Truly profitable rail freight operations: Are you there yet?

Place optimal decisions at your fingertips with dynamic pricing and scenario planning

QUINTIQ

You have a vision: You want to boost your rail freight business performance and make profitable planning decisions every single time. This means you need to ensure that your operations run at peak performance at all times. However, the road to optimized rail freight operations is fraught with obstacles.

As a rail freight operator, you must balance conflicting goals. Your clients expect your services to be reliable, affordable and traceable. Your shareholders expect maximized returns. Your employees expect you to accommodate their personal needs and preferences. And safety regulators expect you to comply with labor regulations.

Managing volatile demand in the market is another major challenge. Today's customers are looking at other modes of transportation that offer higher flexibility and better price. Without an effective way to predict capacity and quote optimal prices, operators struggle to balance supply and demand. As a result, resources are often underutilized or overutilized, and profits suffer.

Is this your norm? It doesn't have to be.

Go beyond your current planning approach

If you want to know what's happening right now, you probably have a traffic control system that is more or less real time – it shows you the recent past and perhaps a few hours into the future. It can also predict what's going to happen before the end of the shift.

Go further into the future and you suddenly have all these possible futures. And the outcomes of these futures are not equal. In some cases, you may have lost that important order to your competitor. In other cases, you may have exceeded expectations and won a loyal customer.

Yet if you ask your planners how many alternative schedules they considered, they will admit that they stopped the moment they reached one that seemed good enough. With an infinite number of possibilities, what are the chances your planners just happened to land on the most profitable plan?

40% of your orders arrive shortly before the day of operations or on the day itself. You can make a rough plan based on data and forecasts, but the operational plan can only be finalized – and optimized – on the day of operations.

And while orders are usually placed in the short term, other areas need to be planned in the long term in order to benefit from better prices.

Locomotive planning is a great example.
Your planners go through a lengthy and iterative process that involves detailed capacity planning at an early stage (up to a year in advance), but customer demand is known only several days beforehand.

As your planners scramble to put together a plan that makes business sense, they must not neglect to satisfy key constraints. For instance, railcar planning requires taking into account constraints such as car type, execution time and movements of cranes. As for planners at rolling stock maintenance centers, their considerations include maximized maintenance orders within limited tracks and optimal usage of people, machines and tools.

These are just a few of the many complexities you face in rail freight planning. With optimization, you get a plan that satisfies all business rules and constraints while delivering the best KPI-centric results possible.

Your plans change all the time due to unpredictable market conditions, from demand planning stage until the day of operations. Be sure that your planning approach gives you flexibility to modify the plan quickly when circumstances change or disruption hits.

Go further. Discover the two planning elements that will completely change the rail freight game.

Maximize revenues with dynamic pricing

Your pricing consultant is responding to a query from a customer. After listing his requirements, the customer requests for a quotation. Your consultant's ability to answer this — promptly and optimally — has a direct impact on the overall profitability of your company.

Dynamic pricing uses data and analytics to predict customer behavior and, taking into account all rules, constraints and market factors that affect your business, it prescribes optimal prices benchmarked against business KPIs.

Rely on dynamic pricing to predict rolling stock utilization, future demand, revenue and price sensitivity.

Rolling stock utilization
Rolling stock utilization greatly influences pricing — the higher the utilization, the higher the price. A price optimization solution gives consultants real-time visibility of rolling stock utilization as its capacity is consumed and predicts the prices they can quote to customers. You can take into account last-minute changes (e.g. cancellations) to predict how full the railcars will be by the time they leave the yard.

Future demand
You also want a price optimization solution that can help you calculate optimal prices based on predicted future demand.

Revenue
Rail freight operators are able to predict costs accurately, but not revenue. Because most are already slashing operational costs, the only other way to increase profits is to increase revenue. A price optimization solution enables you to predict revenue per train as accurately as possible.

