



Grid Dynamics Solutions

# Search & Recommendations

[www.griddynamics.com](http://www.griddynamics.com)

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# Thought Starters: Search & Recommendations



Connect customers with products they love through semantic search



Recommend products with awareness of artistic and fashion styles

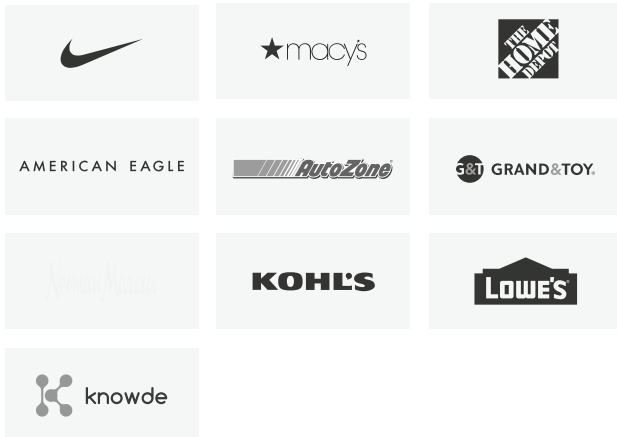


Search semantically and personalize results using customer behavior and real-time session intent

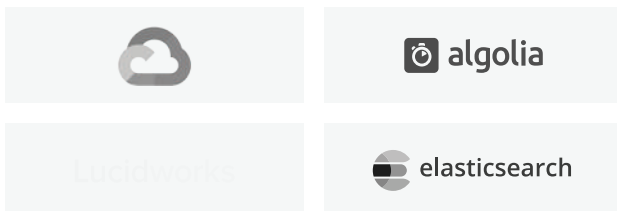


Improve search & recommendations engagement, click-through rates, average order value and order conversion

## Some of our clients in the area of search & recommendations



## Our partners



# Solutions: Search & Recommendations

We build search and recommendations solutions for leading retailers, marketplaces and finance companies.

## Semantic search

We leverage advanced Information Retrieval (IR), Named Entity Recognition (NER) and Machine Learning (ML) techniques to interpret search queries and product data based on meaning, not accidental word matches.

## Neural search

We develop, train and deploy state-of-the-art neural/vector search models to tackle the most challenging thematic and symptom queries.

## Search personalization

We personalize search results using implicit customer-specific preferences and recognized session intent, as well as learning-to-rank approaches.

## AI Recommendations

We provide “more-like-this” visual recommendations based on artistic and fashion style, as well as behavior-based and session-based recommendations.

## Searchandising

Combining search and merchandising, we develop rule engines to add control and merchandising bias to augment search and customer experience.

## Leading search platforms

We integrate with leading search & recommendation platforms or build bespoke solutions based on open source tech stacks.

# Modernized search platform for an iconic footwear brand

The website and apps of this influential brand are used by millions of customers worldwide to find, research and purchase footwear & apparel products. Customers bring their own vocabulary, experiences and interests. The brand needed an innovative search solution to connect customers with the products they love across countries and languages.

**600M**  
searches/year

**40+**  
countries

**25+**  
languages

## Outcomes

**5-10%**  
conversion uplift

**-50%**  
null results

**+\$100M**  
incremental revenue

- Grid Dynamics modernized the search platform with semantic search, engagement-based ranking and smart autocomplete capabilities.
- Enriched results relevance improved conversion rates across all channels.
- The neural search approach based on deep learning proved especially efficient for complex queries, cutting zero results and further uplifting conversions.





## Semantic search for Knowde, a leading chemical marketplace

Knowde, a leading digital marketplace with the world's largest catalog of chemicals, polymers and ingredients for a range of industries was looking to upgrade their baseline keyword matching search approach to modern semantic search specifically tuned for the domain of chemical compounds.

**15,000**  
brands

**10,000+**  
suppliers

**150,000**  
products

**250,000**  
documents

### Outcomes

**80% ▲**  
relevant results on first page

**30% ▲**  
click-through uplift

**60% ▼**  
page change reduction

- Grid Dynamics implemented and integrated a new semantic search platform.
- Query expansion using knowledge graph and special query parsing techniques greatly improved domain-specific query understanding.
- The new solution achieved 92% relevant search results on the first page, an 80% uplift from initial results.
- The click-through ratio increased by 30%, indicating high relevance of provided results.

# Real-time recommendations for a tier-1 US department store

An iconic Fortune 500 department store was looking to improve the quality of product recommendations based on real-time customer behavior. Typical for department stores, the vast and diverse product catalog and sparse interaction data made traditional historical recommendation models less effective. Therefore, the upgraded recommendations solution needed to capture session intent.

**100,000+**  
products

**<400 ms**  
SLA

**dozens**  
of recommendation touchpoints

## Outcomes

**10%+** ▲  
desktop CTR uplift

**15%+** ▲  
mobile CTR uplift

**3%+** ▲  
revenue per visitor

- Grid Dynamics developed, trained and deployed 40+ real-time session-aware models to learn and utilize session intent in recommendations.
- The models were deployed across all recommendation zones.
- The recommendation system achieves a good balance between optimizing the click-through rate and the conversion rate.
- The recommendation system supports 1200 requests/second with low latency.





## Our Technologies

We have a strong lineup of know-how and starter kits that help to significantly accelerate the delivery of typical projects and reduce time to market. These starter kits are developed in close collaboration with partners such as Google, Algolia, Elastic, Lucidworks and others.

### Semantic search

We provide starter kits for rapid development of bespoke semantic query parsing and neural search systems for product search, deployed in AWS, Azure, and GCP.

