and additional costs.

Building a blockchain solution from scratch may not be the best option for every business. Searching for already developed solutions might reduce the learning curve and fit a company's needs in a safer, faster, and more controlled environment.

Why companies don't implement blockchain solutions

They have to change established processes	Governance issues
	Harm to existing operations
Lack of understanding of where blockchain technology can be useful	Using blockchain technology with low benefits
	Creating additional complexity
Necessity of having a strong technical team	Blockchain is constantly developing
	High costs to small firms

The strategies and information provided here are intended to help companies in the automotive and logistics markets understand the benefits of adopting blockchain technology in their industries and are an example of the insights clients rely on PreScouter for.

CUBIC · GM · MICHELIN · Pratt & Whitney · VOLVO · AK Steel · faurecia · RioTinto · BOMBARDIER · NASA · Coca-Cola · Lhoist · VISA

PreScouter's Proven Track Record

500+	4000+	150K+
Clients Worldwide	Challenges Conquered	Hours of Research

"We have actually started speaking with a few potential collaborators - all within 12 weeks of working with PreScouter. So to me, the investment was incredibly well-spent."

Naveen Nair, Director of Engineering, Strategic Partnerships

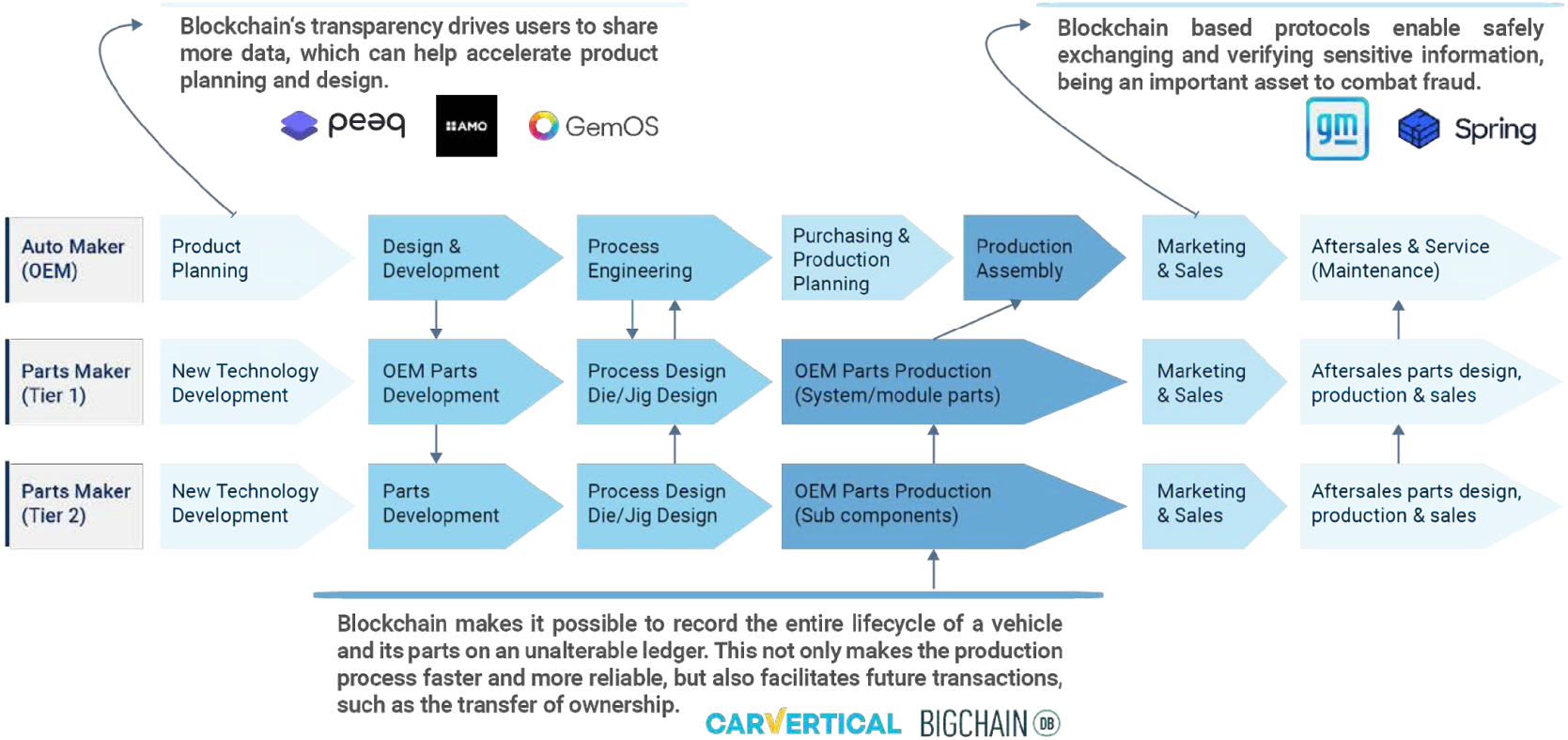
Baker Hughes

PreScouter's research consultancy has helped drive strategic planning and specific solution development decisions for some of the most sustainable and prominent companies in the world, for years.

1. Identifying development partners experienced in blockchain technology to pilot new use cases and test the impact on the organization
2. Assessing the benefits of blockchain technology for specific applications and business units
3. Reviewing and ranking competitor activity in blockchain technology to determine areas of opportunity and differentiation

The impact of blockchain on the automotive industry

The Value Chain for the Automotive Industry



There is a market potential of more than 100 billion euros for car manufacturers to generate profit from blockchain applications, especially in the areas of mobility, communication, and security.