Price sensitivity
The ability to predict the price sensitivity of a customer and therefore, generate higher revenue per train, is powerful. Take, for example, a train with low capacity utilization. By reducing the price marginally, you can increase the demand considerably and generate more revenue from the same train. On the other hand, if capacity utilization is high, you can increase the price up to, but not beyond, the point your customer is willing to pay (price sensitivity) and increase your revenue for the same demand.

Make the most profitable decision every time with scenario planning

A customer needs to make an urgent delivery to Los Angeles in two days. Your planner checks on capacity and realizes that an additional train movement is required to fulfill the order. Does your planner accept or decline the order? How will company KPIs be affected?

Answering what-if questions, also known as scenario planning, is essential for continuous business growth. Scenario planning is a disciplined method for imagining possible futures – specifically, futures that are aligned with a company's business goals and respects all key constraints. The right technology gives you the freedom to explore multiple and diverse options, dramatically improving the effectiveness of the planning process.

With scenario planning, a forecast is no longer a single number but a bandwidth of possibilities. By using agile and flexible technology that includes a powerful optimizer, changing your forecast becomes as simple as revising your assumptions.

You can easily simulate change and then optimize plans in line with your key performance indicators. You're able to compare optimized scenarios by KPIs relating to profit, costs, utilization, on-time delivery, empty car miles and annual vehicle mileage per year. You can then assess the potential profitability, efficiency and sustainability of each configuration. This gives you:

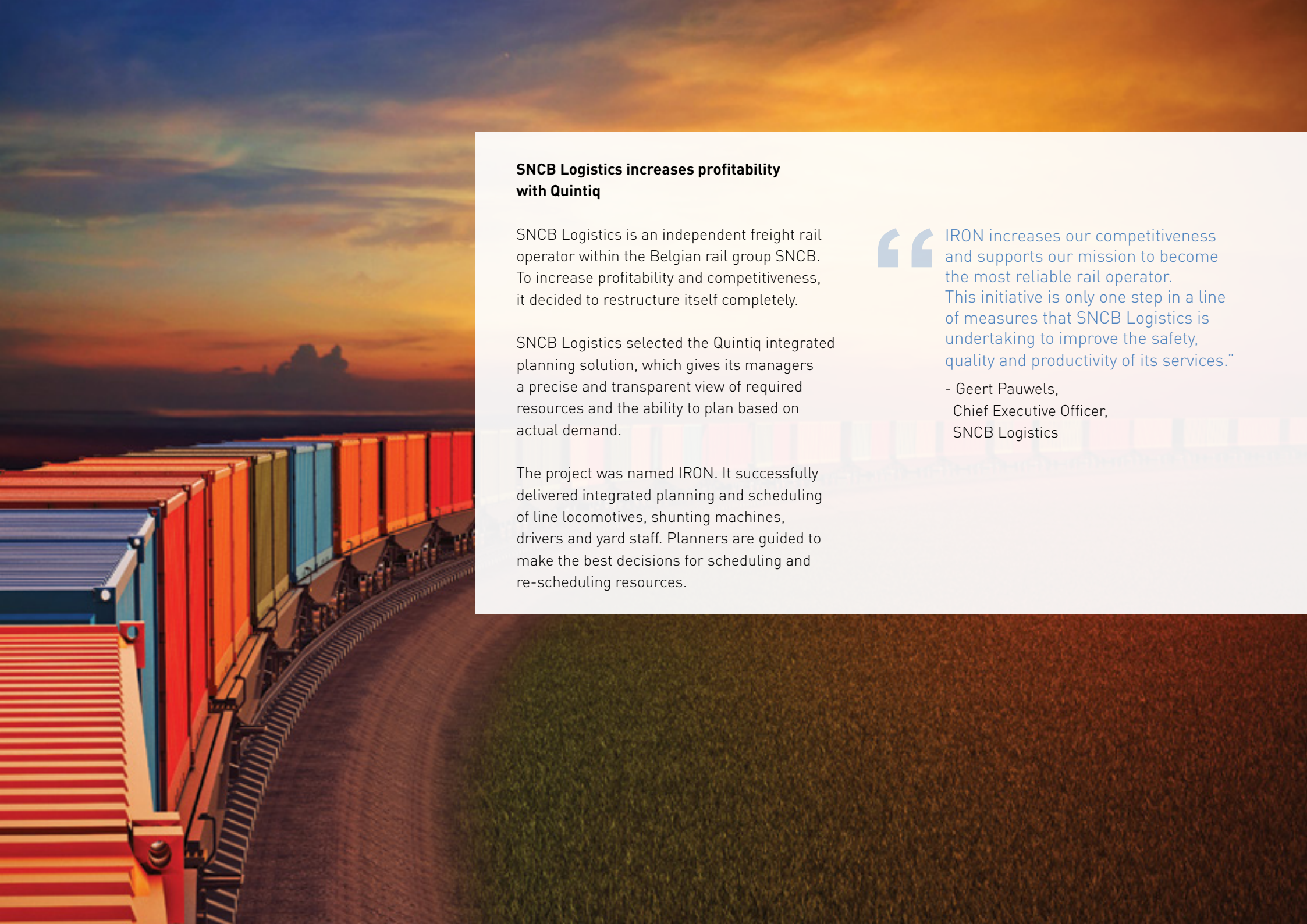
- Higher service levels
- Optimal capacity planning
- Increased utilization of rolling stock
- Lower operational costs

