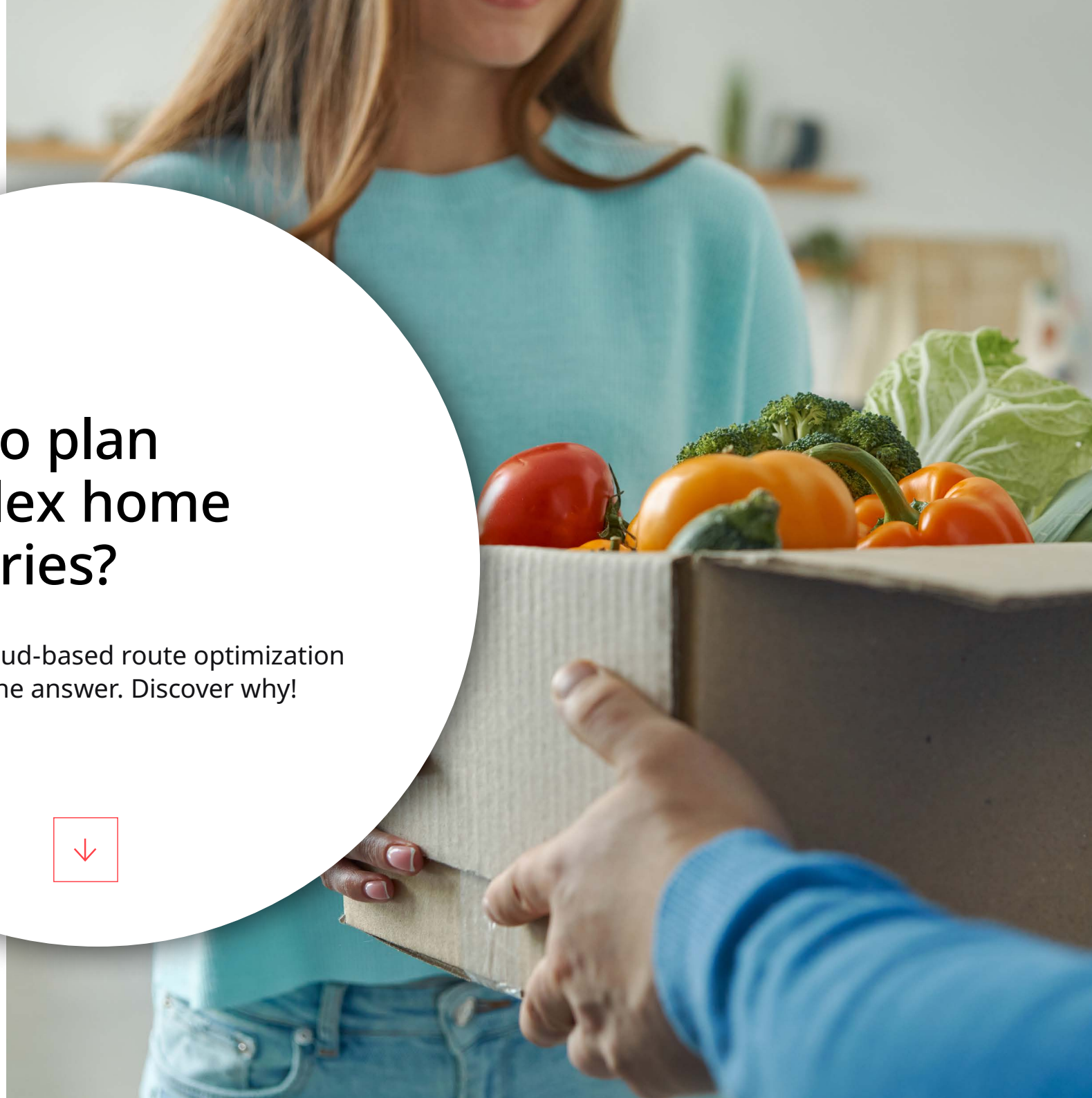
PTV LOGISTICS



Whitepaper

How to plan complex home deliveries?

OptiFlow: cloud-based route optimization software is the answer. Discover why!

www.ptvlogistics.com

INTRODUCTION

In a world dominated by rapid e-commerce growth and ever-changing customer expectations, B2C deliveries, or home deliveries, are more complex than ever. Balancing speed, efficiency, and cost is a daunting task for many companies.

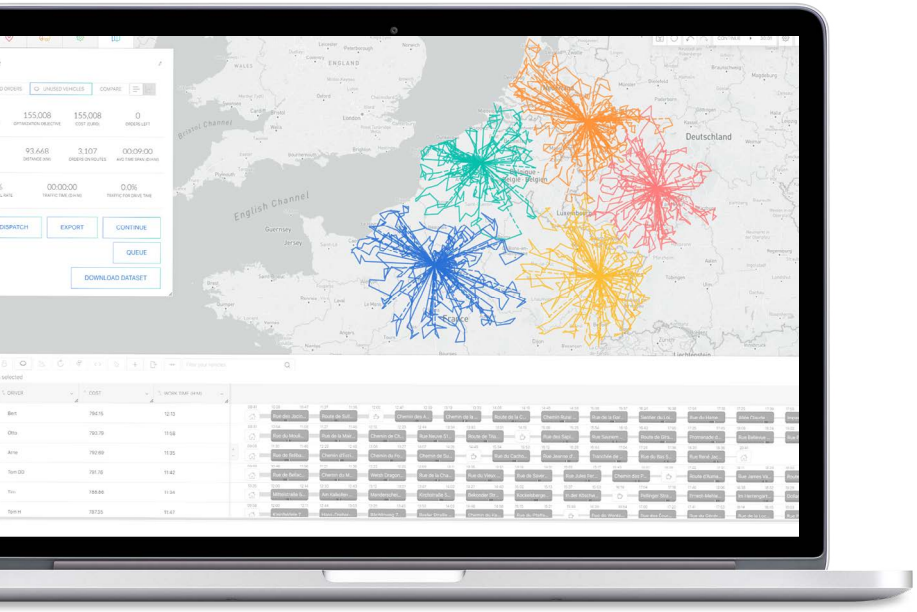
Tackling Modern Delivery Challenges

This whitepaper delves into these challenges and sheds light on the transformative role that route planning software, particularly the OptiFlow SaaS solution, can play in navigating this intricate landscape.

