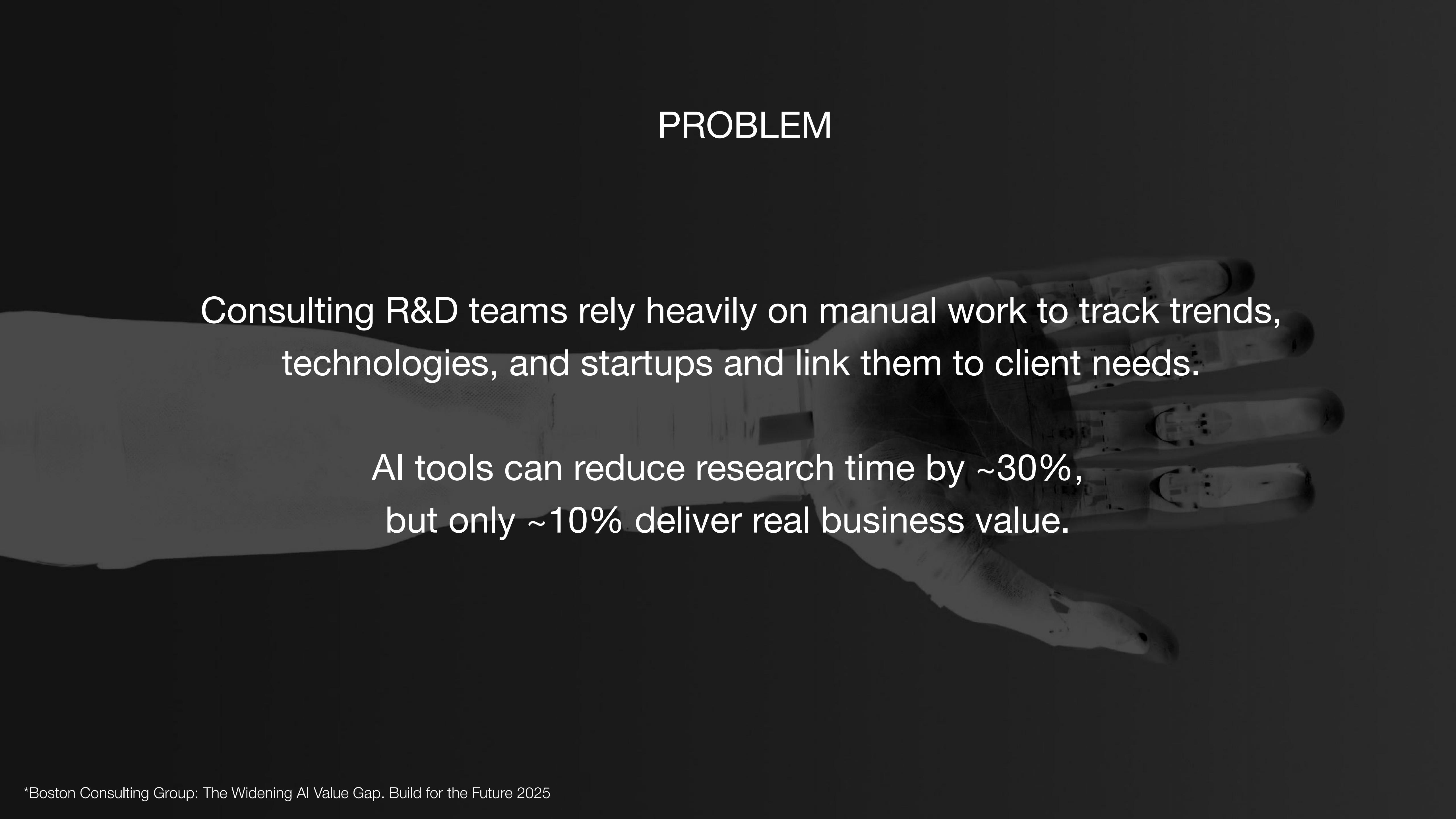


INNOVATION INTELLIGENCE SUITE

This project explores how AI/ML can
accelerate insight generation for R&D teams

Developed as a Data Science + AI Bootcamp capstone project (2025)

PROBLEM



Consulting R&D teams rely heavily on manual work to track trends, technologies, and startups and link them to client needs.

