

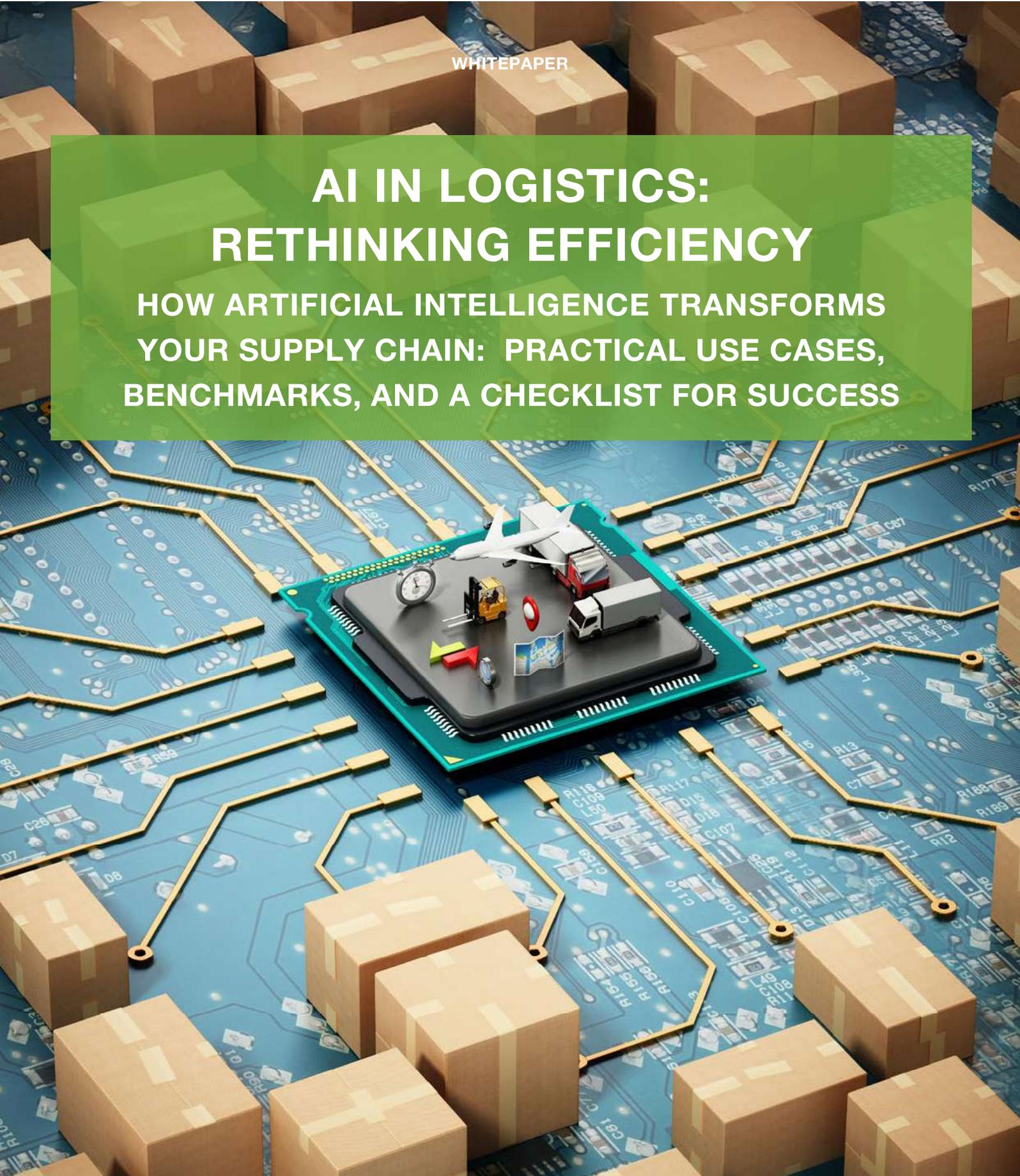


GROENEWOUT
Member of EPG

WHITEPAPER

AI IN LOGISTICS: RETHINKING EFFICIENCY

HOW ARTIFICIAL INTELLIGENCE TRANSFORMS
YOUR SUPPLY CHAIN: PRACTICAL USE CASES,
BENCHMARKS, AND A CHECKLIST FOR SUCCESS



Dear Readers,

Artificial intelligence is becoming one of the most powerful drivers of efficiency and resilience in modern logistics. At the same time, we see many companies still at the very beginning of their AI journey. Between the vision of autonomous processes and the daily operational reality lie the very challenges logistics professionals know well: different system environments, limited data quality, and the need to implement changes without disrupting ongoing operations.