TABLE OF CONTENTS

OPTIFLOW – A GROUNDBREAKING SOLUTION

OptiFlow is not just a tool; it's a groundbreaking solution. Designed to transform complicated planning dilemmas into streamlined processes, OptiFlow stands as a beacon for companies looking to turn challenges into opportunities.



Transforming Planning Dilemmas into Opportunities
Dive in and discover how the future of efficient deliveries is being reshaped, turning planning dilemmas into streamlined processes and opportunities for growth.

Navigating the Future of Efficient Deliveries
Explore the intricate landscape of B2C deliveries and learn how OptiFlow's innovative approach is redefining speed, efficiency, and cost in the modern delivery ecosystem.

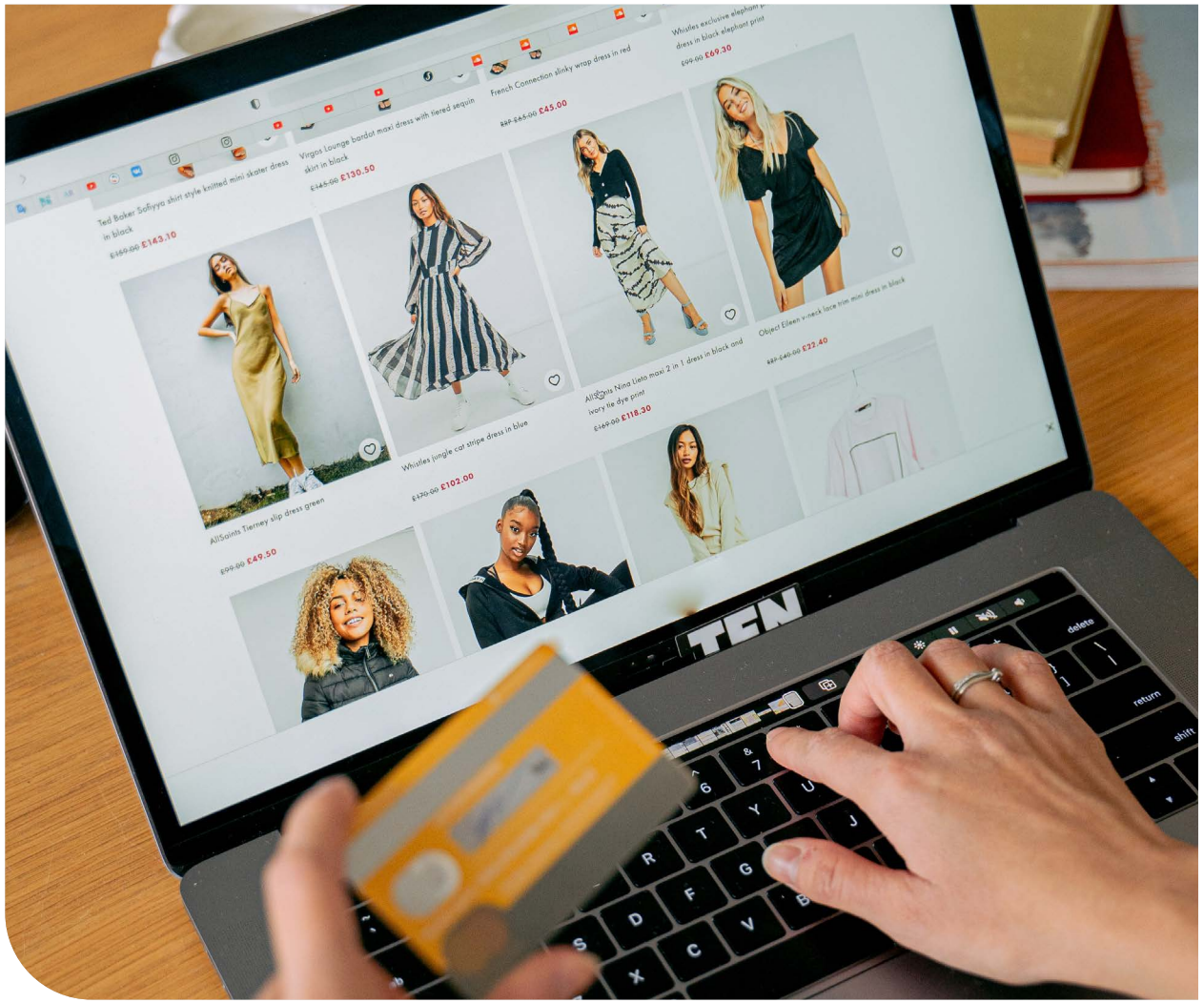
Discovering OptiFlow's Transformative Impact
Immerse yourself in the transformative impact of OptiFlow and see how this groundbreaking solution is serving as a beacon of innovation in the complex world of home deliveries.