A planning solution that fulfills your vision

Truly profitable rail freight operations is achievable. Quintiq's intelligent planning approach is driven by dynamic pricing and scenario planning capabilities, so you get exactly what you need to boost your rail freight operations and remain competitive in the market.

The Quintiq planning solution also gives full visibility of your operations, thus enabling real-time management and optimization of logistics and resources.

Whether you need efficiency in railcar planning, locomotive management or maintenance center operations planning, the solution is configured to respect all of your business rules and constraints. This includes train capacity, logistics constraints and contractual requirements. Its flexibility allows you to adapt to the realities of doing business.



SNCB Logistics increases profitability with Quintiq

SNCB Logistics is an independent freight rail operator within the Belgian rail group SNCB. To increase profitability and competitiveness, it decided to restructure itself completely.

SNCB Logistics selected the Quintiq integrated planning solution, which gives its managers a precise and transparent view of required resources and the ability to plan based on actual demand.

The project was named IRON. It successfully delivered integrated planning and scheduling of line locomotives, shunting machines, drivers and yard staff. Planners are guided to make the best decisions for scheduling and re-scheduling resources.

> IRON increases our competitiveness and supports our mission to become the most reliable rail operator. This initiative is only one step in a line of measures that SNCB Logistics is undertaking to improve the safety, quality and productivity of its services."
>
> - Geert Pauwels,
> Chief Executive Officer,
> SNCB Logistics