At Groenewout, we have been supporting these developments for many years. We see that AI not only creates technological opportunities but also requires responsibility and clarity. The key question is therefore not whether AI will transform logistics, but how companies can use these technologies to create real and sustainable value.

In this whitepaper, we want to show you the practical benefits that AI and AI agents already deliver in logistics today, what measurable efficiency gains look like, and which factors are critical for a successful implementation. We combine technological expertise with experience from numerous projects. This bridge is exactly what makes the difference.

I wish you an informative read and many valuable insights for your own AI strategy.

Sincerely,

Alain Beerens

Branch Manager, Groenewout





AI IN LOGISTICS HAS BECOME A REALITY

Artificial intelligence has evolved from an experimental technology into a core component of modern logistics strategies. Companies today face increasing market volatility, rising customer expectations, and growing complexity in global supply chains. At the same time, the pressure is increasing to make processes faster, more stable, and more cost efficient. In this environment, AI becomes a key lever for transparency, automation, and operational excellence.

While traditional optimization approaches often reach their limits, AI enables a new level of data driven control. Models analyze patterns, detect anomalies, generate forecasts, and support real time decision making.

AI agents can even actively influence processes by providing recommendations or executing tasks automatically. For logistics leaders, this creates a tool that combines speed and precision while reducing operational workload.

For many companies, entering the world of AI represents a cultural shift. Leaders must build

“ In many industries, we see that AI can increase efficiency by double digit percentages. Logistics is no exception. ”

new competencies, make data quality more visible, and integrate technologies carefully into existing system environments. This makes it all the more important to approach AI in a pragmatic, step by step manner with a clear objective in mind.

AI is no longer a topic of the future. It is a tool that already delivers real value today. The question is therefore not whether AI will be used, but how it can be applied in a way that measurably improves logistics.



STATUS QUO: HOW AI IS RESHAPING THE LOGISTICS INDUSTRY

Logistics is operating in a technology market that is evolving faster than ever before, and AI is becoming a structural component of modern supply chains. The combination of powerful models, increasing data availability, and modern cloud or on premise architectures has created the foundation for using AI solutions productively within operational processes.

Many companies no longer view AI as an optional innovation initiative but as a strategic capability to secure competitiveness and resilience. Studies show that more than sixty percent of logistics companies plan to establish AI as a core process component within the next five years. Alongside global models like ChatGPT, Gemini, or Claude, open source variants are gaining importance, as they give companies more control over data, training, and integration.

“ The future of logistics lies in the intelligent connection of humans and machines. Those who invest in AI today will shape the supply chain of tomorrow. ”

A key driver behind this development is improved system integration. In many companies, valuable data is generated every day from WMS, ERP, TMS, sensors, and telematics. Only the consolidated use of this information enables reliable forecasts, automated decisions, and AI supported assistance functions. Modern platform strategies, as described in current Ehrhardt Partner Group (EPG) concepts, foster this interconnected environment and create a stable foundation for AI applications.



The rapid pace of technological advancement makes one thing clear: AI is not merely an enhancement of existing solutions, but a new management approach for logistics processes. Companies that are willing to take this step early secure a differentiating position in the market.

WHERE AI IS ALREADY CREATING REAL VALUE TODAY

Artificial intelligence delivers the greatest benefits where processes are complex, data rich, and time critical. These characteristics define operational logistics. Modern AI models, agent systems, and generative technologies support employees, automate routine tasks, and improve decision quality. The following use cases illustrate the range of possibilities and show where companies are already achieving concrete efficiency gains.

INVENTORY MANAGEMENT AND WAREHOUSE OPTIMIZATION

AI analyzes consumption levels, seasonal effects, historical data, and order patterns. Based on this, it generates precise forecasts and automated replenishment recommendations. Inventory levels decrease without jeopardizing product availability. Excess stock is reduced, and warehouse space is used more efficiently.



Value

lower capital commitment,
fewer shortages,
improved planning



Maturity
level

high

ROUTE PLANNING AND TRANSPORT OPTIMIZATION

AI models calculate optimal routes in real time. They detect disruptions, evaluate traffic data, and dynamically prioritize delivery orders. Dispatchers receive suggestions that increase route quality and efficiency.



Value

shorter delivery times,
lower costs,
reduced emissions



Maturity
level

high

WORKFORCE PLANNING

Modern AI solutions plan staffing based on order volume, qualifications, peak times, and historical data. They prevent overstaffing and understaffing and increase operational transparency.



