

EXPERT INSIGHT

# NEXT-GENERATION DISTRIBUTION STRATEGIES, TACTICS, AND TECHNOLOGIES

This comprehensive guide covers the greatest challenges distribution companies face when trying to provide exceptional customer service and remain profitable. It comes packed with the advanced strategies and tactics to overcome these challenges and how Descartes' innovative solutions can help.

# A Challenging Market

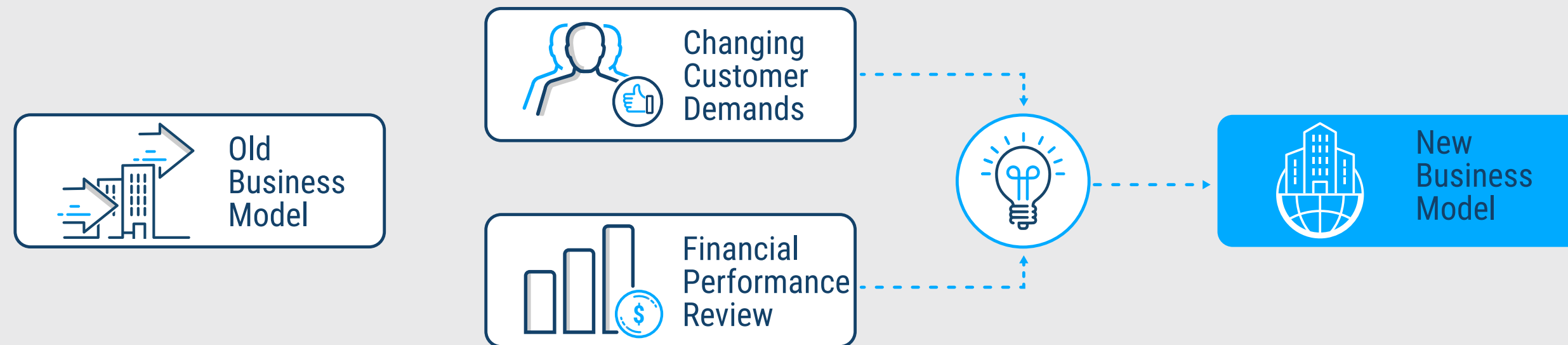
Being a distribution company has never been easy—tight margins, demanding customers, etc. There used to be a level of customer predictability; however, the pandemic made distribution markets even more challenging.

**Customer ordering patterns** are changing, making it harder to plan deliveries. **Services times** are increasing, negatively impacting productivity and the customer experience. Customers also have more **same-day orders**, which is challenging traditional delivery models and can be quite expensive if not properly managed.

Distribution companies have operated with the same business models for decades. When it came to the delivery schedule, “don’t touch the customer” was the top reason typically cited for not making changes to services policies and delivery practices. Over the last several years, however, the dramatic shifts in customer demand have taxed distribution company profits and made revenue growth harder than ever.

As a result, the senior management is either taking the initiative or being asked by the owner to evaluate new business models to **better serve customers, grow revenue, and operate more productively.**

## Restructure To Improve Financial & Operational Performance



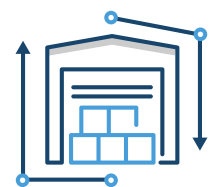
# How Customer Demand Is Evolving

Customer expectations have fundamentally changed in distribution markets. Customers expect tighter time windows and strict adherence to them. They want regular delivery status updates, including real-time estimated-time-of-arrivals (ETA) to help them manage their business. They demand shorter lead-times and greater responsiveness to minimise inventory levels and ensure they have what they need as customer demand fluctuates. They need paperless proof-of-delivery (POD) and related commercial processes to better address returns, minimise disputes, and reduce financial processing costs.