DISCOVER OPTIFLOW →

CONSUMER DELIVERY MARKET

At the beginning of this decade, the world of consumer deliveries has experienced explosive growth. Driven by the pandemic, consumers massively opted for online shopping, preferring to have their orders delivered to their homes.

This shift has led last-mile delivery providers to significantly invest in expanding their network and transport fleet. However, with the recent decline in demand, they are now faced with the challenge of cutting costs.



Diversity in Delivery

What this means in practice varies from one delivery company to another. Often, when we think of consumer deliveries, we imagine parcel carriers entering our residential areas every day with dozens of delivery vans. However, data shows that most delivery vans are not filled with standard packages, but with furniture, appliances, DIY products, groceries, and meals. This points to the diversity and complexity of the current delivery market.

Segments within Consumer Deliveries

Hence, the consumer delivery market is highly fragmented. Broadly speaking, we can distinguish five different forms of consumer delivery:

- Packages from (inter)national operating online retailers
- Packages from locally operating companies
- XL products (two-person deliveries)
- Groceries/food supplies
- Meal delivery (bicycle/scooter)

Route Planning is Crucial

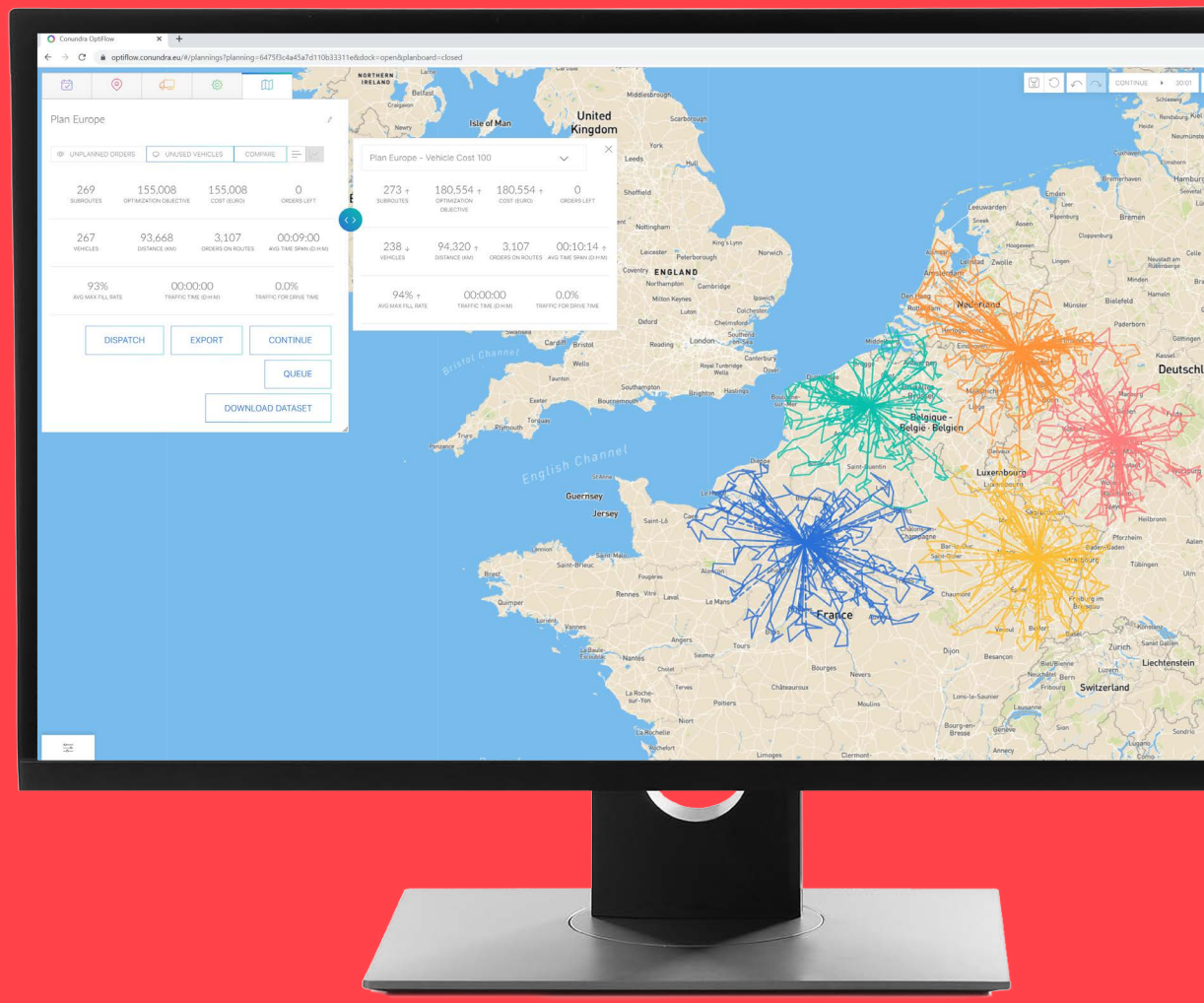
All these deliveries have at least one thing in common: efficiency hinges on good route planning. Moreover, each type of consumer delivery presents different challenges for planners. What are these challenges? How can planners utilize smart planning tools like OptiFlow to adjust to the constraints and save on costs?

100% Cloud

Did you know this? OptiFlow is a cloud-based software that eliminates the need for additional server infrastructure. This cloud setup enables quick scaling of orders, vehicles, and plans, allowing you to handle up to **10,000 orders in a single plan**.

Additionally, with automatic weekly updates and regular new feature releases, OptiFlow ensures that you always have access to the latest technology and features to meet the demands of modern logistics.

REQUEST A DEMO →



COMBINING B2C AND B2B PACKAGES?