AI tools can reduce research time by ~30%,
but only ~10% deliver real business value.

PERSONA NARRATIVE

- Innovation Strategy Consultant (Automotive)
- Works with advising automotive clients on problems and opportunities for innovation
- Needs faster, automated intelligence to turn complex signals into actionable recommendations



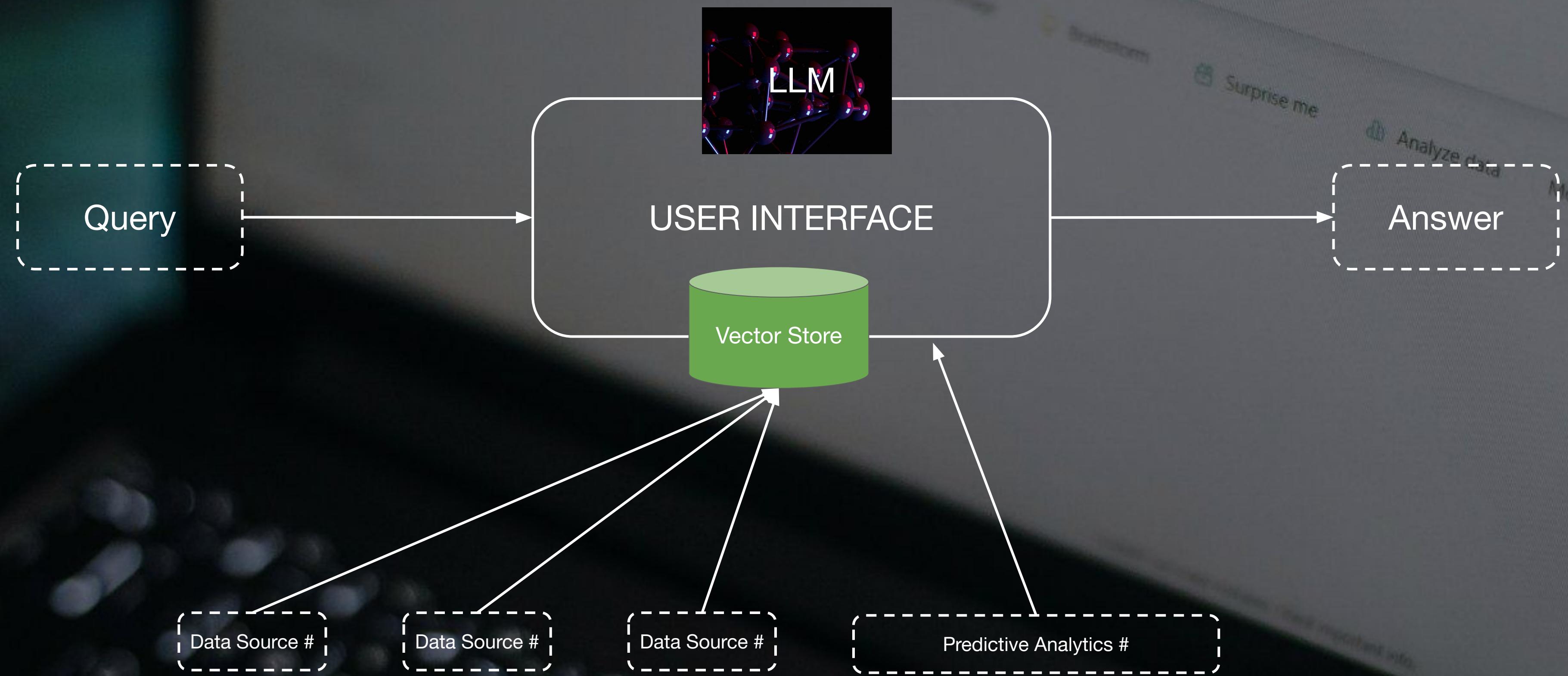
SOLUTION

We built an Innovation Intelligence Suite MVP that combines intelligent Retrieval-Augmented Generation (RAG) with tech maturity prediction to help R&D teams identify what's next in automotive tech (B2B2C) - **faster and with greater precision.**