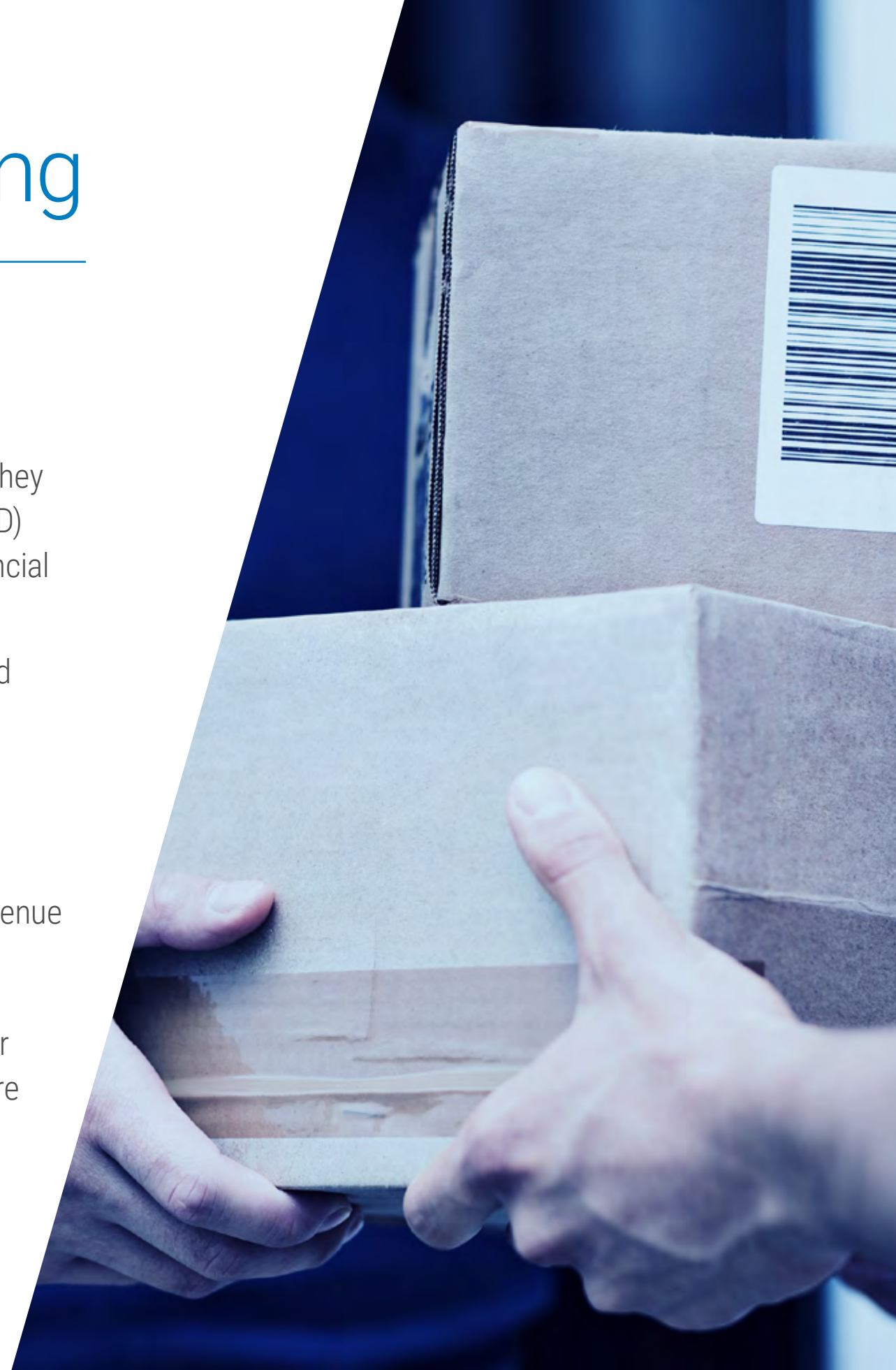
Operationally, distribution companies navigate a wide range of challenges to serve customers and maintain profitability:



**Demand forecasts** based on historical order patterns are no longer accurate, which has a knock-on effect across distribution operations. Everything from not having enough of the right products to having too much of the wrong inventory to skewing individual customer forecasts is driving down customer service, causing missed revenue opportunities and driving up costs.

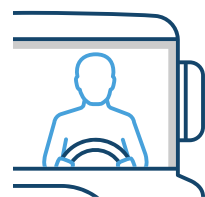


**Warehouse labour planning** has become more complex and is contributing to higher costs, lower productivity, and diminished customer service. The combination of more fluid customer demand and less accurate forecasts runs headlong into traditional static operational models, which results in either too much labour or not enough at critical times.