Most online orders result in a standard package. These are the packages that are taken from the distribution centers of retailers, e-tailers, and fulfillment companies to the network of parcel carriers. Many parcel carriers make no distinction between packages ordered for consumers (B2C) or businesses (B2B). They put both types of packages together in one delivery van.

This introduces additional challenges in route planning. Companies in the city center are usually open from 9:00 am to 5:00 pm, maybe an hour longer. This is often when many consumers are not yet home. To avoid delivery personnel standing in front of a closed office or house door, it's essential to account for these restrictions in the planning.

Increasing Efficiency

A hallmark of major parcel carriers is their highly efficient distribution network, made possible by efficient route planning. And this network only becomes more efficient as volumes continue to rise. As the 'drop density' increases, parcel carriers have to travel fewer kilometers to empty a fully loaded delivery van. In other words, productivity increases. According to the Amsterdam University of Applied Sciences, for a growth of 15 to 20 percent, parcel carriers only need at most 6 percent more delivery vans.

Failed Home Deliveries

Nevertheless, effective route planning remains a significant challenge for parcel carriers. This is evident from the high number of delivery attempts that fail. Every time a delivery person stands in front of a closed door, the package has to be taken back, resulting in additional costs.

Solutions for Failed Home Deliveries?

Parcel carriers have developed various strategies to reduce the number of failed deliveries:

1. **Service Points**
   Shops or other places where consumers can pick up packages.
2. **Parcel Lockers**
   Unmanned storage systems often located along busy roads.
3. **Time Slots**
   Parcel carriers can increase the chance of a successful delivery by allowing consumers to choose from time slots or make a delivery appointment.
4. **Address Intelligence**
   Parcel carriers that record which package can or cannot be delivered can extract valuable information from this. When is someone present or not at a particular address? When is the likelihood of success highest: at the beginning or end of the day?

These solutions demand a lot from the planners. If parcel carriers want to reduce the number of failed home deliveries, their route planning systems need to automatically account for time slots, appointment times, and the information derived from ‘address intelligence’.

LOCAL DELIVERY SERVICES

In terms of planning, the flow of packages from webshops poses the least challenge. Deliveries from local suppliers to local customers (usually businesses) are a lot less efficient. Suppliers also use delivery vans for this, which often only contain a few shipments per trip. Thus, the load rate is very low.

Opportunities for Optimization?

Here lie opportunities for local delivery companies with smart planning concepts. Consider delivery companies with a central hub, which combine the pickup and delivery of shipments during their routes. A route planning system helps in scheduling efficient routes, taking into account the maximum load capacity of the vehicles deployed. After all, a delivery van can only pick up a shipment if sufficient cargo space is available.

Customized Deliveries

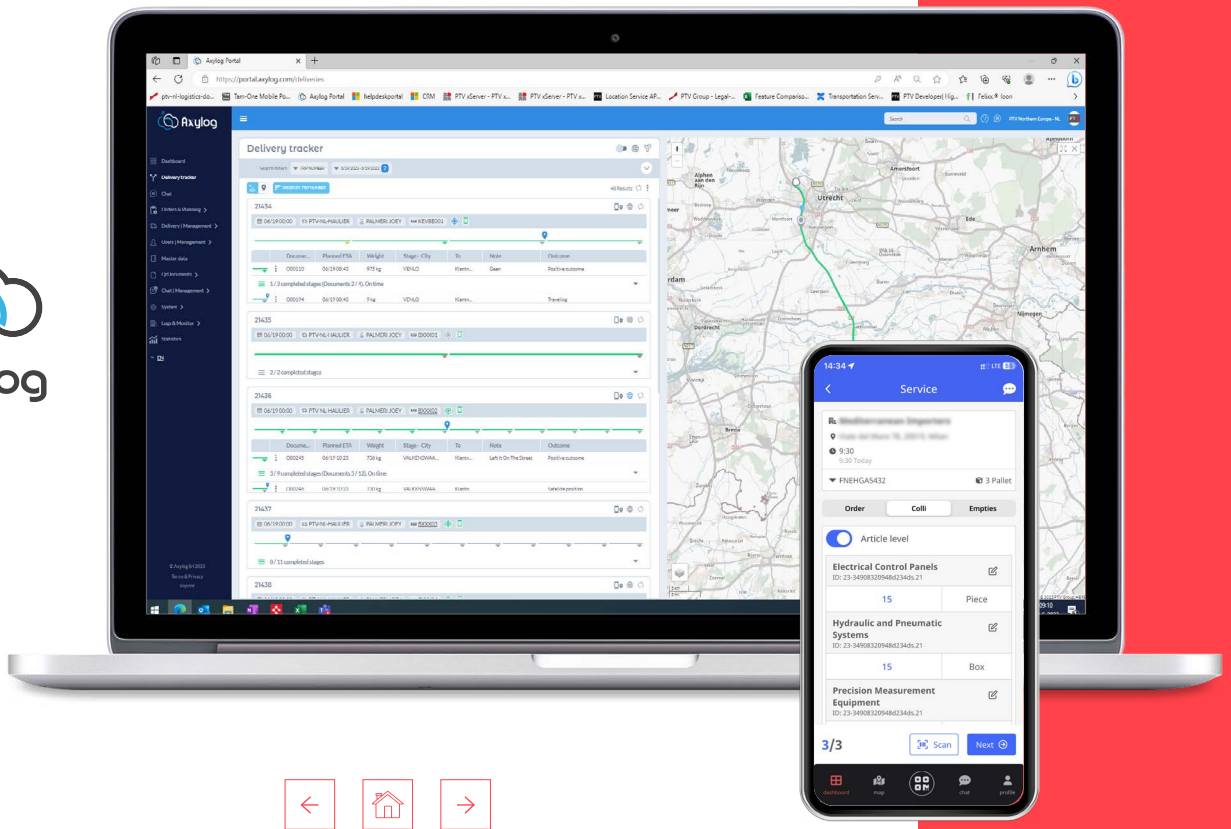
Route planning systems offer local delivery services the flexibility to personalize their services. This includes:

- Setting specific delivery appointments.
- Performing additional tasks such as taking away empty packaging.
- Picking up return shipments.

