



## Mitigating the Driver Shortage Crisis

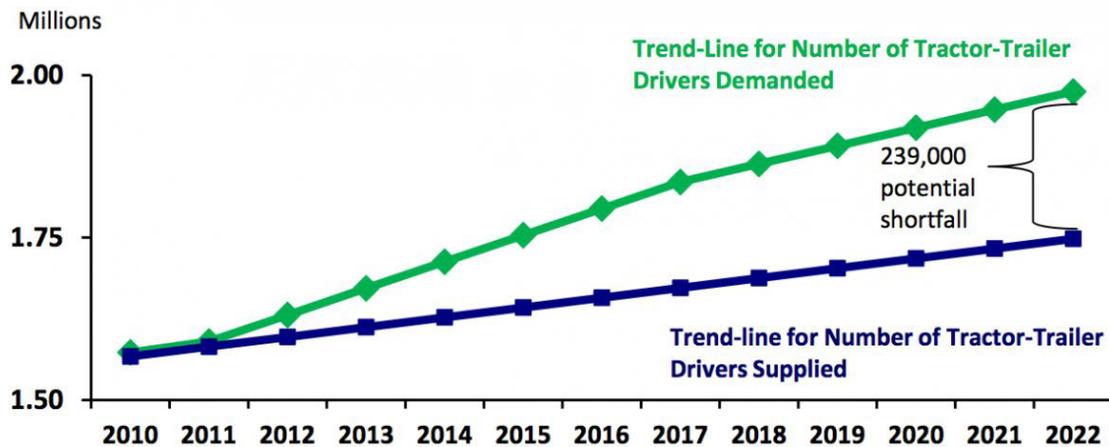
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## Trucking Talent Crisis...How Did We Get Here?

Transportation is a crucial element in the supply chain to deliver the right goods on time to the right customer. Due to increasing service requirements, traffic, and increasing legislation, it becomes more challenging to remain efficient. According to *Yahoo Finance*, higher driving costs and lower pay have contributed to a truck-driver shortage that will likely to worsen in the coming years. The American Trucking Associations (ATA) estimates the U.S. is short 30,000 truck drivers and that number is expected to surge to 239,000 by 2022. Why? One reason is in July 2013, new federal hours-of-service rules went into effect, and the key provision was a limit to the use of a 34-hour "restart."



NOTE: On Tuesday, December 16, 2014, President Obama signed the FY 2015 Omnibus Appropriations Bill into law, officially suspending the two restrictions on the use of the 34-hour restart. As a result, the requirement for two periods of 1 a.m. to 5 a.m., and the limit on using the restart more than once every 168 hours, is no longer enforced. Motor carriers may now follow the restart rules that were in effect prior to July 1, 2013.

Drivers are limited to a weekly on-duty period of 60 hours, or a 70-hour limit if operating at least one truck seven days a week. A driver can reset this cap to zero if they take 34 consecutive hours off, as noted in the FY 2015 update above. However, according to a survey from the American Transportation Research Institute (ATRI), more than 80% of motor carriers have experienced a productivity loss, with nearly half saying they require more drivers to haul the same amount of freight. Additionally, there is a huge challenge to obey the federal rules while staying competitive in the market from a pricing perspective.

## Why the Scarcity of Drivers?

Trucking companies are refusing hundreds of truckload shipments every day because they don't have drivers. The amount of revenue lost by carriers, and the overages paid by shippers for not using their primary carriers is staggering. Here are several reasons for this scarcity:

- Truck driving can be unpleasant. With extensive time away from home, the stress of traffic, and varying demands of the shipper/receiver/carrier, and pay is often relatively low.

- Government regulations, including driver hours-of-service limits, electronic monitoring of driver logs, etc. A cap on the number of days that drivers can work, and a relocation of distribution centers closer to customer bases, make deliveries more frequent, yet less profitable for drivers, according to *USA Today*, May 18, 2014.
- During the recession, many drivers left the industry and found other professions. Post-recession, drivers can find better pay and more time at home with employment in the re-covering construction and housing industry.
- Difficulty attracting new talent. Younger drivers expect mobile technology allowing real-time communications as well as diagnostic tools for their trucks.
- Studies indicate that the overall US workforce will consist of 40% millennial age workers by 2020. Research by ATRI shows that the rate of these age workers in the trucking industry continues to decrease, posing a troubling combination of trends for the trucking industry.
- Commercial Driving Licenses are not obtainable until age 21, and almost all insurance agencies will not cover driver without at least 2-years of experience, most wanting to see 3-4 years. This means potential workers coming out of technical high-schools or college certificate programs at age 18-19 are unable to directly enter the trucking workforce, and find employment elsewhere.

Trucking companies are providing paid training and signing bonuses, yet are still unable to reduce turnover rates. Pay rates for drivers are rising, but those costs are passed on to shippers in the form of higher freight rates, and then to the products they ship. As a result, shippers are often frantically searching for carriers to haul their loads. Carriers in turn do not have enough drivers and continue to leverage 3PL freight brokers to identify anyone who can transport their loads.