# How Customer Demand Is Evolving (cont'd)

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**The driver shortage** is impacting distribution companies' ability to serve customers and do it well. All transportation modes are experiencing a shortage of drivers, making hiring new drivers extremely challenging—especially for distribution companies with high turnover rates. Also, new drivers seldom perform as well as more tenured ones, resulting in lower customer service and delivery productivity.



**Costs** are escalating everywhere for distribution companies: the cost of products, wage increases to keep existing driver and warehouse resources, and elevated fuel prices are squeezing already thin profit margins. None of these factors appear to be diminishing soon as inflation remains high. There are more open jobs than available workers and global geopolitical upheavals are threatening to keep fuel costs high.

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Customers want regular delivery status updates, including real-time estimated-time-of-arrivals (ETA) to help them manage their business.

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# Manual Route Changes Fail to Meet Fluid Demand

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Distribution companies have always experienced conflict between delivery route planning and how routes are executed in the field.

Traditionally, manual route changes were made at the distribution centre to address changes in customer demand (e.g., off-orders, order size, and time window). Occasionally, these changes made their way back to planners to incorporate into the planning process to improve route quality.

With today's more fluid demand, however, **off-orders, same-day deliveries, and customer expectations** for tighter time windows have worsened the disconnect between planning and execution. Inaccurate plans impact customer service and profitability, and manual intervention due to last-minute order changes doesn't scale and can lead to even lower service levels and higher operating costs.

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**Inaccurate plans can impact customer service and profitability, leading to lower service levels and higher operating costs.**

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# Advanced Strategies & Tactics That Make a Difference

Distribution companies need to adopt new strategies and tactics to meet today's more fluid customer demand, higher customer expectations, labour shortages and escalating costs. Distribution performance can be improved by **evaluating customer service policies, operational planning, delivery execution, and customer engagement**.

Transforming distribution operations can be broken into five major areas. The first three relate to planning and execution strategies. The fourth enhances the customer relationship and adds incremental revenue opportunities. The fifth helps address one of the greatest challenges: driver retention.

- 1. Strategic planning:** What assets and customers do I have and how can I organise them in advance of actual demand?
- 2. Hybrid operational planning:** How do I schedule deliveries to meet actual customer demand, but do it in a way that is most cost effective?
- 3. Delivery orchestration:** How do I ensure that delivery plans get executed according to plan? If there is a disruption, what can I do to minimise its impact?
- 4. Customer engagement:** How do I leverage value-added delivery services in the buying processes and keep customers informed of the progress of their delivery?
- 5. Driver retention:** What can I do to help drivers more successfully execute their routes and minimise their stress to keep them coming to work?



# Maximise Distribution Performance with Strategic Route Planning

**Strategic route planning** determines the optimal combination and location of resources (distribution centres, fleet size, and drivers) to meet customer service and financial targets while considering service policies and operational practices. Distribution company customer networks are in constant flux due to changes in order volume and mix, customers, customer service policies, and business strategies. Distribution networks can quickly get out of balance and, as a result, do not run optimally or cost effectively. In addition, distribution companies need a way to model and evaluate the impact of potential changes to their distribution network before they're implemented.

Strategic route planning is different than operational route planning and has the potential to deliver **even greater productivity and service improvements**. This is because strategic route plans address more fundamental changes. In operational route planning, the strategies, policies, and even the territories, frequencies, and routes are already defined.

## Strategic Route Planning



Business Data



Service Policy



Vehicle Size



Customer Stratification



Order Size



Delivery Frequency



Depots



Business Plan

# Maximise Distribution Performance with Strategic Route Planning (cont'd)

The goal of operational route planning is to do the best with those restrictions already in place. With strategic route planning, however, customers, volumes, service policies, asset types, and operational constraints are treated as variables. Policies, practices, capacity, and other items can be **flexed** to see what new or changed routing strategies and tactics will **best address changes** in demand or new business goals.

Strategic route planning applies to not only those fleets that run static or master routes, but also to dynamic routes because strategic route planning helps model the policies and practices that dictate operational routing parameters. Strategic route planning is also a **vital component** in understanding the best approaches to enter new markets or consolidate acquisitions. As demand changes and distribution organisations look at new markets, they can use the solution to help **predict the costs and capacity** required to move forward.



# The Pros & Cons of Static & Dynamic Route Planning

Traditionally, distribution companies have used **static routes** for operational planning. Static routes work well with a stable customer base, little variability in both the customer order mix and delivery frequency, and where the driver-customer relationship is important in keeping or growing the business.