Digital order entry ensures that the system automatically takes all limitations and requirements into account.

Urgency

Also, consider express shipments. Since these are local products from local companies, it is possible to deliver shipments within one or two hours. With OptiFlow – possibly in combination with PTV Axylog – your transport operations deparment can see at a glance which delivery vans are nearby and available. Once an express shipment is scheduled, the system calculates the expected arrival time.



Axylog

THE PERFECT MATCH: PTV AXYLOG

Real-time transport visibility platform

PTV Axylog provides real-time visibility, control and performance analysis for the entire procurement and delivery process for producers, carriers, logistics partners and large-scale retailers. Extend OptiFlow with PTV Axylog and combine route optimization with realtime transport visibility. This makes it simple for you to plan, trace and manage all your logistics flows. For higher efficiency and satisfaction along your entire supply chain.

BOOK A PTV AXYLOG DEMO →

LARGER THAN PACKAGE SIZE

Shipments with larger products such as appliances, televisions, furniture, garden sets, and DIY products require special attention. Given the size and weight of these products, often two people are needed for the delivery of the items.

Planning Details?

For successful planning of these deliveries, planners need answers to numerous questions:

- Is the product to be delivered at the door or placed inside the house in the correct spot?
- Do the deliverers need to go upstairs? Is an elevator available?
- Do the products need to be assembled and/or installed?
- Does the consumer need an explanation or instructions?
- Do packaging or old products need to be taken back?

Taking Restrictions into Account

If the answers to these and other questions are recorded digitally right at the time of order entry, the route planning system can take these into account. This means that, with the press of a button, the system generates a planning proposal that automatically considers all relevant restrictions. Think of the following restrictions:

- **Delivery time agreements.** For the delivery of furniture, appliances, and other large products, the consumer needs to be at home. Therefore, it is essential to make agreements about the day and time of delivery.
- **Stop time per delivery.** The more additional tasks, the more time the deliverers will need. This includes placing, assembling, or installing products.
- **Qualifications of deliverers.** If a washing machine needs to be connected, it is essential to schedule deliverers who have the right qualifications.
- **Taking back old products.** Appliance suppliers are legally required to take back old refrigerators and washing machines. This requires not only extra time but also cargo space.

The Strength of OptiFlow

OptiFlow also offers advantages in scheduling delivery appointments. The planners can easily see which combination of vehicle and deliverers are nearby and have time and space for an additional assignment. Without a digital route planning system with smart algorithms, it is nearly impossible to plan efficient routes without overlooking crucial restrictions.

Best-in-class algorithms

OptiFlow's algorithm design is the foundation of its exceptional performance. Our state-of-the-art technology tackles the complex puzzle of planning and optimization with ease, comparing billions of possible combinations to deliver outcomes that surpass human calculation. The result is lightning-fast planning and maximum savings, elevating performance to new heights.

GROCERIES AND MEALS

The world of B2C deliveries has rapidly accelerated. The complexity of this market has increased, but thanks to route planning software like OptiFlow, this challenge is being turned into an opportunity.

The Rise of "Online Food Delivery"

- Growing Market: There has been a significant increase in online grocery sales by food retailers such as Tesco, Auchan, Rewe, and Picnic.
- Popularity of Meal Boxes: Newcomers like HelloFresh have become a trend.
- Ready-to-Eat Meals: Platforms like Just Eat Takeaway and Deliveroo have conquered the ready-to-eat meals market.
- Flash Deliverers: Recently, we have observed the emergence of 'flash deliverers' like Flink and Getir.

Online Groceries

Broadly speaking, online supermarkets opt for one of these two planning concepts:

- Free Choice of Time Slots: Consumers can freely choose when they want their groceries delivered. This means extra service, but perhaps a lower load factor.
- Limited Choice of Time Slots: The supermarket only comes a limited number of times per day or week to the neighborhood. The freedom of choice for consumers is lower, but the load factor is higher.

Point of Attention:
For this too, it applies that the consumer must be at home to receive the groceries. A detailed prediction of arrival times and automated communication about it is crucial. Consumers might not stay at home an entire morning. But if they see when the delivery van is nearby, they can adjust their activities accordingly and already open the door.

Meal Boxes

The meal box market continues to grow. The planning of these routes also imposes additional requirements on the route planning system. This often involves multiple addresses for one vehicle with several delivery time preferences. This is where OptiFlow shows its value.

In the dynamic world of B2C deliveries, OptiFlow can help companies operate efficiently and customer-oriented. By investing in advanced route planning software, such as OptiFlow, companies can not only face their operational challenges but also optimize their ROI.

Happy users of OptiFlow

These companies experienced an average substantial cost savings by 15%, scalability, and enhanced speed after adopting OptiFlow.

THE VALUE OF A ROUTE PLANNING SYSTEM

Every day in Europe, hundreds of thousands of couriers hit the road to deliver online orders. These are couriers from national parcel carriers, local delivery companies, online supermarkets, and meal delivery services. Additionally, more and more couriers are needed to deliver larger products such as furniture or appliances and possibly assemble or connect them.