Service is suffering on all fronts. Since high pressure exists to optimize the production or warehouse logistics on one side, and similar pressure from customer demands on another side, transportation becomes squeezed in between the two. This may even lead to impossible input or very critical situations, resulting in violations in practice. The stress on drivers puts their safety and security at risk and threatens the transportation industry's reputation.

## Focus and Investment in “Human Infrastructure”

Logistics is complicated. It requires many modes of transportation, complex systems, and billions of dollars of infrastructure investment to move our products and freight to every corner of the globe. However, at its core, sitting behind those complex systems, and driving the trucks, trains, boats, and planes are people. This “Human Infrastructure” is beginning to gain more attention and companies are now leveraging their workforce as a true competitive advantage more than ever before.



*If you want a balanced life, I think you have to get home most nights. Haulers do not have a balanced life.*

~Jack Paulden, Commercial Truck Driver

The required collaborative nature of the logistics industry has enabled the rapid growth of Third Party Logistics (3PL) providers for many years to what was estimated by Armstrong & Associates in 2014 to be over a \$154 Billion industry in the U.S. alone. This model of shippers and manufacturers laser-focusing on their core business and leveraging other experts (i.e. 3PL's) to handle logistics functions has naturally begun to extend into the "human" side of the business as well.

The troubling trends discussed previously regarding driver shortages, and the evolving needs of a younger, more technology enabled workforce will demand employers be increasingly creative and flexible in order to remain competitive in tomorrow's economy.

To this end, shippers and manufactures are frequently considering the benefits of a dedicated transportation service which can create much needed reliability in moving their goods via truck. This dedicated fleet service is most often provided or managed by a 3PL. In addition to the care and value of the truck, the drivers themselves must now also be managed and treated with the same level of importance as the truck itself, if not more.

One welcome development in this regard is 3PL's providing a dedicated truck service and shippers with an existing private fleet of company trucks are now often either hiring a driver manager to focus on driver quality of life and needs, or partnering with a company specializing in logistics work-force management and solutions. Workforce focused service providers are often referred to as Fourth Party Logistics Providers (4PL's) and work in seamless concert with the control of the day-to-day logistics operations managed by the 3PL or shipper.

By creating this focus on driver importance, wellness, unique and consistent training requirements, special logging and paperwork demands, companies will greatly increase productivity, safety and driver retention while reducing healthcare costs and workers compensation premiums. This "driver friendly" environment created through partnership has been shown to be a powerful and effective tool in differentiating shippers and manufacturers, and resulting in improved recruiting and retention of safe, qualified, and reliable drivers and logistics workers.

In all, this translates into a more reliable supply chain with products arriving on time with minimal interruption making our national economy more stable.

## Leveraging Transportation Optimization

Many shippers and transportation companies severely underestimate the importance of an efficient transportation strategy. To remain competitive and grow, companies must take a deeper look at the end-to-end distribution and transportation network. At a strategic level, consider a redesign to better respond to current conditions and costs. At a tactical level, develop a methodology to continuously re-evaluate the supply chain and transportation network to adopt optimal structure and routes. At an operational level, construct optimal routes daily to achieve optimized resource utilization. We describe the steps in more detail below.

## Step 1: Develop A Transportation Strategy

By using supply chain modeling technology companies can create a business model for their entire supply chain network, incorporating alternate transportation options and key variables such as cost, time, capacity, and delivery parameters. Typical methods at a strategic level include optimizing the amount and size of DCs, reassigning the right inventory at the right DC, and assigning the right customers to the right DCs. The impact of transportation synergy between DCs and/or hubs is important to consider when centralizing transportation planning. The desired fleet mix and their ideal home base is very relevant. Typical evaluation steps:

- Build a baseline to visualize and assess the current situation, and consider alternative modes of transportation.
- Select whether or not to outsource certain lanes and when to use private fleets. Fleet optimization enables businesses to create multi-stop routes with the right fleet mix. This balances optimizing fleet size, while identifying efficient multi-stop vehicle routes and maximizing the utilization. TNT Express, for example, has reconsidered the entire European DC and line haul structure given the impact of the driver crisis and the change in volume.

## Step 2: Tactical Transportation Optimization

Companies like Walmart, Coca-Cola and Restaurant Technologies Inc., have developed a transportation optimization strategy and then executed it brilliantly. At a tactical level, the infrastructure and assignment of inventory and customers to DCs are given, and delivery schedules made for the coming period with the right fleet mix. The objective is to optimize the desired frequency, delivery days, and volumes for each delivery address, while obeying the minimum and maximum stock levels and minimizing the overall supply chain costs. These costs include: inventory cost, transportation cost, and workforce cost both at the DC and the customer.

For customers with seasonal, weekly, or daily patterns, there are a lot of opportunities to balance the workload over these periods. Typical savings are about 5 – 10% cost reduction per volume, and much better utilization of resources. These are resources at both the DC and receiver, and drivers as well. Avoiding peaks leads to lower stress levels and more convenient schedules for the drivers, less overtime and a reduction in outsourcing cost. Coca-Cola has seen very positive results in reviewing their schedules at a tactical level. This not only involves driver schedules, but mobile workforce schedules as well, including sales reps and merchandisers. Streamlining this entire process, while fulfilling the service requirements, improves both customer and employee satisfaction, while also contributing to the financial targets of the company.