SOLUTION FEATURES

- **Intelligent query processing** that classifies and routes requests to appropriate modules
- **Multi-source synthesis:** Query and summarize automotive technology documents (18,000+ chunks)
- **Domain insight retrieval:** Get insights on specific innovation topics from research papers, tech reports, startups and patent data (2025)
- **Transparent attribution:** Source citation with relevance scoring
- **Template-based generation:** Structured answer generation with full transparency
- **Trend analysis:** Topic modeling and trend forecasting based on academic and commercial interest (25,000+ research papers and patents, Fraunhofer ISI-inspired)

SOLUTION ARCHITECTURE



SOLUTION DEMO

The screenshot shows a web application running in a Safari browser on a Mac. The title bar indicates the window is titled "localhost". The main content area features a dark background with white text. At the top, it says "Uncover What's Next in Auto Tech" and "Developed as a Data Science + AI Bootcamp capstone project". Below this is a search bar with the placeholder "Your question:" and the query "Which startups work on automotive and autonomous driving?". A section titled "Example Questions" lists categories: "Innovation Intelligence", "Market Insights", and "Predictive Analytics", each with sub-options like "Latest AI Research", "Industry Pain Points", "Academic growth", "Automotive Patents", "AI Agents Development", "Commercial interest", and "Startups in Automotive". An "Answer" section titled "STARTUPS WORKING ON AUTOMOTIVE AND AUTONOMOUS DRIVING" lists two startups: "Potential Motors" and "Privacy4Cars", providing details such as location, date, description, and key technology. The bottom of the screen shows the Mac OS X dock with various application icons.

Find me on [Github.com](#)

QR code linking to the GitHub profile.

Uncover What's Next in Auto Tech

Developed as a Data Science + AI Bootcamp capstone project

Your question:

Which startups work on automotive and autonomous driving?

Example Questions

Innovation Intelligence

Market Insights

Predictive Analytics

Latest AI Research

Industry Pain Points

Academic growth

Automotive Patents

AI Agents Development

Commercial interest

Startups in Automotive

Answer

STARTUPS WORKING ON AUTOMOTIVE AND AUTONOMOUS DRIVING

Based on the provided context, the following startups are working on automotive and autonomous driving technologies:

1. **Potential Motors** [Source: AutoTechInsight Automotive Startup Profiles & Tracker]
 - Location: North America
 - Date: 06-Jun-2025
 - Description: Develops and offers a software solution that uses artificial intelligence (AI) to improve the safety and performance of automobiles.
 - Key Technology: AI-powered vehicle control and resilience to changing conditions
2. **Privacy4Cars** [Source: AutoTechInsight Automotive Startup Profiles & Tracker]
 - Location: North America
 - Date: 06-Jun-2025
 - Description: Develops an application software for the automotive ecosystem to delete personal information from vehicles.

SOURCES + KEY INSIGHTS

RAG sources (18.000+ chunks):

- Patents/papers: Lens.org (24k+ documents)
- Reports: WEF, BCG, McKinsey (2025)
- Startups: S&P Global, Seedtable LLC

Predictive model dataset

- 15.861 papers + 8.419 patents (2015-2025):
Lens.org
- Focus: tech x automotive innovation