Besides the companies specializing in consumer deliveries, other carriers also see the number of deliveries to individuals increasing. These are carriers who normally deliver shipments to stores, offices, and other businesses that are always open between nine and five. Now, they suddenly find themselves in residential areas, ringing the doorbells of consumers who turn out not to be home.

Common Challenge: Complex Route Planning

All these carriers have one thing in common: route planning that becomes increasingly complex due to the growth in consumer deliveries. An advanced route planning system like OptiFlow helps maintain control over route planning, in part by automatically including time appointments and other restrictions in the planning proposal.

This results not only in more efficient and reliable route planning but also in better service to consumers. And most importantly: significantly lower transport costs. Experience shows that the use of OptiFlow leads to significant cost savings in almost every company. This is crucial in this time when the years of growth in the number of consumer deliveries have come to an end.

Flexibility and adaptability

The software provides transport planners with a comprehensive solution that helps to streamline logistics operations and drive sustainable growth. As the world around us is rapidly changing with new regulations, societal changes, and market trends, OptiFlow offers flexibility and adaptability to help businesses navigate these challenges and stay ahead of the curve.

Healthy profit

Reduce transport costs and increase fleet utilization.

Happy customers

Provide better delivery performance and increase punctuality.

Less air transported

Increase load factor reduce carbon footprint.

HOW DO I CALCULATE THE ROI OF A ROUTE PLANNING SYSTEM?

Market uncertainty forces carriers to quickly adapt to changing conditions. This calls for better, smarter, and faster planning software. But what is the return on such an investment?

How do we maximize transport?
The uncertainty poses challenging transport issues for companies. How do we ensure optimal alignment of available transport capacity with the constantly changing transport needs? How do we ensure enough trucks on the road when we are struggling to fill open driver vacancies? How do we minimize emissions to pay as little CO2 tax as possible in the future?

Better, Smarter, and Faster Planning
The answer to all these questions is better, smarter, and faster planning. Using the latest state-of-the-art planning algorithms. Not the routes from one hub, but the routes of the entire integrated network. Taking into account time appointments, traffic congestion, weather forecasts, and other restrictions such as zero-emission zones. With the aim to reduce transport costs, minimize CO2 emissions, and keep drivers satisfied.

Save up to 20 percent!
OptiFlow is the advanced route planning system that optimally utilizes the available people and resources. Planners working with OptiFlow only need one click to combine ten thousand orders into efficient, green, and attractive routes for drivers. And the most important advantage: time and again, it turns out that companies can save up to 20 percent on their transport costs thanks to OptiFlow's state-of-the-art algorithms. But is that enough to recoup the costs of OptiFlow?

CALCULATING ROI: THE COSTS

The return on investment (ROI) indicates the yield of an investment. The ROI of a route planning system can be calculated by dividing the benefits by the costs. If the result is greater than 1, then the purchase of the route planning system has a positive yield, and the investment costs are recouped.

The question is how long it takes to recoup that investment. Therefore, we not only look at the ROI but also at the payback period. More and more companies apply a maximum payback period of three years. They only approve an investment if the financial benefits exceed the total costs within three years.

Costs of a Route Planning System

Firstly, we must map out the costs. Typically, the implementation of a route planning system involves the following cost components:

- **Hardware Costs:** Most companies still have their own server on which their route planning system runs. OptiFlow works differently. This route planning system runs entirely in the cloud, so there is no need to purchase and maintain hardware yourself. An additional advantage: since the cloud provides unlimited access to computing power, OptiFlow can plan large numbers of orders with various restrictions very quickly.

- **License Costs:** These are the one-time costs for using the route planning system. The amount depends on various factors such as the desired road network (map material), the number of planners, the number of vehicles to be planned, and the need for additional modules. With OptiFlow, companies don't have to buy licenses but use the software as a service (Software-as-a-Service). For this, they pay a fixed amount per month, including service, updates, and application management.

- **Implementation Costs:** The route planning system is not ready for immediate use. Firstly, the software must be set up, and the transport network, vehicle profiles, and planning restrictions must be entered. It may also be necessary to link the software with ERP, TMS, and telematics systems. OptiFlow is a route planning system that is highly configurable, ensuring it always seamlessly integrates with operations.

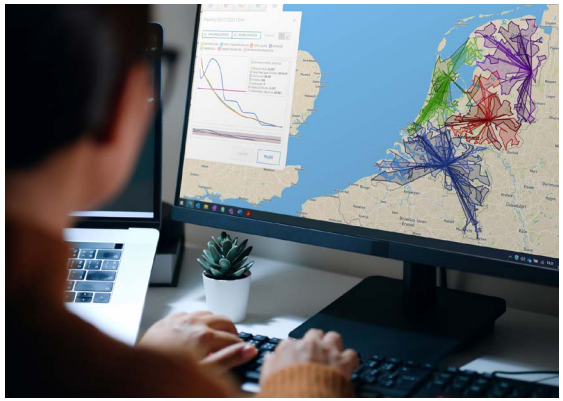
Those who opt for a SaaS solution like OptiFlow pay, in addition to the monthly fee, only a one-time amount for implementation costs. When calculating the ROI, also look at the hidden costs for the company itself. After all, implementing a route planning system requires input from transport managers and planners. Training planners also cost money, as they are not available for their daily work during this time.

CALCULATING ROI: THE RETURNS

Opposite to the costs of a route planning system, there are significant financial returns. We list the most important ones below.