Value

improved shift models,
higher utilization,
less idle time



Maturity
level

medium to high

CAMERA BASED PROCESS ANALYSIS

AI identifies patterns in camera data and generates heatmaps for warehouse areas. Anomalies such as congestion, inefficient routes, or delays are flagged automatically. Companies can react immediately.



Value

faster error detection,
transparent process
structures



Maturity
level

medium

BUILDING INTERNAL AI BASED KNOWLEDGE BASES

Company knowledge is systematically captured and accessible at any time. Employees receive answers in natural language and can execute processes more quickly.



Value

shorter onboarding times,
less search effort,
higher process compliance



Maturity
level

very high

AI SUPPORTED DASHBOARDS AND ASSISTANCE SYSTEMS

Dashboards are enhanced with functions that automatically monitor thresholds, report deviations, and derive recommendations. Integrated assistants enable questions such as: “How many orders are open?” or “Which routes face delay risks?”



Value

faster decisions,
fewer manual analyses



Maturity
level

high

OPTIMIZATION SUGGESTIONS THROUGH IMAGE AND VIDEO ANALYSIS

AI detects inefficient warehouse layouts, unused space, and safety risks. This generates concrete optimization suggestions for walking paths, material flow, and slotting logic.



Value

continuous improvement,
data driven planning



Maturity
level

medium

FORECASTING AND ORDER PREDICTIONS

Forecasts become more accurate with AI. Models analyze historical data, external factors, and seasonal effects. Logistics teams identify peaks early and plan resources accordingly.



Value

stable operations,
fewer bottlenecks,
reduced volatility



Maturity
level

high

AUTOMATED DOCUMENT CAPTURE

Delivery documents, freight papers, and handwritten notes are reliably digitized and structured. Error prone manual entries are eliminated.



Value

high data quality,
less effort,
faster processes



Maturity
level

very high

SUPPORT FOR TENDERS AND QUOTATIONS

AI analyzes historical quotes and creates new drafts. Teams save time and increase the consistency of their documents.



Value

faster processing,
better quality,
fewer errors



Maturity
level

medium

VOICE CONTROLLED ASSISTANCE SYSTEMS

Warehouse employees can retrieve information or report issues using voice commands. AI understands context, matches barcodes, or provides status information.



Value

fewer media disruptions,
faster responses



Maturity
level

medium



BENCHMARKS

FROM REAL WORLD PROJECTS

Once it is clear where AI can be used in logistics, the key question becomes: How large is the actual benefit in practice? Benchmarks from real projects show that AI technologies deliver visible results quickly, especially in operational areas. The outcome depends heavily on data quality, process maturity, and the level of system integration. Still, typical ranges can be derived very reliably.

INVENTORY MANAGEMENT AND WAREHOUSE OPTIMIZATION

Companies that use AI to monitor and forecast inventory often report double digit savings. Automated replenishment recommendations, intelligent thresholds, and dynamic planning models reduce both excess stock and stockouts.



20 to 30 percent lower inventory carrying costs
15 to 20 percent better product availability

ROUTE PLANNING AND TRANSPORT OPTIMIZATION

Routes and tours traditionally depend on the experience of dispatchers. AI systems can automate and continuously optimize a significant portion of this work. They account for traffic, weather, delivery priorities, and changing conditions in real time.



10 to 15 percent lower transport costs
15 percent faster delivery times
reduced CO₂ emissions per route

WORKFORCE PLANNING AND STAFF ALLOCATION

AI can control staffing levels far more precisely by incorporating order history, peak patterns, qualifications, and process fluctuations.



15 to 25 percent higher planning efficiency
reduction of idle time
fewer planning errors

DOCUMENT CAPTURE AND DATA ENTRY

One area where AI delivers rapid impact is the automated capture and processing of documents. Traditional OCR technology often struggles with handwritten content. Modern AI models extract data far more reliably.



up to 40 percent time savings in data capture
60 to 70 percent fewer input errors

QUOTATION AND TENDER PREPARATION

Many logistics companies, especially service providers and contract logistics organizations, benefit significantly from AI supported proposal processes. Since a large share of content is repetitive, automation is an ideal fit.



Typical
results

30 to 50 percent shorter processing times
higher formal consistency
fewer manual errors

Most companies achieve combined savings in the double digit percentage range through AI implementations. Particularly strong effects occur when multiple use cases are connected, such as the combination of forecasting, workforce planning, and inventory management.