New consumer behaviors: Consumers are more willing to share data in order to enhance their experiences in services and mobility, **opening up new potential business models** for auto manufacturers and suppliers.

MOBILITY

Ownership transfer: By validating the exact time an action is taken **without the need for an intermediary**, blockchain is a suitable solution for property status change.

COMMUNICATION

Traceability: Every vehicle part linked to a unique identity makes it easy to track and **to verify authenticity of components**.

SECURITY

Mobility

Peaq is the provider of a blockchain technology platform developed in house and sold to groups of megafirms according to a Software-as-a-Service model. Peaq's blockchain technology is enabling clients to reduce costs, create new revenue streams, and automate processes while making their systems faster and more secure.

Peaq offers a number of different solutions, including:

EV Charging Platform

Peaq signed a Memorandum of Understanding (MoU) with a **leading German-based automotive manufacturer**. The platform involves making the next generation of cars fully Distributed Ledger Technology (DLT)-ready from the moment they leave the factory, while dramatically decreasing range anxiety for EVs industry wide.
Development stage: *In the mass production phase*

Lifecycle Management

This technology makes it possible to have each vehicles' **entire lifecycle transparently recorded** on an unalterable ledger. By tracking a vehicle's life journey on Peaq as a digital twin, all parties involved can trust usage and ownership records, preventing fraud and enabling pay-per-use insurances, among other uses.
Development stage: *Under development*

Communication

GM Financial announced a partnership with blockchain startup Spring Labs in 2019. The startup developed a protocol that allows the exchange and verification of sensitive information such as a client's credit history.

The protocol's goal is to help GM Financial **combat synthetic fraud**, the act of using information from multiple identities and then combining it to create a fake identity.