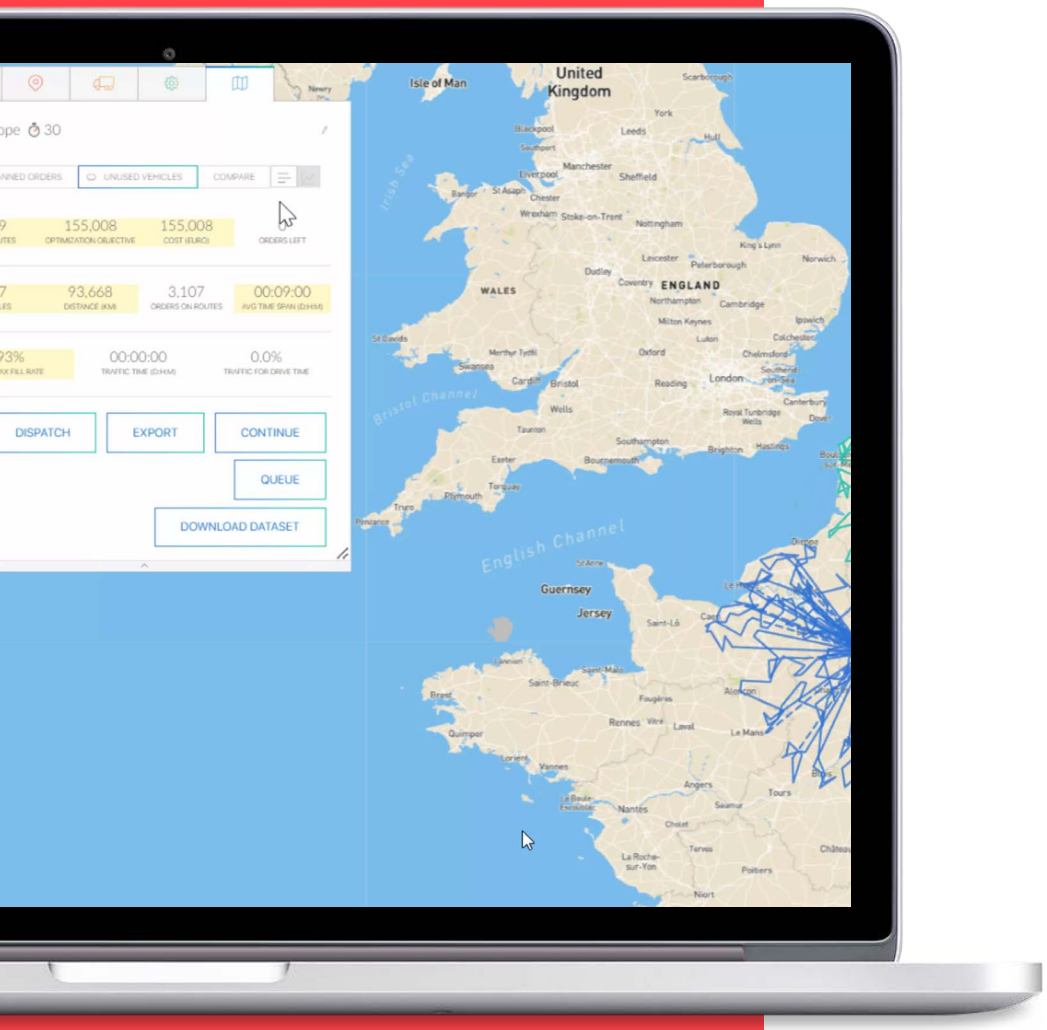
Main Gain: Significantly Lower Transport Costs

OptiFlow features the most modern and advanced algorithms for trip and route optimization. Every company that has started using OptiFlow has seen its transport costs decrease significantly, often by several tens of percent. Why? Because the algorithms are capable of calculating and comparing billions of combinations of orders, vehicles, and drivers in a very short time – combinations that even the most experienced planners overlook. The result: fewer kilometers, fewer hours, and thus maximum savings.



Save on Planning Time and Planners

Manually planning routes is a time-consuming activity. And not feasible as the number of orders increases, as each additional order increases the complexity and hence the planning time. We haven't even mentioned all the restrictions that planners must take into account: delivery agreements, time windows, environmental standards, driving and rest times, load capacity, etc. With an automatic route planning system like OptiFlow, manual planning is no longer necessary. All orders are automatically distributed across the fleet within a few seconds, every day again. This saves valuable planning time, thereby increasing the 'span of control' of the planners. In other words: the planners have time left for other tasks.



More Efficient Deployment of People and Resources

Every fleet consists of capital goods that, of course, must be used as efficiently as possible. As long as trucks are not fully loaded, a transport company incurs costs with no corresponding revenue. Moreover, if it is not possible to optimally distribute the orders across the fleet, more trucks and thus more drivers are needed. An automated route planning system like OptiFlow calculates with one click which combination of orders results in the highest loading rate and the greatest productivity. The result is immediately on your screen: the trucks are fuller than ever before, and the drivers handle more orders than previously.

More Insight into Transport Costs

Finally, saving costs naturally begins with insight. Insight into transport costs and the different cost components. A route planning system provides that insight. Every day, week, or month, a transport manager generates management reports in a few clicks that show what the performances and costs are. A route planning system is an indispensable link in data-driven business operations. Every planning is saved, creating a wealth of data about all trips, customers, vehicles, and drivers. Data that is essential to structurally reduce transport costs.

Additional Benefits from Route Planning Software

Experience shows that an investment in OptiFlow is quickly recouped, solely due to the saving on transport costs. The fact that OptiFlow also leads to a reduction in planning time, more efficient deployment of people and resources, and greater insight into transport costs, is additional profit.