The static routing approach becomes ineffective when the customer base, order frequency, and order quantities are constantly changing. Off-orders are not considered at all in static planning and must be manually planned. Equally important is that static operational planning is the least productive and cost-efficient approach, and, with today's high costs and driver shortages, it elevates distribution company risk for lower margins and reduced customer service.

**Today's distribution companies are facing unprecedented fluidity in their business, struggling to keep up with the constant stream of customer changes and more dynamic customer requirements.** As a result, some have turned to **dynamic operational planning** to address heightened variability and produce delivery routes that are more productive and cost-effective and that improve responsiveness to off-orders.

Dynamic planning creates routes that are unique to the customer order mix, incorporate off-orders, and optimise delivery efficiency. While dynamic operational planning delivers higher customer service and lowers delivery costs, it has a downside that has kept many distribution companies from adopting it. Many companies, and especially the largest ones, value the stability of their deliveries, so constantly changing delivery times can become a serious customer service issue potentially leading to a loss in business.

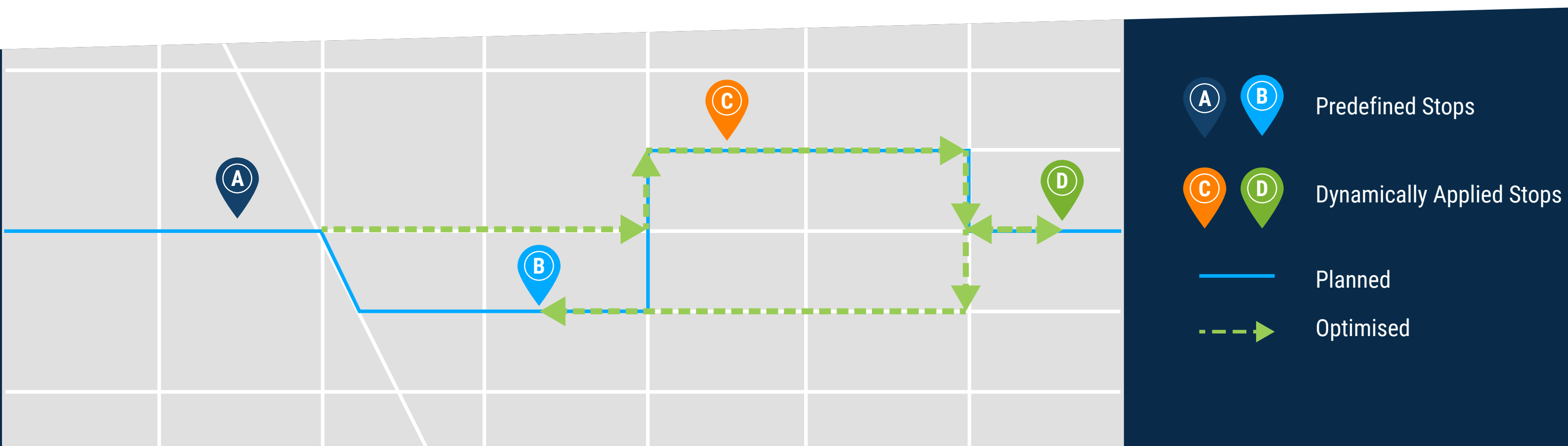
# Hybrid Routing: Uniting the Best of Both Worlds

Distribution companies have recognised that they can no longer afford to serve all customers equally. They need a way to more cost-effectively meet customer needs but be more responsive to changes in demand and off-orders. **Hybrid route planning** combines the **best characteristics** of static and dynamic route planning.

With hybrid route planning, larger or highly profitable customers ("A&B" customers) may have to be serviced on a fixed basis while smaller or less profitable customers ("C&D" customers) are serviced on a dynamic basis.

In addition, off-orders can be planned dynamically to increase revenue, improve customer service, and reduce off-order delivery costs. Hybrid routing will economically thread C&D customers between the fixed-window A&B customers based upon the location and order size. In addition, order size for A&B customers will be evaluated to see if it has increased or decreased from the base plan to ensure customer windows are maintained and if more deliveries can be added to the route to further improve delivery productivity.