Security

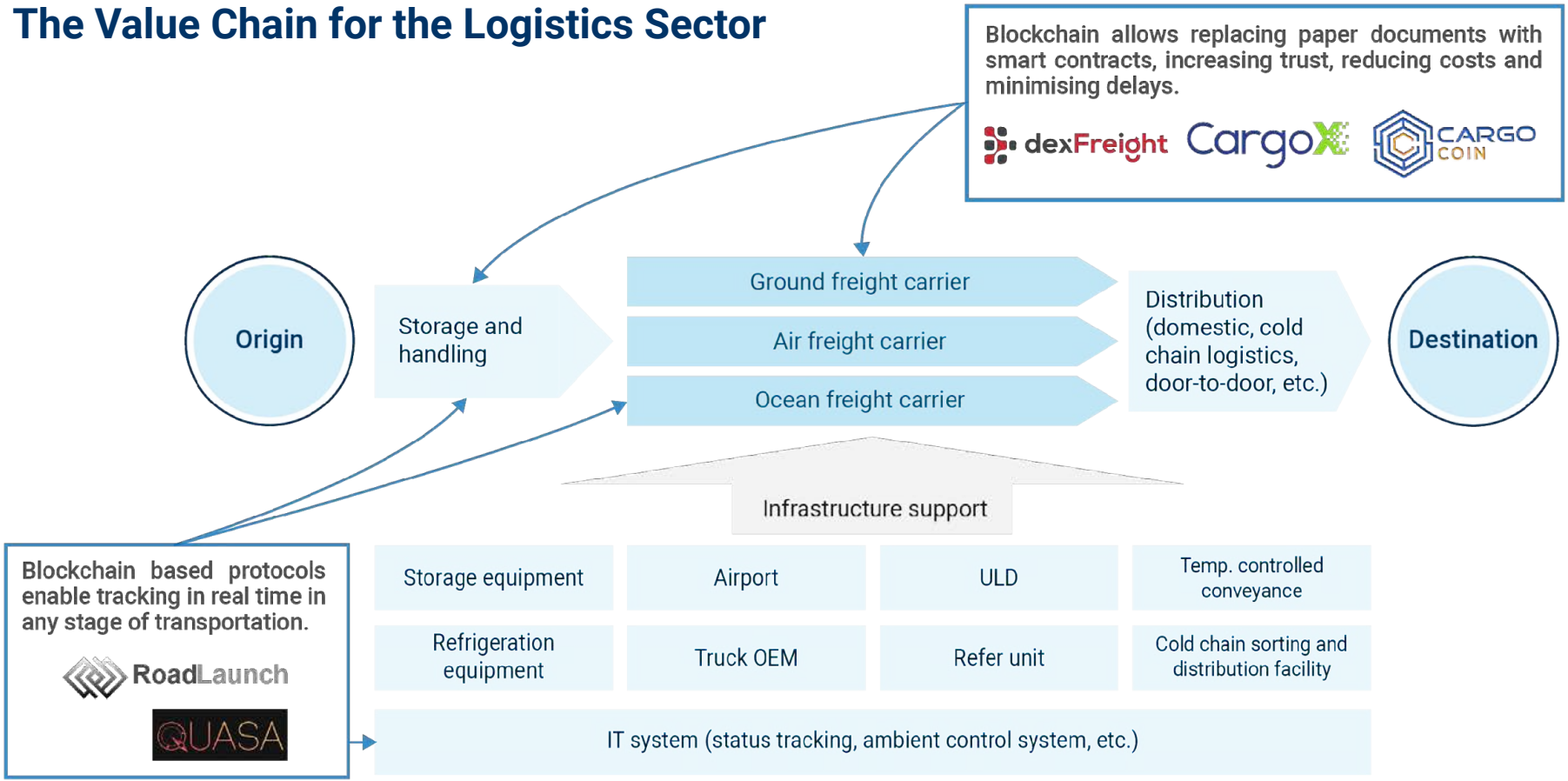
Porsche has paired with the startup XAIN to implement blockchain technology in their vehicles. The blockchain tech would allow users to unlock their vehicles with an app, as well as provide traffic recording data, real-time notifications, and access granting. XAIN is also working with Porsche to enhance the autonomous car driving experience with AI and distributed systems.

The goal for the coming years is to test the potential serialized production, as well as to expand the application areas.

Automotive companies investing in blockchain today include:

The impact of blockchain on the logistics industry

The Value Chain for the Logistics Sector



Blockchain technology is one of the most important innovation trends in the logistics sector.

Traceability: The logistics sector involves multiple stakeholders, and this diversity makes the supply chain very complex. Blockchain **simplifies and brings transparency to transactions**.

TRACEABILITY

Tracking: One of the areas that can reap the greatest benefits from blockchain technology, freight **tracking can be done in real time at all stages of transportation**.

TRACKING

Smart contracts: Traditional contracts need to be verified and validated by third parties, generating high processing costs. Smart contracts allow for reliable transactions without third parties, **minimizing costs and speeding up the process**.

SMART CONTRACTS

Traceability

NeuroChain is a France-based company that combines blockchain technology with machine learning. The platform is designed for traceability and provides supply chain transparency through private or public blockchain networks.

The NeuroChain Tracer allows complete asset visibility for all stakeholders through:

- Smart contracts
- Asset management
- Reliable data
- Security

Image Source: NeruoChain

Tracking

CargoX is a Slovenian startup that developed a blockchain-based solution for containerized ocean freight. The startup focused its efforts on an electronically issued Bill of Lading solution that could be transferred with the help of an ultra-secure and reliable public blockchain network in just a few minutes instead of days or weeks. **The chances of loss, theft, or damage to the Bill of Lading have been drastically reduced to almost zero**.