DISCOVER OPTIFLOW

Advanced cloud-based route optimization technology for fully automated planning.

Embrace the future of transportation planning, where efficiency meets customer-centricity. Maximize operational efficiency, minimize costs and meet customers' demands for superb, predictable, and on-time delivery.

Fully automated process
Long-term succesfully automated planning.

6x faster planning
Reduce planning time from hours to minutes.

15% average savings
Reduce your transport costs and maximise your fleet utilisation.

Up to 10k orders
Can be optimized in a single plan.

High-performance algorithms
Maximum efficiency, minimize costs.

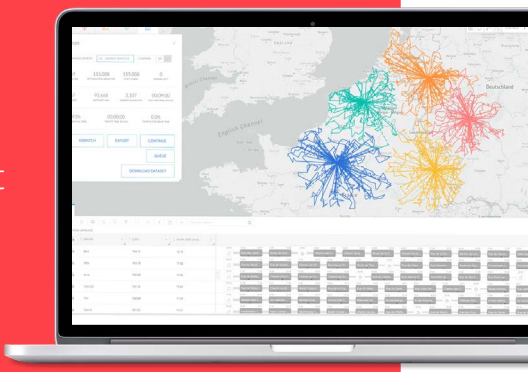
Ground-braking solutions
Reduce your fleet utilisation.

Happy users of OptiFlow

DYNALOGIC PERSONALIZED LOGISTICS · SPAR · Ahold Delhaize · HELLO FRESH · Quickpac Same Day Delivery · CleanLease Because you care · Simon Loos

Get started in 5 steps!

1. Create a new plan
2. Upload your orders
3. Upload a vehicle set
4. Indicate constraints
5. Optimize & Adjust



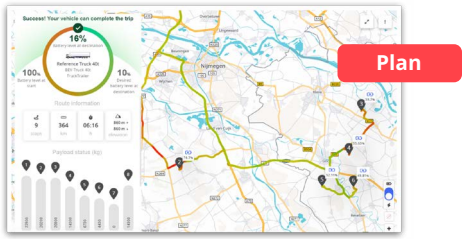
Unlock your hidden savings potential!

REQUEST A DEMO →

OUR PRODUCTS

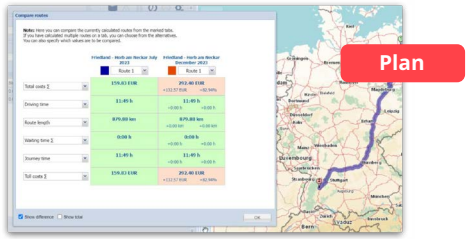
Customers in more than 120 countries boost the efficiency and transparency of their logistics, along with employee and customer satisfaction by using our software solutions. Discover our portfolio and find the solution that will enable you to optimize your transport processes.

Plan. Optimize. Execute.



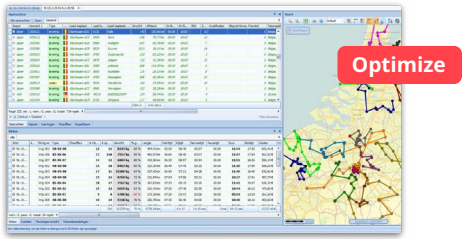
EV Truck Route Planner

Scan our database for suitable commercial eTrucks & eVans. Compare their performance and range, and plan their routes.



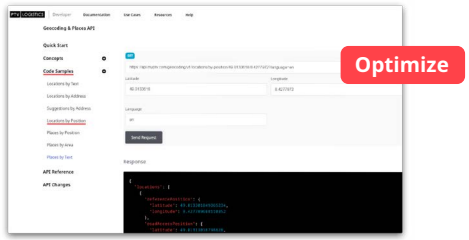
PTV Map&Guide

Efficient truck route planning and transport cost calculation.



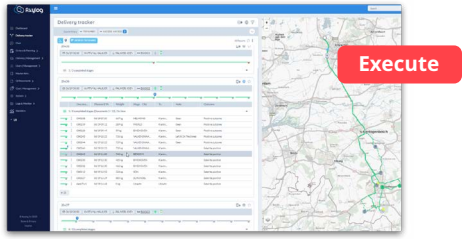
PTV Route Optimizer

Route Optimization & delivery routing that unlocks the full potential of vehicle fleets.



PTV Developer

PTV Developer offers high-performance APIs that enrich your software solution with logistical and geographical functions.



PTV Axylog

Cloud platform to track and manage transport in real-time: transport visibility.

PTV Navigator

Truck navigation with up-to-date maps and traffic data.

Why PTV Logistics?

Plan. Optimize. Execute.

Unlock your savings potential and make your transport and delivery operations more efficient with our cutting-edge software.

Our commitment lies in empowering all types of businesses, ranging from startups to enterprises. Whether your operations encompass manufacturing, retail, home delivery, or any transport-reliant industry, we enhance your endeavors.

With the software of PTV Logistics every route is optimized, every decision is based on data, and all shipments remain monitored, transitioning seamlessly from the planning phase to flawless execution.

300+
employees global

20+
locations all over the world

40+
years of experience in transport & logistics

15%
average savings on transport costs

Our customers

Ahold Delhaize · HELLO FRESH · DHL · dpdfresh · DYNALOGIC · Simon Loos · Emons · DB SCHENKER · Unilever

We exist to empower businesses, reduce costs, and minimise environmental impact.

Plan. Optimize. Execute.

Routing, optimization & real-time visibility technology

With the software of PTV Logistics every route is optimized, every decision is based on data, and all shipments remain monitored, transitioning seamlessly from the planning phase to flawless execution.

REQUEST A DEMO →

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