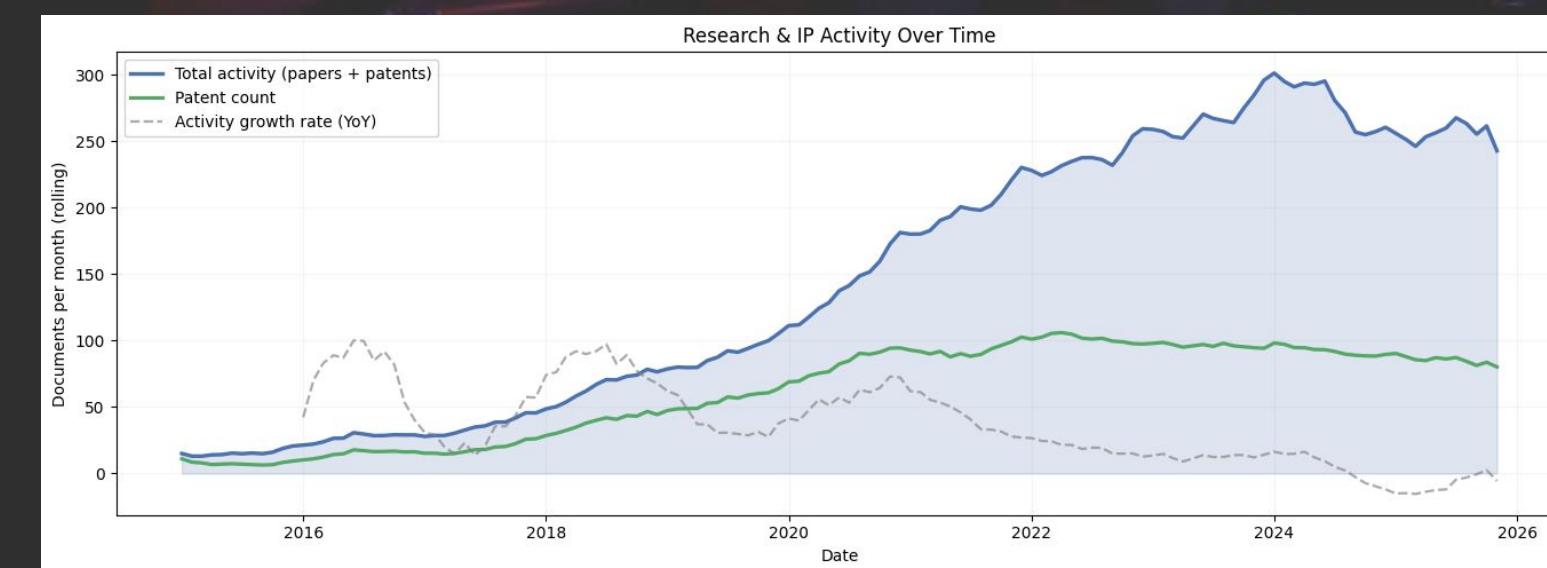
Temporal patterns:

2015-2021 - Rapid growth phase

- Low publication/patent barriers
- High momentum fluctuations

2021-2025 - Maturation phase

- Slower papers (system validation)
- Selective patents (safety cycles)
- Insight: Saturation, not hype