Starter kits cover:

- Data ingestion
- Concepts extraction & indexing
- Query interpretation and results explain API
- Neural model training pipelines
- Data vectorization & vector search

### Search platforms integration

We have deep expertise developing and integrating leading search platforms. Our starter kits help with integration of those platforms with leading commerce platforms.

Starter kits cover:

- Data ingestion, pre-processing and enrichment
- Data quality control
- Personalization
- Relevance tuning
- Commerce platform integrations





## Engage with Grid Dynamics

**1**

Our team of search data experts work with you to **define a strategy** and **create roadmaps** for data-rich search and recommendation solutions.

**2**

We work with you to define an optimal **engagement model** that can include both your and Grid Dynamics teams. We leverage our **starter kits** built using open source and cloud-native components to accelerate the implementation.

**3**

We deploy **cross-functional teams** with proper domain/technology leadership to execute projects from the roadmaps and deliver solutions end-to-end. Our teams usually work with client's stakeholders and product owners in a **co-innovation** model.

**4**

We focus on **iterative execution** of the roadmaps to deliver business value in short phases, but also continuously **refine the strategy** and come up with improvement proposals.

**5**

The co-innovation approach helps you to **establish a strong technology culture** in your organization, efficiently manage the roadmaps, and scale your search and recommendations capabilities.

# About Grid Dynamics

Grid Dynamics is a global digital engineering company that co-innovates with the most respected brands in the world to solve complex problems, optimize business operations, and better serve customers. Driven by business impact and agility, we create innovative, end-to-end solutions in digital commerce, AI, data, and cloud to help clients grow.

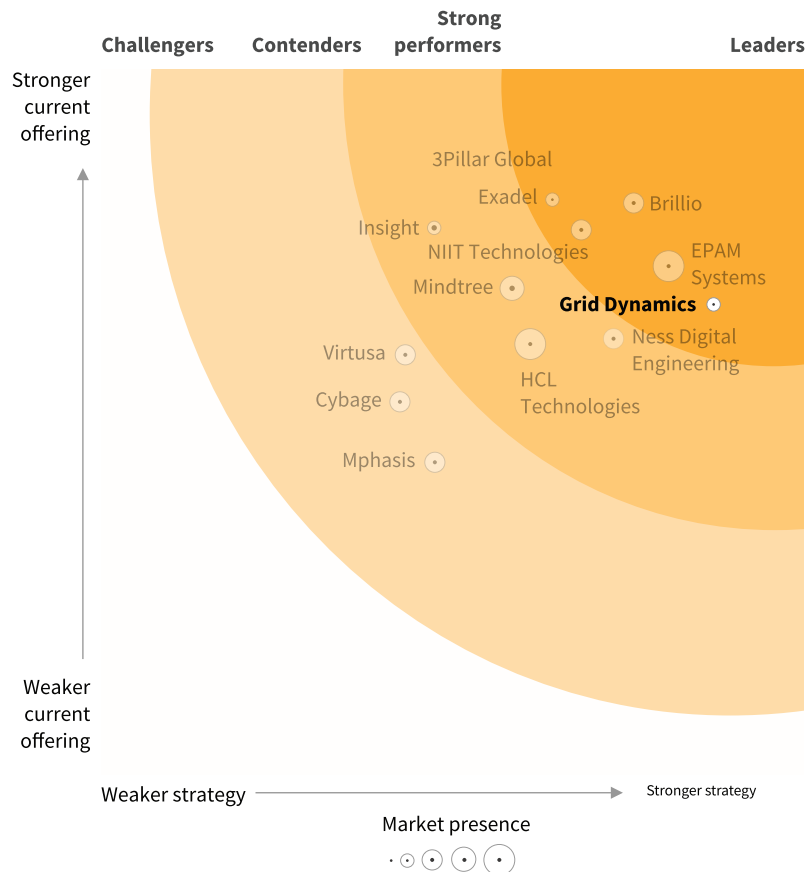
Headquartered in Silicon Valley, with delivery centers located throughout the globe, Grid Dynamics is known for architecting revolutionary digital technology platforms for 7 of the 25 largest retailers in the US and 3 of the 10 largest consumer goods companies in the world, as well as leading brands in the digital commerce,

manufacturing, finance, healthcare, and high tech sectors.

Our secret sauce? We hire the top 10% of global engineering talent and employ our extensive expertise in emerging technology, lean software development practices, a high-performance product and agile delivery culture, and strategic partnerships with leading technology service providers like Google, Amazon, and Microsoft.

In 2019, Forrester named Grid Dynamics a leader among midsize agile development service providers. In 2020, Grid Dynamics went public and is trading on the NASDAQ under the GDYN ticker.

**The Forrester wave™**  
Midsize Agile Development Service Providers Q2 2019





# About Grid Dynamics








## Key facts

- 13 countries across the US, Mexico, UK, Europe, and India
- 4,000 employees in Q2 2023
- Forrester Leader Midsize Agile Software Development Service Provider Q2 2019

## Areas of expertise

- **Experience engineering**  
Web | Mobile | AR/VR
- **Data Science and AI**  
Search | Personalization | Supply chain | IoT
- **Platform engineering**  
Microservices | MACH | Composable
- **Data engineering**  
Big data | Streaming | MLOps
- **Cloud and DevOps**  
CI/CD | AIOps | SRE | QE

## Clients

	Google	
align		
RAYMOND JAMES		AMERICAN EAGLE
LVMH		



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PREPARE TO GROW

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