In addition, **the startup managed to reduce the cost of the documenting process by 85%** compared to the estimated normal price for the traditional paper document to be transferred via courier services worldwide, as is the current practice.

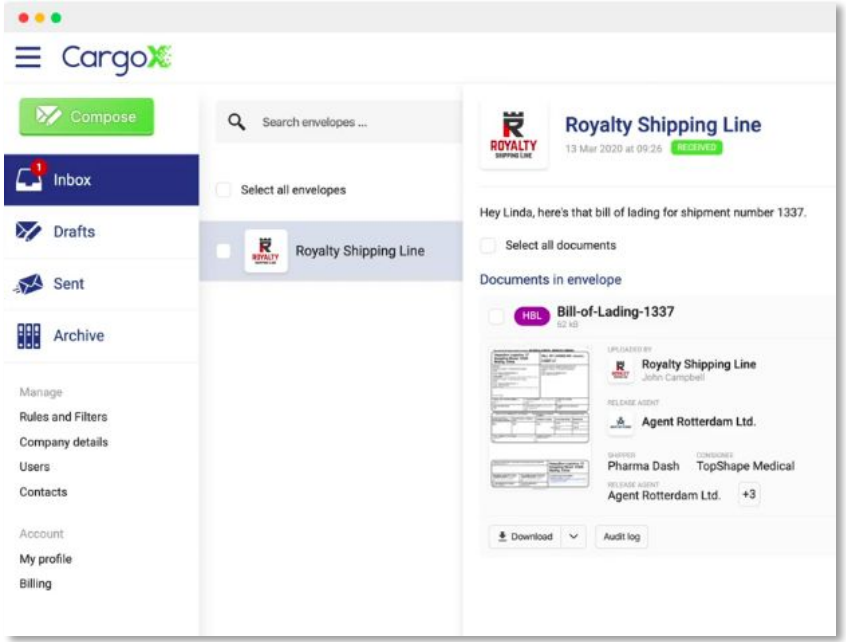


Image Source: CargoX demo video

Smart contracts

dexFreight is a startup focused on **increasing efficiency and reducing the cost** of road transport in the United States domestic market, as a first phase. The logistics area is not only fragmented, but also has many middlemen with no added value, with huge back-office costs to balance demand and supply. Moving a shipment involves several companies that need transparency and visibility of the origin of documents, milestones, and other activities until the shipment is delivered and settled.

dexFreight currently uses hybrid cloud and blockchain architecture to manage contracts between the parties. The origin, milestones, reputation, and settlement related to shipment are managed through smart contracts. In 2020, dexFreight registered a **389% increase in the number of new carriers and a 1153% growth in truckload freight spend**.

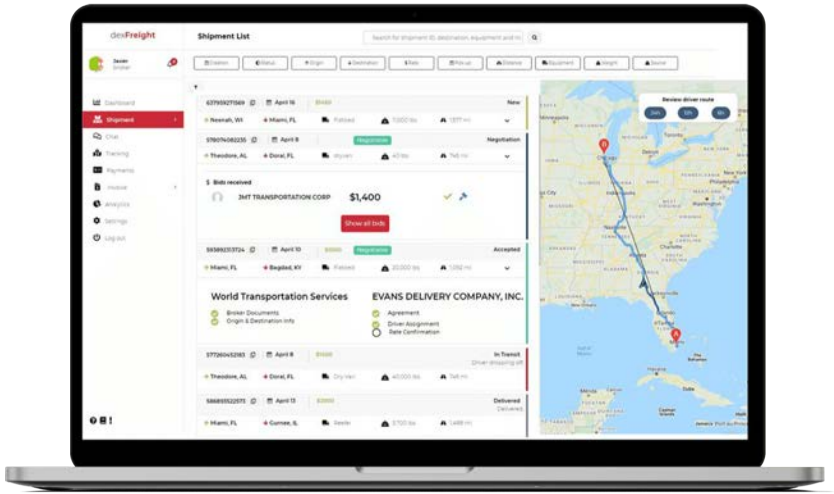


Image Source: DexFreight

Companies investing in blockchain for logistics today include:

Looking Ahead

Beyond process efficiency and cost reduction, blockchain allows the exploration of new services and solutions. Most automotive and logistics companies recognize the potential of blockchain to make processes more efficient and reduce transaction costs. However, the **potential of blockchain technology to produce new solutions with great added value is not yet fully explored (no established blockchain platform is targeting these sectors)**, as it depends on adaptations to new models of governance and business, along with cooperation between companies. In addition, there is the opportunity to base protocols on large platforms.