GUIDELINE VALUES FOR EFFICIENCY IMPROVEMENTS

- ☆ **Double digit savings in nearly all operational areas**
- ☆ **Effects are strongest when data quality is high**
- ☆ **ROI often achievable within 6 to 18 months**
- ☆ **Significant scale effects when use cases are interconnected**

These benchmarks make one point clear: AI is not only a strategic innovation factor but also a direct operational lever. Companies that invest early secure advantages that are no longer achievable through traditional process optimization alone.

DATA PROTECTION AND ETHICS IN THE AGE OF AI

As AI becomes more widely used in logistics, the importance of handling data and automated decisions responsibly continues to grow. Logistics processes generate large amounts of sensitive information every day, including customer data, inventory levels, routing details, and operational workflows. Companies must ensure that this data is protected, processed correctly, and used only for defined purposes.

A central principle is transparency. AI models must provide understandable decision foundations, especially when they influence operational processes. Modern governance approaches define clear rules for data access, role models, deletion concepts, and auditing. Companies implementing AI should evaluate early on which data is being processed, how it is stored, and which protective measures are required.

“ Technology comes with responsibility. Anyone using AI must also ensure that ethical and data protection standards are upheld. ”

Beyond technical security measures, ethical considerations also play an important role. It must be ensured that models act fairly, do not create harmful biases, and do not unintentionally replace human decision making. AI is intended to complement human expertise, not replace it. For this reason, human oversight remains an integral part of every AI driven process chain.



HOW GROENEWOUT SUCCESSFULLY IMPLEMENTS AI

AI only delivers its full value when technology, processes, and people are systematically aligned. Groenewout combines deep logistics expertise with the IT and data capabilities of the entire EPG. This combination enables implementations that not only work technically, but also remain stable in day to day operations.

LOGISTICS EXPERIENCE MEETS IT EXPERTISE

Groenewout understands operational reality through numerous projects in warehousing, transportation, and contract logistics. This process knowledge forms the basis for tailoring AI applications precisely to real workflows. At the same time, EPG acts as a translator between operational requirements and technical implementation, ensuring that AI solutions are not only designed but also integrated into daily operations and reliably adopted by teams.



A HOLISTIC APPROACH

Successful AI implementation begins with a clear analysis of processes, data, and system landscapes. This is followed by concept development, piloting, model training, integration into WMS or TMS systems, and a controlled go live phase. Groenewout supports all steps continuously and ensures that improvements remain measurable. The approach reflects best practices from previous digitalization and optimization projects based on more than 60 years of project experience.

TYPICAL CHALLENGES AND HOW GROENEWOUT SOLVES THEM

Data quality issues, media discontinuities, and missing standards are among the most common starting barriers in AI projects. Groenewout addresses these challenges with clear data structures, API concepts, and practical integration methods. At the same time, many obstacles involve not only technology but also the organization. Employees must understand how AI supports their work and which tasks become easier as a result. Groenewout guides this transition through transparent communication and targeted training so that new solutions are safely adopted and used productively in daily operations.



ARE YOU READY FOR AI? THE PRACTICAL READINESS CHECK

The successful use of AI begins with a realistic assessment of your current situation. Companies should determine whether their processes, data, and organizational structures are sufficiently prepared to introduce AI systems in a meaningful and productive way.

FIVE GUIDING QUESTIONS HELP ASSESS YOUR LEVEL OF READINESS:

- 1. Do you have recurring, data intensive processes that can be automated?
- 2. Are there bottlenecks or inefficient workflows that AI could make more transparent or more stable?
- 3. Do you have sufficient data available, and is your IT infrastructure capable of supporting AI applications?
- 4. Is your team prepared for changed workflows and new assistance functions?
- 5. Have you defined clear goals you want to achieve with AI?

Companies that answer yes to several of these questions have a strong foundation for successfully launching AI supported logistics processes.

WHY AI WILL STRENGTHEN LOGISTICS FOR THE LONG TERM

Logistics has reached a point where AI does not merely promise potential but delivers concrete results. In our projects, we see that companies with clear goals, reliable data, and a pragmatic approach achieve real value very quickly.

AI supports teams, improves processes, and creates new transparency in complex operations. The key is to actively shape this transformation and involve employees along the way. When technology and practice come together, measurable advantages emerge across the entire supply chain.

I am convinced that AI will strengthen logistics in a lasting way and I look forward to shaping this path together with you.

Yours,

Alain Beerens

Branch Manager, Groenewout