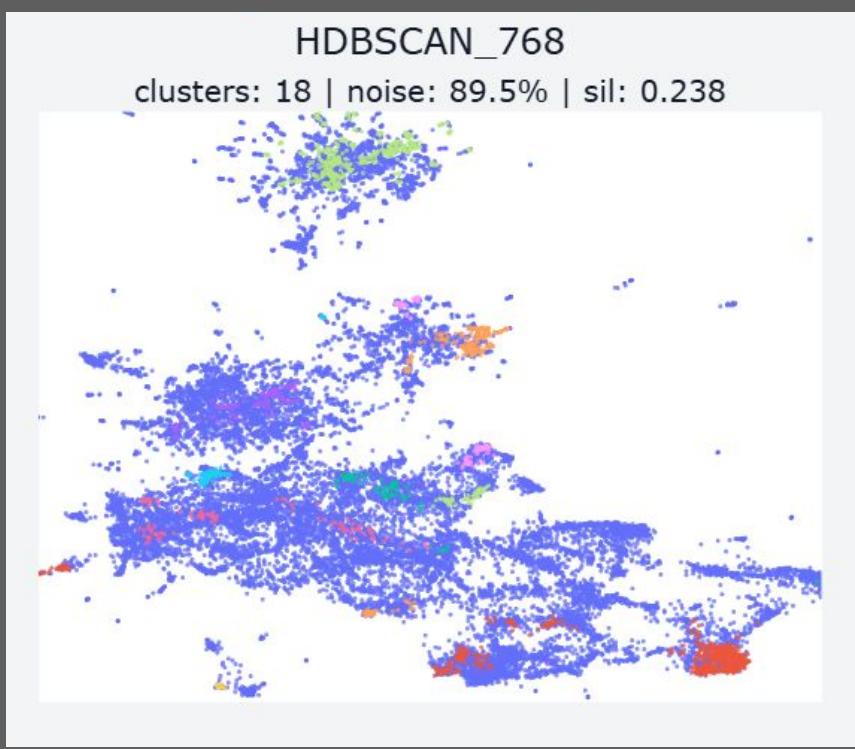
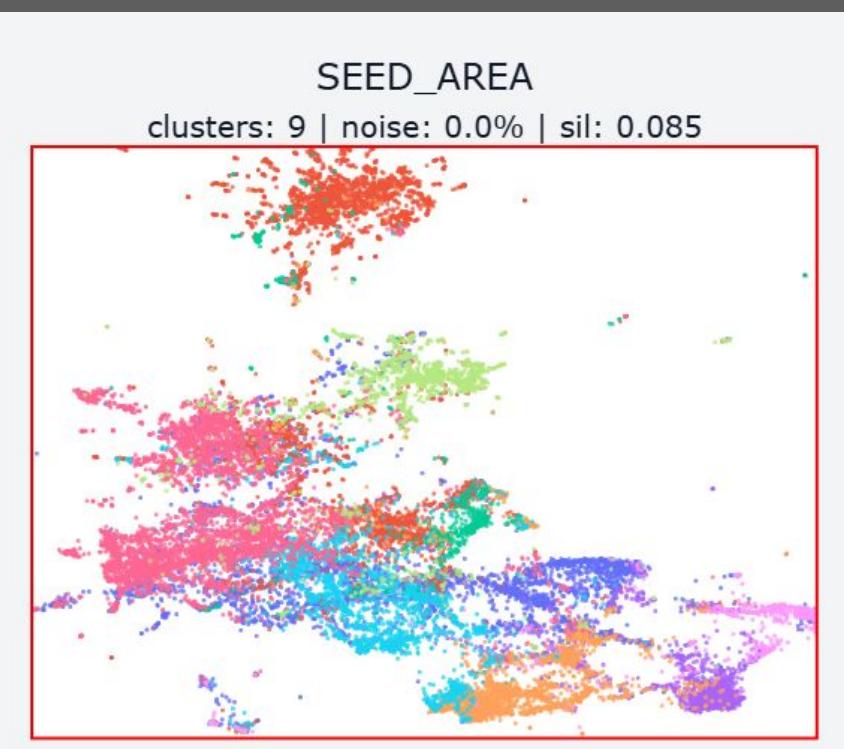
MODELING DECISIONS + RESULTS

RAG optimization:

- TF-IDF → FAISS + Sentence Transformers
- all-MiniLM-L6-v2 embeddings
- Result: Relevance score >0.5 (vs. <0.5 before)

Predictive model:

- Seed-guided clustering (vs. HDBSCAN)
- Maintained temporal consistency
- Cosine analysis: Single-peak = no natural breaks



Outcomes:

RAG Pipeline:

- Fast response + relevant answers
- Source attribution with scores

Predictive Model:

- Domain-validated clusters
- Interpretable time trends

WHAT'S NEXT

Business Evolution:

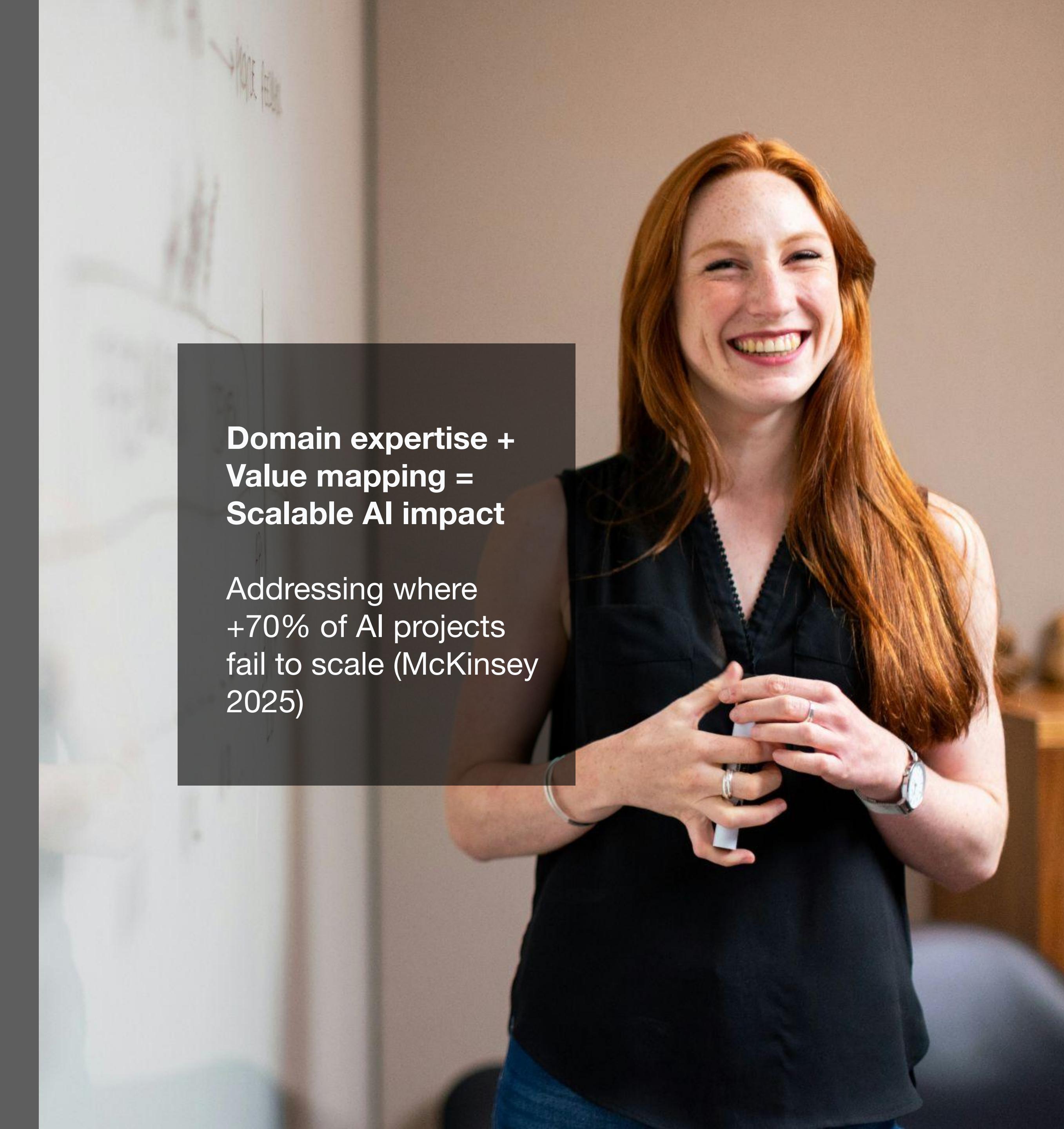
- Product-market fit via R&D focus groups
- Automotive specialization as competitive edge
- Domain specific impact metrics

Technical Advance:

- Specialised LLMs for automotive reasoning
- Multi-modal retrieval & strategic reasoning
- AI agents for strategic workflows (Q&A to tasks)
- Ethics by design

**Domain expertise +
Value mapping =
Scalable AI impact**

Addressing where
+70% of AI projects
fail to scale (McKinsey
2025)



CONNECT WITH THE TEAM



Siri Rääf

Background:
Accounting &
Business
Analytics



Mert Asaroglu

Background:
Vehicle
Development
Engineering + Trend
& Innovation
Research



Timo Wolf

Background:
Innovations &
Product
Development +
HR