We see blockchain technologies offering additional opportunities for automakers and logistics companies in the following areas:

Increased energy savings and optimization

Easier regulatory compliance

Enhanced security

Identifying new consumer habits

Authors

Sofiane Boukhalfa, PhD

Technical Director

Sofiane leads the high-tech, aerospace & defense, and automotive & logistics practices at PreScouter. For nearly a decade, he has worked with hundreds of F500 and G1000 clients across multiple industries, through which he has developed an expertise in key emerging technologies (such as 5G, IoT, AI/ML, blockchain, energy storage and generation, quantum sensing, and others) and a strong understanding of the associated business ecosystem and drivers pushing these sectors forward (e.g., key players and trends, roadblocks to commercialization, etc). Sofiane's strategic insights have ranged from technical due diligence for acquisition targets to identifying relevant markets for newly developed products based on emerging technologies and assessing market penetration strategies. Sofiane holds a PhD in Materials Science and Engineering from the Georgia Institute of Technology, where his research focused on nanotechnology and energy storage.

Alana Lacerda

Researcher

Alana is a doctoral student at the Business School of the Federal University of Rio Grande do Sul, Brazil. She develops her research on institutional logics, establishing an exploratory proposition on the role of technology among institutional orders. Her study seeks to analyze blockchain technology in government projects in Brazil. Her interest in government projects comes from her experience of over a decade working in the public sector, where she led technology-based management improvement projects.

References

- https://www.gartner.com/en/newsroom/press-releases/2019-07-03-gartner-predicts-90--of-current-enterprise-blockchain
- https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/blockchain-beyond-the-hype-what-is-the-strategic-business-value
- http://www3.weforum.org/docs/WEF_SCT_EnablingTrade_Report_2013.pdf
- https://www2.deloitte.com/content/dam/Deloitte/cn/Documents/consumer-business/deloitte-cn-consumer-blockchain-in-the-automotive-industry-en-180809.pdf
- https://www.peaq.io/
- https://www.amo.foundation/
- https://enterprise.gem.co/gemos/
- https://www.forbes.com/sites/sarahhansen/2019/02/11/gm-financial-announces-collaboration-with-blockchain-startup-spring-labs/?sh=645bf6a131c9
- https://www.carvertical.com/
- https://www.bigchaindb.com/
- https://www.roadlaunch.com/blockchain/
- https://thecargocoin.com/
- https://www.simon-kucher.com/nl/blog/blockchain-automotive-industry-soon-be-multibillion-dollar-business
- https://www.dexfreight.io/
- https://cargox.io/
- https://www.porsche.com/usa/aboutporsche/pressreleases/pag/?id=479342&pool=international-de&lang=none

Other reports from PreScouter that you might like

The 48V Shift in EVs & Data Centers: Unlocking More Power With Lower Emissions

The Future of Transportation: An Autonomous Landscape

An Overview of Drone & EVTOL Regulations

Engage our network of experts and researchers on your topic.

CONTACT US HERE

About PreScouter

PRESCOUTER PROVIDES CUSTOMIZED RESEARCH AND ANALYSIS

PreScouter helps clients gain competitive advantage by providing customized global research. We act as an extension to your in-house research and business data teams in order to provide you with a holistic view of trends, technologies, and markets.

Our model leverages a network of 3,000+ advanced degree researchers at tier 1 institutions across the globe to tap into information from small businesses, national labs, markets, universities, patents, startups, and entrepreneurs.

CLIENTS RELY ON US FOR:

Innovation Discovery: PreScouter provides clients with a constant flow of high-value opportunities and ideas by keeping you up to date on new and emerging technologies and businesses.

Privileged Information: PreScouter interviews innovators to uncover emerging trends and non-public information.

Customized Insights: PreScouter finds and makes sense of technology and market information in order to help you make informed decisions.

500+ CLIENTS WORLDWIDE

5,000+ RESEARCH REPORTS CREATED

150,000+ HOURS OF RESEARCH COMPLETED FOR CLIENTS