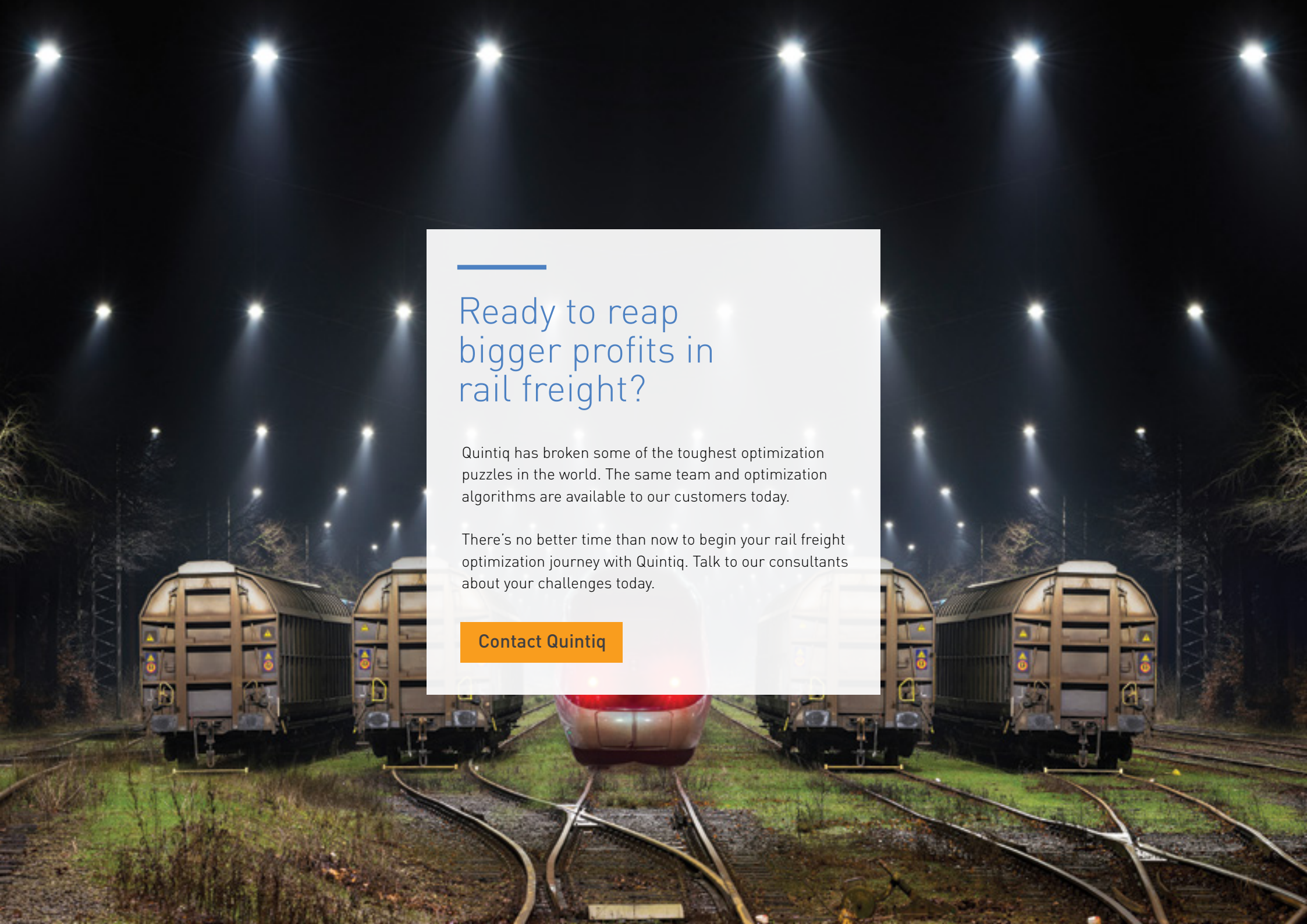
Green Cargo improves bottom line through integrated scheduling

Green Cargo is a national and international rail freight company. It operates in over 300 locations in Sweden and Norway, and is responsible for almost 70% of freight transport by rail in Sweden.

The Quintiq solution integrates the scheduling of Green Cargo's 433 locomotives, 750 shunters and 950 drivers. Green Cargo now has a single, comprehensive solution for planning and scheduling its rolling stock and crew. The solution calculates all salary-relevant components and evaluates complex working time regulation rules. It is interfaced with the human resource system, the order system and various infrastructure management systems.

In addition to scheduling Green Cargo's rolling stock and crews, Quintiq provides real-time operations management to help Green Cargo's planners confidently handle daily and last-minute scheduling disturbances.

> "To reach our resource utilization goals, we implemented an integrated advanced planning solution that would optimally schedule our rolling stock and crews in a single application. Quintiq had the solution to all our demands."
>
> - Björn Rosell,
> Chief Information Officer,
> Green Cargo



Ready to reap bigger profits in rail freight?

Quintiq has broken some of the toughest optimization puzzles in the world. The same team and optimization algorithms are available to our customers today.

There's no better time than now to begin your rail freight optimization journey with Quintiq. Talk to our consultants about your challenges today.

Contact Quintiq

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