

# Data as a gold mine: the best route to profitability

From KPIs and business analytics to artificial intelligence.



# Get started with data for a healthy logistics company.

After the financial crisis in 2008, things are going well. The demand for logistics services and turnover is increasing. Some are even talking about the largest revenue growth in 7 years. Nevertheless, there is a small side note, because, despite all the positive things, the return is lacking behind. In 2018 it turned out that 27% of the transportation companies made no profit and 10% even lose money. How comes? Well, it turns out, logistics service providers sometimes do not know whether an order is profitable or loss-making. However, implementing a price increase does not immediately offer the desired effect. Because how do you know exactly where you are missing out on sales?

## The reason why logistics is the ideal industry to take advantage of the power of data

The logistics sector is originally a data driven industry. Every analysis, decision and planning is made based on previously recorded data. For a long time the idea prevailed that the amount of recorded data was inherently related to the competitive position of a company. This resulted in huge data warehouses and endless databases. This data has been built up in all those years and is recorded in a structured way. However, practice shows that at least as much data can be found in an unstructured form.

Until recently, there was no way to make this (unstructured) data suitable for analysis. With the exception of a few data miners that could at most extract analyzes from which only a reactive response was possible. In other words: based on historical data, it was possible to identify where the ship was heading in the wrong direction.

In the era of business analytics and AI you can use this data to not only respond responsively but even pro-actively and predictively. For example, processes can be started up fully automatically instead of manually and offering service is not standardized but personalized.

## DATA HAS A BETTER IDEA.

Loading  
degree  
73,56%



Average turnover  
per truck 12,82k

# Insight into the costs and revenues per trip

A thorough analysis can greatly improve your understanding of the current status of your company and its profitability. It can give you insight into the financial bleeders and at the same time, it also helps you to better demonstrate your costs. Allowing you to strengthen your hand at the negotiating table with customers. More and more companies are therefore looking into the opportunities on how to gain insight into the costs and revenues per trip. That is an obvious question in itself, but the challenge with this question is how do you allocate the revenue of an order to a trip? Which methodology would be the best option to retrieve this information? And is there already a structure available in order to do so? The same question applies when looking at costs. Because how are the costs of a trip - from a truck, trailer, driver and/or charter - assigned to an order? In order to gain insight into the revenue per order and/or the costs per trip.

## Dividing revenues

To be able to divide the revenues from the order to the trip, there are three best practices:

- **(un)loading section:** The revenues are allocated to the loading/unloading address.
- **Equally per section:** The revenues are evenly split per route, regardless of the distance.
- **By section distance:** The revenues are divided pro rata to the kilometers traveled.

## Dividing costs

In order to be able to divide the costs over the underlying orders, the Carbon Footprint can be used. You can use kilometers and a custom defined entity for this. For example, loading meter or volume. You calculate the kilometers from or to the depot for each trip, multiplied by the entity that you have specified. The total of all trajectories in a trip gives a ratio which can be used for the allocation. The advantage is that this results in the purest possible calculation.

**Carbon footprint:** Divide the costs per route as a ratio of all trajectories distances x an entity (f.e. weight, load meters or volume).



## The calculation moments during the process

Often there are different calculation moments during the process. For example, the moment when you receive an order. In other words, the pre-calculation that you make; you have a cost and revenue pattern in mind with which you expect to make a certain margin on an order. But it is possible that halfway through the process - for example after you have planned the order and you have received the costs of the charter - that the mid-term calculation differs from what you previously estimated with the pre-calculation. And you also have to deal with the actual costs. What are the final costs and revenues once you have completed the trip?

## The most common KPIs for transport

### Performance per truck

What are the average costs and revenues per truck? And what are the costs per trip? By mapping these variables, you can easily calculate the performance per truck.

### Margin per route

It goes without saying that the number of kilometers required for deliveries in, for example, the inner city of London differs from a trip Berlin - Glasgow. Depending on the tariff agreements, you can compare the costs and revenues per route to calculate the turnover.

*"When considering ROI on implementing technology, don't only look at the investment as cost and recovery of cost, but think of how this creates value for your customers, how you improve the productivity of your employees, what impact does it have on your culture and public image, will embracing technology give an advantage over competitors, and so on."*

*Source: [Clarke, 2018](#)*

### Performance per driver

What is the number of kilometers per driver per hour compared to the standard time? Or what is the number of loading/unloading per driver? By measuring productivity, you know exactly how many trips and deliveries you can process with the current occupation. As a result, the number of required resources can also be better aligned with the actual workload.

### Margin per service

Which services have been invoiced and what costs have been incurred in doing so. With the help of data, you can calculate the margin per service and provide insight into the trend over a period.

### Occupancy rate per truck

More euro pallets can be stored in the loading space of a trailer than block pallets. In most cases, therefore, loading meters are used. As soon as it is known how much space is available, it is possible to calculate how many pallets fit.

### Financial

What are the opportunities in terms of turnover and what are the financial bleeders? By linking budgets to activities and hours, revenue can easily be measured per activity, period, driver, trailer, truck and/or customer. For example, it is possible to create an overview of your top 5 customers or the average turnover per tractor is.

### Turnover per area

When you handle the transportation activities for clients in different regions, it may be interesting to calculate what the revenue per area is. By comparing the performance of different areas, you quickly get the required insight into where the most beneficial opportunities lie for your company.

