

Optimized planning
tools lead rail
company to key
insights, big savings

CUSTOMER
Green Cargo

LOCATION
Hallsberg, Sweden

INDUSTRY
Transportation





Challenge

- Update processes and locomotive planning system
- Optimize inefficient scheduling of locomotives
- Gain insights to plan for the future



Solution

- DXC Rail Cargo Management Solution (RCMS), customized to provide a locomotive optimization system
- Integration with legacy systems
- Reporting and analytics tools



Results

- Optimization allowed for use of six fewer locomotives
- Locomotive productivity increased up to 10%
- Increased visibility and analysis that improves operational performance and planning



Optimized planning tools lead rail company to key insights, big savings

The locomotive planning system at Green Cargo was becoming dated, making it hard for the Swedish rail company to get the most out of its fleet of 400 locomotives, which in turn made it almost impossible to accurately plan for future growth. Were more locomotives needed, or could Green Cargo optimize what it had and maybe even use fewer?

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— Jonatan Gjerdrum
Head of transport planning,
Green Cargo

“Locomotives are expensive and one of the main resources for Green Cargo,” says Markus Gardbring, operations director at Green Cargo. “You need to have exactly the right amount and the right types of locomotives.”

After an exhaustive review of 14 potential upgrades to the locomotive planning system, Green Cargo brought in DXC Technology’s rail cargo management solution (RCMS), part of DXC’s Smart Places and Things capability. This was customized to provide a locomotive optimization system called LOOP that enabled Green Cargo to get the most out of its fleet, reduce costs and provide a solid foundation for planning.

Before LOOP, Green Cargo typically rented locomotives to meet demand and often didn’t know how many and what types of locomotives it needed to support its future strategy, Gardbring says.

What the company needed, says Jonatan Gjerdrum, head of transport planning at Green Cargo, was a way to achieve a

“higher level of automation in terms of planning, better integration with other systems in our software landscape and new functions for optimization. We wanted to optimize all the locomotives at the same time, we wanted timetable optimization and we wanted date optimization. But we really wanted to reduce our locomotive fleet. That was the end goal.”

The plan DXC put forth was a fixed-price, approximately 1-year-long project that delivered a hosted version of the LOOP Locomotive Optimization System. LOOP is based on DXC’s core RCMS, used by many customers throughout Europe and hosted in a DXC data center.

LOOP has been integrated with several of Green Cargo’s legacy systems. For example, railway infrastructure data and timetables are imported from the railway infrastructure manager, and LOOP exports locomotive plans to legacy crew planning and operation management systems.

100,000

Number of kilometers of travel saved by improving turnarounds and boosting productivity

Up to 10%

Increase in productivity in terms of kilometers per locomotive

LOOP stores infrastructure history and maintains all the information necessary for locomotive planning, including data about what type of locomotives are used, where they are used and what they are doing.

The project wasn't without its challenges. "One challenge was the complexity of the problem, which turned out to be quite big," Gjerdrum says. "We had to use an iterative approach, a very high degree of cooperation to find the solutions. We also faced a lot of hardware issues we had to resolve, and DXC had to really take in all their global knowledge to solve these issues."

Solid returns

The end results are dramatic. The optimization effort revealed the company could eliminate six of its locomotives. "The key value-add that DXC provided was that we now know exactly what types of locomotives and the number of locomotives we need for an optimized solution," says Gjerdrum.

Another key benefit is increased productivity. "The productivity of the locomotives is measured in kilometers per locomotive," Gjerdrum says, "and that has gone up by 5 to 10 percent since we introduced LOOP."

Other benefits:

- Green Cargo has many types of locomotives, and in the previous solution, it could optimize only one class of locomotive at a time. LOOP lets Green Cargo optimize everything at once, which makes it easier to balance the different locomotive fleets.
- LOOP makes it easy to change the timetable with respect to the locomotives instead of the other way around, so Green Cargo can do reverse planning and change timetables to more efficiently move the locomotives.
- For planners, it used to take a long time to determine the order in which to dispatch the locomotives. LOOP automates that process.

"LOOP has enabled new opportunities in terms of the way we plan, but also enables us to take on new business quickly and evaluate different scenarios with respect to the future. The LOOP project has moved the partnership with DXC from being a platform provider to serving as an integral part of designing our processes and our solutions."

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Going greener

Environmental considerations and benefits are key. Green Cargo is a leader in sustainable transport, with corporate targets to reduce greenhouse gas emissions. “What LOOP does is that it improves the standstill/turns time between tasks, thereby reducing the ‘white space’ in between,” says Gjerdrum. Reducing the amount of time that locomotives idle, improving turnarounds and boosting their productivity translate into a savings that’s worth more than 100,000 kilometers.

In addition, LOOP helps ensure that locomotives are where they need to be. And while the locomotives’ total travel distance has not changed, Green Cargo is able to operate with fewer of them.

Overall, these improvements have led to a reduction in greenhouse gas emissions, contributing to Green Cargo’s efforts to achieve a greener and more sustainable planet. “This project has been a great success,” says Gardbring. “We’re taking on more customers with less cost with the fleet we already have.”

Gjerdrum echoes that sentiment: “I think the LOOP project has been one of the best projects in recent years. It’s delivered, especially within the realms of quality and cost. LOOP has enabled new opportunities in terms of the way we plan, but also enables us to take on new business quickly and evaluate different scenarios with respect to the future. The LOOP project has moved the partnership with DXC from being a platform provider to serving as an integral part of designing our processes and our solutions.”

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