## Step 3: Operational Optimization

At an operational level, routes need to be constructed daily, or in real-time, taking all requirements and conditions into account. Typically, this includes capacity and time window restrictions, but the optimizer should also take working time directive and driving time legislation rules into account. These rules not only influence the amount of rest a driver must have on individual days, but due to the new federal hours-of-service rules, it is important to obey the 70-hour-a-week cap. In addition, drivers can have contracts for a minimum/maximum

Thus, the payment of overtime is reduced significantly by balancing the usage of the drivers. Complying with labor rules and taking the right driving and stop time into account, leads to more accurate schedules for the drivers, increasing their satisfaction level and decreasing stress. Considering forecasted and actual traffic jams, weather and road conditions, contributes to more on-time arrivals, and improves both user and driver experience without adding cost.

## Step 4: Align the Supply Chain

During execution, ad hoc changes can enter the schedule. Typically, this can be rush pick-up orders to be assigned to the right truck, or dealing with a traffic jam. Rapid response is required to meet the agreed service levels without introducing extra operational costs. The planner should be informed at an early stage about estimated arrival times, in particular, those related to the agreed time windows.

The user should have the capabilities to apply meet-and-turn or drop-and-hook opportunities, and to get proposals to assign unplanned pick-up orders to the right resource. Apps or portals about the schedule should inform drivers, customers, management, and DCs, aligning this part of the supply chain. Results? Respect the driving time legislation and maximize customer service without losing efficiency.



## Use Technology to Attract & Retain Talent

There are clearly strong benefits for optimization:

- Compliance to routes, DOT rules/regulations, etc. is accomplished by reviewing the expected driving and stop time, including expected traffic congestion and other aspects. Thus, more reliable and feasible tasks are assigned, yielding an increase in employee satisfaction.
- Optimizing drivers allows them to do more with less. Typical cost savings are at least 5%, with an average of 10% when considering the optimization more at a tactical level.
- Servicing the customer, not over servicing. Using the overview in dashboards, KPIs and SLA-agreements with customers, a trade-off can be made between service and associated cost.
- Providing drivers a better lifestyle – smartphones to communicate with (face time) and routes that get them home every day.

## Case Study: Restaurant Technologies Inc.

Restaurant Technologies Inc. helps more than 10,000 McDonald's restaurants serve up America's favorite French fries by keeping their cooking oil clean and managing its disposal. With over 20,000 restaurant customers, Restaurant Technologies needed to optimize its truck routing, reduce distribution costs, improve customer service and streamline technology integration for drivers with handheld devices.

Even with having higher than average driver retention, the driver shortage crisis is also a major concern for Restaurant Technologies. With a dedicated fleet of trucks, the delivery equipment is highly specialized. This requires CDL drivers who are trained specifically for this equipment. As a growth company, it is imperative for Restaurant Technologies to recruit, hire, and retain their driver staff.

With the help of the ORTEC team, Restaurant Technologies reduced cost of delivery by 15% and significantly improved customer service ratings. By optimizing their distribution, they could leverage their extra capacity and invest in growth. Since partnering with ORTEC, Restaurant Technologies has increased their customer base by almost 50% and significantly increased their serviceable distribution network.

As Restaurant Technologies continues to grow, so does their need for safe and reliable driver talent. As new markets and established markets grow at different rates, the need for drivers fluctuates between distribution centers. With the help of ORTEC, Restaurant Technologies route planning department, continuously adjusts serviceable markets in order to meet the demand of their growing customer base. By investing and leveraging the ORTEC optimization software, Restaurant Technologies continues to grow and provide top notch customer service.

## Conclusions

1. Companies need to re-think and re-design their supply chain transportation strategy. This should also include a review with a "workforce centered perspective" which might include length of routes, geographic location of depots and DC's and their surrounding pools of workers, quality of trucks and equipment.
2. Companies must recognize that truck drivers are the face of the company – brand ambassadors – and the attraction of a needed younger workforce will require the deployment of updated technology and integration of optimization programs.
3. Shippers and manufacturers should continue to consider partners to manage essential elements of their logistics operations. This should also now include their logistics workforce, and particularly commercial truck drivers, as a focused and important area of investment.

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## About ORTEC

ORTEC is a leading provider of advanced analytics and predictive commerce solutions. Our team specializes in helping companies meet big data analytics challenges in the areas of fleet routing and dispatch, vehicle and pallet loading, workforce scheduling, demand driven transportation forecast-ing, dynamic network planning, and warehouse control. ORTEC offers both Windows and SAP® certified and embedded solutions in the cloud. ORTEC solutions also integrate with and compliment strong relationships with industry partners in ERP, Mobile/Telematics & S&OP. In addition to having the honor of being named winner of the 2012 Franz Edelman Award for Operations Research Excellence with TNT Express, ORTEC recently won awards from *Computerworld*, *Supply Chain Brain*, *Consumer Goods Technology*, *GBC Health* and *InfoWorld*. ORTEC has over 2,000 customers and 750 employees worldwide.