# The next step: data as a driver, AI for predictive power.

The desire to put data at the heart of organizations is growing day by day. Central databases - the so-called "control tower" - enables everyone in an organization to have access to a single source of truth, making correct analyzes possible again. Measurement brings knowledge, and it enables you to make informed decisions. Business Analytics is being used more and more by logistics service providers to gain better insight into how things work within their organization. In the coming years, however, the focus will be increasingly on Artificial Intelligence (AI).

## Data analysis & AI, what is the difference?

The difference between data analysis and AI is in the predictive power of the latter. Based on the past and registered trends, the system is smart enough to alert you to points of concerns. Is the occupancy rate of your fleet at the maximum, while last year around the same period a large number of orders were suddenly submitted? Then the system gives you a warning allowing you to take immediate action.

## What is Artificial Intelligence?

Let's start at the beginning. What is Artificial Intelligence? Until now, scientists have been unable to precisely define the concept of 'intelligence', so defining the artificial variant is not conclusive either. But we are going to try it anyway. Basically, AI applies to devices or systems that proactively and predictably deal with data and impulses from their environment. Based on this input, they then take decisions themselves. Within the world of AI, six different forms are currently distinguished:

1. Machine learning, deep learning and neural networks
2. Natural Language Processing (NLP), speech recognition, converting from speech to text;
3. Computer vision (recognition of images, interpretation and conversion into analysis and action)
4. Machine reasoning (making policy and making decisions based on learning algorithms)
5. Business Analytics and Data Science (processing structured and unstructured data)
6. Robots and sensors

### Artificial Intelligence within logistics

Many people see Artificial Intelligence as a threat, where it will completely replace their truck drivers, for example. Although this is a possibility in the distant future, it is more likely in the short term that AI can, for example, help you in the area of customer satisfaction through more customer-specific approaches. Or planning your transport movements more efficiently thanks to real-time processing information from different sources. The possibilities are applicable to every logistics sub-area and that makes AI so interesting and far-reaching.

*"Transportation companies should not only have to use their data to keep costs under control but also to see where they can add more added value. And should start taking bets on that through a new business model."*

*Source: Sector study Transport and Logistics, A better return with a data-driven IT strategy*

### AI: the most promising development

Many aspects show that now is the moment for logistic companies to get aboard. Never before AI was as mature, reliable and affordable as it is today. Without you realizing it, Artificial Intelligence is omnipresent. For example, it determines the life of the battery of your smartphone by predicting which apps you are going to use today. Or how about the video games your children play? The computer-controlled opponents act on the basis of AI, by anticipating the behavior of the human opponent. Not to mention self-driving cars, personal advertisements by retailers and 'smart' thermostats. In short: AI is everywhere.

### The logistics branch is ready for AI

So the technology can be found in many places. But (still) little in logistics. While the logistics sector is originally a data driven industry. Every analysis, decision and planning is made based on previously recorded data. For a long time the idea prevailed that the amount of recorded data was inherently related to the competitive position of a company. This resulted in huge data warehouses and endless databases. This data has been built up in all those years and (if done correctly) is recorded in a structured way. However, practice tells us that at least as much data can be found in an unstructured form.

Until recently, there was no way to make this data suitable for analysis. But tools like Power BI did offer the possibility to gain insight in the most relevant KPIs. Enabling you to make the right decisions in no-time and respond effectively.

In the AI era, logistics service providers can exploit this data even better. In addition to acting responsively, proactive and predictive acting is applicable. Processes can be started fully automatically and services are not standardized but (on a large scale) personalized. Consider, for example, personal advertisements from large retailers as Amazon: by mass collecting data, the service is improved on a personal level by means of data and algorithms.

And that's just the beginning. There are plenty of opportunities for logistics service providers with which they can tailor their services even better to customer needs and get a better grip on their revenue model.

# A head start with AI

For you as a logistics company, it is currently important to investigate in which areas AI might be relevant and where you can achieve quick wins. At Boltrics we do this in consultation and collaboration with our customers. Where they can indicate in which fields or directions they see the most potential for AI.

Of course, we also keep a close eye on developments in the field of AI. For your organization, our own and most of all driven by personal interest. In doing so, we are provided with up-to-date information from Microsoft, where people are constantly looking for new application possibilities of AI. Next, we will look for ways to offer *cutting edge technology* to maintain the lead in this *efficiency driven market*.

We understand very well that it is a considerable task for logistics companies to switch from a reactive analytical attitude to an AI driven proactive and predictive attitude. That is why we keep an eye on developments for you and in the coming period we will also go for an industry-wide, future-proof solution in which we learn from the current business with the use of future technologies. That is what we stand for and we do so with full conviction.

## Do you have a question or ideas?

Are you curious about the potential use of Artificial Intelligence? Or are you already buzzing with ideas and have ready-made requests concerning AI? We would love to hear them, so do not hesitate to contact us.



## Your partner for success

Boltrics and PL Solutions are experts in the logistics sector with a proven track record of helping small and midsize businesses transform using the right technology solutions. We specialize in 3PL- and cold logistics and are ready to help you take the next steps on your path to success. We take the hassle out of implementation, upgrades, and routine maintenance of your business solutions so you can focus on what matters most.

PL solutions is the Canadian Boltrics parnter focusing solely on developing the market and implementing the Boltrics solution “3PL Dynamics”.

Learn more from PL Solutions at : [solutionspl.ca](http://solutionspl.ca)



### Our solution

Knowing that logistics service providers independently try to reinvent the wheel, inspired Boltrics to develop a branch standard. One solution that the entire branch puts its weight behind. A proven standard, always state-of-the-art solution – thanks to the development power of Microsoft Dynamics 365 Business Central. Fast, lean and decisively implemented by Boltrics, exactly according to plan. Without time-consuming customization.