## Hybrid Routing



# Mitigate the Unexpected with Delivery Orchestration

Distribution companies know that even the best plans can be upset once route execution begins. Customers cancel orders, accidents, and weather throw off route progress jeopardising planned arrival times—the disruptions can be endless. Rather than leaving decisions to address execution challenges to drivers, **delivery orchestration** can help mitigate the impact of the changes and disruptions that occur.

The foundation of delivery orchestration is **real-time GPS tracking** of the vehicle and **two-way communication** with the driver, which provides visibility into the location and delivery status for each customer stop. With real-time GPS location and additional information such as traffic and weather updates, accurate ETAs for each stop can be predicted. The two-way communication updates drivers of customer and delivery sequence changes and provides dispatchers and managers with instant status updates of deliveries and any overs, shorts, or damages (OS&D).

## Delivery Orchestration



Complete  
Visibility



Exception  
Management



Coordinate  
Multiple  
Resources



Add/Delete  
Deliveries



Delivery Data  
Capture



Real-Time  
Performance  
Measurement



Leverage  
AI/ML/  
Analytics

# Delivery Orchestration Supports Route Productivity

In addition to moving dispatchers and managers to more productive exception management of their drivers, delivery orchestration can play a more proactive role in **maximising route productivity, minimising the impact of disruptions, and addressing off/same-day orders**. Real-time performance measurement lets drivers, dispatchers, and managers know if they are on track to meet their performance metrics and how individual drivers compare to the rest of the team.

Advances in **artificial intelligence (AI)** and **machine learning (ML)** can, in real-time, identify and propose changes to route sequence to the driver, which helps them make their delivery windows and reduces unnecessary time and mileage that drive up delivery costs.

All of the data generated by real-time GPS tracking and status updates offers a wealth of information that can be used to improve route performance from planning through execution. ML can use the actual data to refine customer locations, drive and stop times, and delivery windows. It can even understand the differences of individual drivers in executing their routes. These refined results are fed back to the planning and delivery orchestration solutions, making them **more accurate, improving route reliability and ETA predictability, and eliminating excess time in the plan** based upon operational assumptions.

CHAPTERS

Delivery Orchestration

# 5 Steps to Win Over More Customers

Customers are expecting the same engagement experience they have as a consumer to also come from their distributors. There is a **five-step “life cycle” approach for engaging customers** that not only increases customer satisfaction, but also can lead to increased revenue:

1. Set customer delivery expectations and potentially upsell value-added services through delivery appointment booking
2. Reduce delivery failure and minimise the impact of reschedules through pre-shipment confirmation
3. Notify the customer of the delivery through real-time delivery status updates
4. Capture delivery success or failure with electronic proof-of-delivery information
5. Measure success/streamline the returns process through post-delivery customer surveys and returns pick-up scheduling.



# Why Customer Engagement Is a Crucial Component

Customer engagement is **critical to enhance the overall customer experience** for distribution companies but can be taken to another level to improve competitive differentiation and even product pricing. Providing the right delivery information at the right time to customers can **improve their productivity**, adding further value to a distribution company's service offerings. It can also lead to **premium pricing** for more dynamic markets where customers value immediacy and accuracy of the delivery.

Think of same-day, time-definite delivery services where customers value delivery immediacy and accuracy almost as much as the goods they are receiving. As customers continue their move to more dynamic and, in particular, off-day ordering, the ability to promise when the delivery will arrive—with **certainty** and at the point-of-sale—will keep customers from contacting competitors for the delivery options they may have for last-minute orders.

Providing the right delivery information at the right time to customers can improve their productivity, adding further value to a distribution company's service offerings.

CHAPTERS

Steps To Engage Customers



# Tending to The Driver Experience Pays Off

**Drivers** are at the heart of distribution company delivery performance. They are the **last experience** that a customer has and their effectiveness dramatically affects productivity.

Senior drivers do a better job than newly hired ones. They are more productive and consistently meet time window commitments and require less coaching. Driver turnover has been historically high for many distribution companies, but with today's tight labour market, fixing it can no longer be avoided.

Driver pay has impacted driver retention, which most distribution companies have recognised and addressed. Stress, however, has become the leading reason that drivers leave their jobs; alleviating this stress needs to be one of the top strategies for distribution companies.

Much of the stress drivers face relates to **the quality of routes they are given, the level of data capture required before, during, and after the route is executed and, most importantly, the fact that they are "on their own" to find ways to manage the disruption** but still make all of their customer delivery promises.

