



**GUROBI**  
OPTIMIZATION



**WHITE PAPER**

# **The Next Step for Enterprises: Decision Intelligence**

With decision intelligence technology, you can optimize real-time business decision-making and execution.

**T**oday's businesses face extreme complexities—from supply chain shortages and labor scarcity to global uncertainties. To make optimal business decisions in the midst of the complexity, business leaders are turning to data and analytics.

One data-driven, advanced analytics technology that has been and continues to be pivotal is decision intelligence technology—including mathematical optimization, in particular. With decision intelligence technology, enterprises are unlocking the value of their data by using it to make the most of their limited resources. In other words, they're able to do more with less by:

- Optimizing their most critical business processes such as production planning, workforce management, and financial portfolio allocation
- Making the best possible decisions to achieve their business goals—such as minimizing costs and maximizing efficiency and revenue growth
- Transforming their operations by enabling optimal and automated decision-making and execution

Let's look at the transformative impact of decision optimization technology across industries, levels, and functions—and explore why it remains an essential tool for enterprises today.

## Optimizing Decision-Making Across Industries

Decision intelligence technology has made its mark in practically every industry, across a wide variety of off-the-shelf and custom-built applications. It boosts the efficiency and effectiveness of highly complex, high-stakes business processes and achieves improved business outcomes.

There are some industries, though, where decision intelligence has had a particularly profound effect and has become a key driver of industry-wide transformation. Broadly speaking, these industries can be divided into two categories: established industries and emerging industries.

### Established Industries

Over the past few decades, decision intelligence technology has become an essential element embedded into the day-to-day operational fabric of established industries—including automotive manufacturing, airlines, and logistics.

Leading companies in these industries rely on decision intelligence technology, using it to manage their critical resources (such as aircraft and crew, assembly lines and spare parts, and trucks and drivers) in the most efficient manner possible—so that they can consistently deliver products and services to their customers and profits to their shareholders.

### Emerging Industries

Decision intelligence technology helps keep operations running for industries that have been particularly disruptive over the past decade—such as e-commerce and ride-hailing.

All the primary players in the ride-hailing space, for example, use decision intelligence to automate and optimize their routing (matching riders to drivers in real-time), pricing (determining how much to charge for rides based on demand and other factors), and many other crucial processes.

It's not an exaggeration to say that decision intelligence is helping to transform the industries that are transforming the business world. The truth is that many





established and emerging industries simply would not be able to operate—on the same scale and with the same productivity as they do today—without decision intelligence technology. It's used ubiquitously in these industries and continues to be a vital catalyst of digital transformation, business agility, and revenue growth.

## Transforming Your Strategic, Tactical, and Operational Decision-Making

To explore the full impact of decision intelligence as a technology of transformation, let's take a look inside the enterprise—to see how this technology has revolutionized operations across functions and levels of the organization.

As a prescriptive analytics technology, decision intelligence excels in fostering greater decision-making integration, automation, and optimization. This makes it particularly relevant in today's complex and ever-changing business landscape, where making decisions is arguably harder than ever.

But decision intelligence technology can help organizations conquer this complexity by empowering them to transform their strategic, tactical, and operational decision-making processes.

### 1. Strategic Decision-Making

With decision intelligence technology, key stakeholders across the enterprise—from the boardroom to the back office, the field, and the shop floor—can quickly and easily:

- Explore numerous what-if scenarios
- Evaluate long-term risks and opportunities across the organization's operational network
- Generate optimal strategic plans and make optimal strategic decisions that are aligned with their corporate objectives

Automotive manufacturers, for example, use decision intelligence to facilitate crucial strategic decisions, such as:

- Capital investments – “Should we open up new production plants, retool existing ones, or close some down?”
- Product portfolios – “When should we introduce new models, and where and when should we produce them?”
- Supplier selection – “Which global suppliers should we choose to provide spare parts?”

In other industries, including airlines, logistics, ride-hailing, and many others, companies use decision intelligence to:

- Conduct long-term planning
- Create and evaluate various scenarios for supply, demand, inventory, investment, and more
- Make optimal strategic decisions that determine the future direction of their businesses

## 2. Tactical Decision-Making

Companies also use decision intelligence to fuel optimal tactical-level planning, scheduling, and decision-making. It enables them to automatically and optimally align supply, capacity, and inventory with demand over the medium-term time horizon.

- Airlines use decision intelligence to automatically produce monthly schedules for their aircraft and crew (based on forecasted demand) and make decisions on which flights to offer, and at which prices—so that they can maximize on-time performance, resource utilization, and revenue growth, while minimizing operating costs.
- Automotive manufacturers rely on decision intelligence to generate medium-term production, sourcing, inventory, and distribution plans and schedules and guide tactical-level decisions in areas such as product mix, capacity and inventory management, and manufacturing operations.
- Ride-hailing companies make the best possible tactical-level decisions on whether to enter new markets or recruit new drivers, taking into account forecasted demand and other factors.

## 3. Operational Decision-Making

To successfully navigate today's constantly shifting business landscape, companies must be able to react and respond efficiently to changing conditions and disruptions. Decision intelligence gives enterprises the visibility and agility they need to preserve ongoing business continuity and profitability because it:



- Runs on the latest available data from across each company's operational network
- Incorporates a detailed model (or digital twin) of each company's current business environment
- Rapidly delivers optimal solutions to each enterprise's present-day, mission-critical operational challenges
- Empowers key stakeholders to make optimal, real-time, data-driven decisions

In the logistics industry, for example, decision intelligence is used to automate real-time routing and dispatching decisions—to ensure the on-time delivery of goods and the optimal utilization of resources such as trucks and drivers.

Airlines—who face everyday delays and disruptions due to weather, aircraft mechanical issues, or other factors—use decision intelligence in real-time to dynamically reoptimize their schedules, manage recovery operations, and make the best decisions on how to redeploy their crew and aircraft.

## The Transformation Journey Continues

Gurobi and its partners have led thousands of companies through decision-making transformation—not only in terms of business outcomes (by fueling greater efficiency, resilience, and revenue growth), but also in terms of business processes (by facilitating integration, automation, and optimization in their decision-making and execution).

As your organization adapts to today's volatile and complex business world, you can apply decision intelligence technology to power your enterprise-wide digital transformation, decision optimization, and competitive advantage.

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