Driver turnover has been historically high for many distribution companies, but with today's tight labour market, fixing it can no longer be avoided.

CHAPTERS

The Driver Experience



# 5 Ways to Make Drivers Happier & More Productive

1. **Create more feasible and realistic delivery routes.** Poor route design means that drivers must come up with their own route sequence or scramble in route to make their deliveries in the time allotted.
2. **Streamline work processes.** Mobile applications are powerful ways to collect data and enforce delivery processes. They can also be crushing in terms of the work they put on a driver. Without a thorough streamlining of work processes and data collection, workflows can cripple productivity and create the kind of stress that causes drivers to leave.
3. **Reduce number of mobile apps.** In many cases, drivers also are forced to use multiple mobile apps to meet logistics, commercial, and safety requirements of distribution companies. Distribution companies need to look for mobile apps that can span multiple delivery and safety processes or can be seamlessly integrated into other applications to reduce driver stress and improve productivity.
4. **Proactively address route disruptions.** The combination of real-time route status updates and algorithms provides drivers with advanced guidance to avoid congested areas and resequence stops so drivers can focus on driving and delivering.
5. **Manage the driver's day.** Beyond disruptions, there are many other decisions drivers must make such as when to take breaks and capturing changes in delivery locations. Instead, let the route planning solution incorporate breaks into driver schedules to ensure they meet regulatory or company policies. Also, use the mobile app to allow drivers to easily capture exception information, so it can be either addressed in real-time by dispatchers or managers or incorporated into the next planning cycle.



# How Descartes Can Help

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Descartes helps distribution companies **meet the broad range of challenges** they face by providing advanced solutions that enable the differentiated services that can help them grow and improve margins.

- Strategic route planning to determine the best service strategy
- Hybrid operational planning that keeps customer service levels high but reduces costs
- Proactive route execution that minimises the impact of disruptions
- Engagement with customers from the time of purchase to post delivery
- Better management of drivers that improves retention, productivity, and safety

Descartes' modular platform allows distribution companies to focus on improving their most pressing challenges. All these capabilities are underpinned by a modern, cloud-based architecture and use of artificial intelligence (AI), machine learning (ML), and advanced analytics.

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With a comprehensive cloud-based solution, distribution companies can offer the highest levels of customer service while lowering costs, minimising the impact of route disruptions, and fostering positive relationships with their drivers.

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# Single-Pass Strategic Route Planning

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Descartes' **strategic route planning solution** uses a single-pass approach to strategic route modeling, which is a quick and powerful way to reset distribution operations. Strategic route modelling solutions have been used by distribution companies for two decades, but Descartes has **next-generation** optimisation technology that speeds up the process and produces superior results versus traditional sales and territory planning solutions.

Traditional tools require multiple steps to get to an answer. First, territories must be cut, then delivery frequencies assigned, delivery days selected, and, finally, routes sequenced. In each step, analysis must be completed to determine if that step violated any conditions of the previous step. With Descartes' strategic route planning, all three steps occur in a single pass. This approach is much faster and more effective, especially for distribution organisations trying to be more agile to react to today's changing demand and pivot to new business models.

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Faster and more effective strategic route planning makes it possible to be a responsive organisation that can meet evolving consumer demands.

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# Hybrid Route Planning Combines the Best of Static and Dynamic Planning

With Descartes' route planning solution, distribution companies can execute **hybrid**, dynamic, and static route plans in a single platform. Descartes uses a unique approach to optimisation that allows there to be different customer types and service strategies with attributes that the optimisation engine uses to create the best route plans.

Service plans developed in strategic route planning are integrated into hybrid route planning to help ensure that service strategies are consistently followed at an operational level. The continuous optimisation capabilities of the solution allow for order cut-off times to be extended to take more orders and provides the ability to plan orders as they are booked and seed anchor orders for key customers.

**Descartes' solution goes beyond creating optimal delivery routes.** It helps create driver and warehouse resource plans, coordinate picking, packing, staging, and loading, and is forward-looking to minimise the impact of over and under capacity situations. Planning is automated, so planners only have to review the results and focus on exceptions to help improve overall operational performance.

Hybrid route planning brings together dynamic and static plans in one platform with a distinctive approach to optimisation.

CHAPTERS

Descartes' Hybrid Routing

# Easy-to-Use Proactive Route Execution

Descartes' **route execution solution** provides distribution companies with the comprehensive capabilities needed to achieve true delivery orchestration. Through a combination of real-time optimisation and GPS-enabled mobile applications, Descartes provides delivery operations with a closed-loop solution that proactively manages drivers throughout their route and frees dispatchers and managers to focus on exceptions and process improvement.

The solution provides complete visibility to routes as they are being executed, leverages ML to provide more accurate ETAs, and offers route sequence rescheduling suggestions to help keep drivers on track and minimise the impact of disruptions. **Two-way communication** automates delivery additions or deletions and customers making last-minute schedule changes. If multiple resources are needed for a delivery, they can be automatically synchronised to arrive at the same time.

All of the route execution information captured is available in **easy-to-use, real-time performance dashboards for drivers, dispatchers, and managers**. Managers have mobile applications designed to help them understand how drivers are progressing and to approve specific workflow-related changes.

Proactive route execution supports drivers, dispatchers, and managers in their roles—every day.

CHAPTERS

Descartes' Route Execution

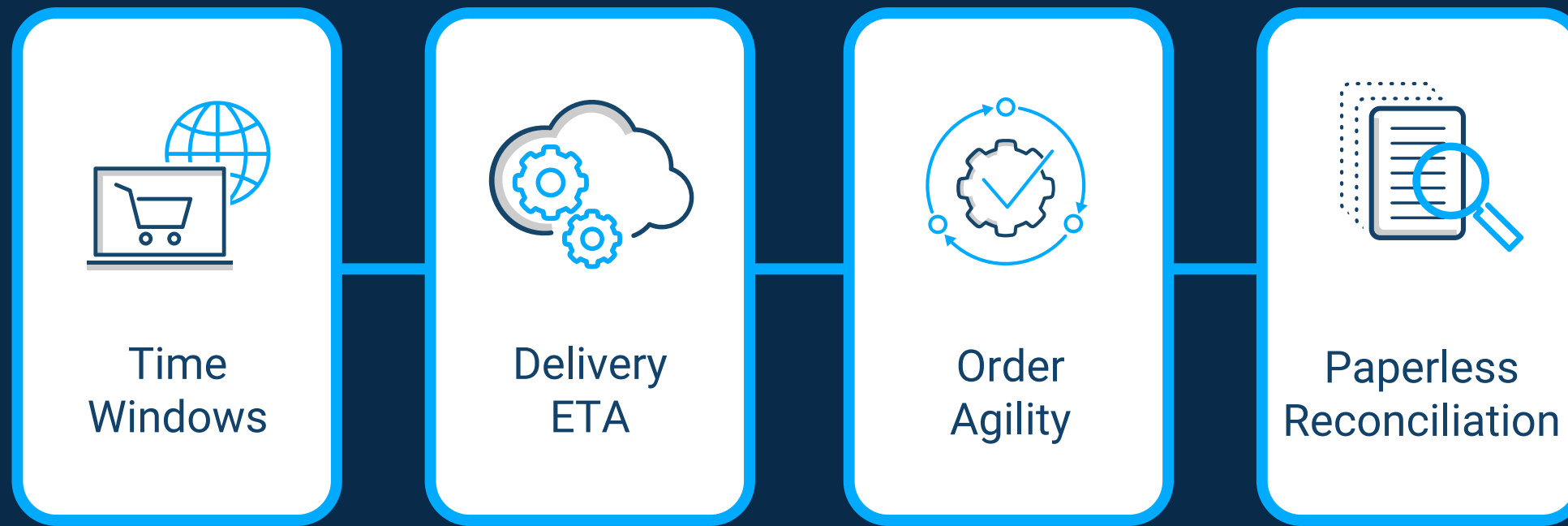
# Comprehensive Order Lifecycle Customer Engagement

Descartes gives distribution companies the ability to digitise their customer delivery experience, engaging customers from the time they order to post-delivery surveys and returns scheduling. Using Descartes' **smart delivery appointment scheduling**, delivery companies can allow customers to self-serve their delivery appointment 24X7. Smart scheduling also allows delivery companies to offer new, more dynamic delivery services and control the delivery options offered to **minimise delivery costs**.

Once deliveries are scheduled, notifications keep customers informed of the status of their order and prepare them to receive it. This approach helps to

capture order changes before deliveries are attempted and reduces failed deliveries because customers were not available when deliveries are attempted.

During the delivery, POD information is **electronically captured** to confirm success or document discrepancies. Descartes uses GPS location and time stamping of the information to minimise disputes and to accelerate billing by reducing the order-to-cash cycle. After deliveries are made, Descartes enables companies to send surveys electronically to customers to capture important customer experience information and, using smart scheduling, customers can self-schedule returns of unused goods.



# Improve Driver Productivity with One Solution

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Descartes' **routing, mobile, and telematics solutions** help improve driver productivity, reduce driver stress, and improve driver safety. Descartes' solution produces accurate and feasible delivery routes that minimise the need for drivers having to make ad-hoc adjustments in route to make delivery promises. **Improved confidence** in the route reduces driver stress and makes their day more predictable. The two-way communication automates route updates and allows dispatchers and managers to interact with the driver while in route.

The solution also makes newer drivers more productive as it provides optimised routes, driver directions, and proactively manages disruptions. The real-time GPS tracking combined with vehicle telematics allows driver performance to be **measured** so driving behaviors (e.g., reducing speed, hard breaking, and excessive idling) can be adjusted.

Performance dashboards help managers coach drivers to make them more productive and operate their vehicles more safely. The solution also helps identify when vehicle performance is beginning to falter, enabling proactive servicing that reduces maintenance costs and keeps vehicles on the road longer.

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Help your drivers perform better while increasing their job satisfaction and ensuring safety on the road.

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CHAPTERS

Driver Productivity

# Solutions Powered by Innovative Technologies

Descartes' route planning, mobile, and telematics solutions leverage innovative technologies in many ways to produce superior results for distribution companies.

**AI** is used in system configuration and embeds the knowledge of Descartes' product experts to provide the optimisation settings that best meet a distribution company's planning goals.

**ML** is used in performance tuning to more accurately determine stop, service, and travel times, customer locations, and provide real-time route re-sequencing.

**Robotic process automation (RPA)** in planning takes the best planner strategies and techniques and standardises and automates them. In this way, RPA reduces the number of planners required and focuses them on exception management and process improvement. With RPA bots, planning becomes a review process and every plan across the company is consistent and as optimal as if the best planner developed it.

Descartes' advanced analytics solution was designed to take all of the data being generated and turn it into **deep insight into customer and delivery operations**. The solution does the "heavy lifting" of data preparation and integration with a leading analytics solution that has been preconfigured to get distribution companies quickly leveraging the powerful information it holds to improve operational performance and evaluate customer delivery behavior.

CHAPTERS

AI, ML & RPA Technology

# Summary

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**Delivery performance has never been more important for distribution companies.** The challenges of today's distribution markets are causing a rethinking of distribution strategies and the role and value of distribution capabilities to the **top and bottom line**. The good news is that there are new business models emerging and greater proof of the value of advanced distribution practices. Equally, technology has progressed at a rapid pace and has the capability to transform delivery performance for distribution companies. Descartes has a long history of serving distribution companies and a proven track record of investing in **leading distribution strategies and technologies** that keep its customers at the forefront of distribution performance. Descartes'

comprehensive solution for distribution companies enables the next-generation strategies and tactics needed to thrive in today's challenging distribution markets. The solution broadly addresses the most pressing challenges distribution companies face but allows organisations to start with the most important ones and expand to gain even more impressive results.

Let Descartes' distribution experts help your company understand how leading strategies and tactics enabled by Descartes' innovative distribution solutions can make a meaningful difference to your overall business performance.





# About Descartes Systems Group

Descartes is the global leader in providing on-demand, software-as-a-service solutions focused on improving the productivity, performance and security of logistics-intensive businesses.

Customers use our modular, software-as-a-service solutions to:

- Route, schedule, track and measure delivery resources
- Access global trade data
- File customs and security documents for imports and exports
- Plan, allocate and execute shipments
- Rate, audit and pay transportation invoices
- Complete numerous other logistics processes by participating in the world's largest, collaborative multimodal logistics community

Our headquarters are in Waterloo, Ontario, Canada and we have offices and partners around the world.

Learn more at [www.descartes.com](http://www.descartes.com), and connect with us on [LinkedIn](#) and [X](#).

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