BEYOND TRUCKS

BEYONDTRUCKS INSIGHTS:

TOUGH TIMES AHEAD FOR TRUCKING COMPANIES

OPPORTUNITIES IN ELIMINATING HIDDEN PROCESS COSTS

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Executive Summary

After two years of supply chain disruptions, 2022 threw another wrench into the well-oiled business engine that many trucking companies had built for decades: **cost inflation** - particularly painful in light of declining freight rates - first starting in the spot market, then spilling over into the contract market towards the end of the year.

While these external factors are largely outside of trucking company owners' control, the cost of processes trucking companies use can easily be influenced, namely the cost of processes. Our survey of 367 motor carriers shows that poor processes cost trucking company owners a whopping $9,700 per driver per year; larger trucking fleets spend disproportionately more on processes, as managerial complexity and need for controls increase with fleet size.

Costs at this level erode net margins for many carriers by 50-70%, meriting focused attention. In our paper, we highlight a four-step approach that helps carriers identify and eliminate process costs. While traditional process re-engineering can be effective, workflow automation technologies offer an additional and more impactful avenue to stop the ongoing erosion of operating margins. Process automation is no easy task and requires the combined effort of operators and technology providers, through collaborative vision building, applying the latest advancements in automation technology, and thoughtful incorporation of humans in the loop for better control, happier employees, and more loyal customers.

History has shown that inflationary periods propel automation by offering competitive advantage to those who embrace it and eliminating those who don't. Amongst all the pain inflation inflicts on the trucking industry, the silver-lining is that it will push America's economy to new levels of logistics competitiveness.

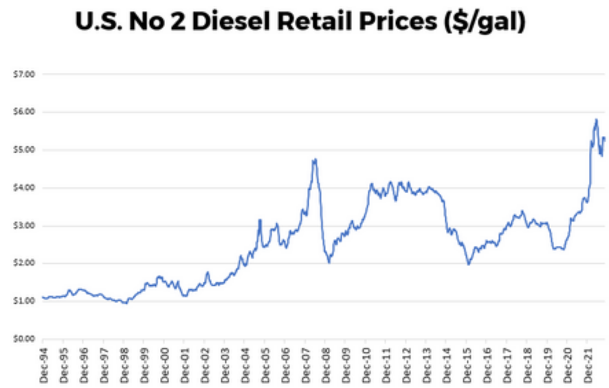
Tough Times

2022 has been a year of a significant economic reset. Many of the assumptions we have held for long have stopped holding true, as decades of economic growth and low inflation have given way to the opposite.

Consensus forecasts for US GDP growth show a dwindling in expectations, dropping from 1.9% in 2022 to 0.2% and 1.5% in 2023 and 2024 respectively. Inflation, on the other hand, has been rampant with consumer prices up 8.8% year to date, amongst which US diesel prices, in particular, being up 41% YoY in November after having peaked at a historic high of $5.81/gallon in the third week of June. [1]

GDP	**2022E**	**2023F**	**2024F**
% YoY	**Estimate**	**Consensus**	**Consensus**
World	3.0	2.4	3.0
U.S.	1.9	0.2	1.5
China	3.9	4.9	4.8
EU	3.3	-0.1	1.6

Source: Bloomberg, Morgan Stanley Research



Source: EIA

Motor carriers have so far had little reason to be optimistic about 2023. Spot demand in 2022 cratered, as DAT load posts dropped 51.8% YoY by October. By the same token, spot rates for dry van freight declined 15.8%, foreshadowing an imminent softening of contract rates from shippers, too.

A recent survey of carriers and shippers published by Echo Global Logistics showed that 71% of carriers do not expect any improvement in demand in 2023. Interestingly, shippers are less pessimistic with 53% of them expecting demand not to drop and an additional 35% forecasting an increase in load volumes.

[1] Morgan Stanley, 11/2022; EIA 11/2022

Where are Opportunities for Carriers?

Over decades of working in cyclical downturns, our team at BeyondTrucks has learned what mindsets and behaviors amongst owners and their management teams correlate with success across multiple market cycles, translating into companies that show sustainable business success.

We found that the most successful carriers have a strong ability to reframe: they understand that cyclical market forces such as freight rates and diesel prices are external and largely outside their control; while they manage those forces, they become acutely introspective, analyze their business, and focus on things within their control, namely their internal processes and workings. Very much like an athlete who builds strength through successive cycles of bulking (to increase muscle mass) and cutting (to increase definition and endurance), they leverage downcycles to trim the fat that has accumulated in their business during the good times.

Take for instance a 350-driver flatbed carrier in Kentucky. In 2021, the company started selling off ⅓ of its trucking inventory not only monetizing on the cyclicality of equipment prices, but also to create room for the organization to restructure its internal operations. The team started revisiting its internal organizational structure, division of labor, workflow, as well as tools and technologies.

To help this process of introspection, we decided to publish this white paper aggregating findings from our ongoing work with motor carriers.

Conducting Process Cost Assessments

Process Cost Assessments involve the systematic review of carriers' workflows. BeyondTrucks conducts process cost assessments as a customary part of helping carriers understand their own internal workings. By reviewing the processes and workarounds a trucking company's tools inadvertently create in its daily operation, this cost analysis goes beyond a superficial review of the ticket price a carrier pays for its tools and technologies and quantifies the "true cost of tools".

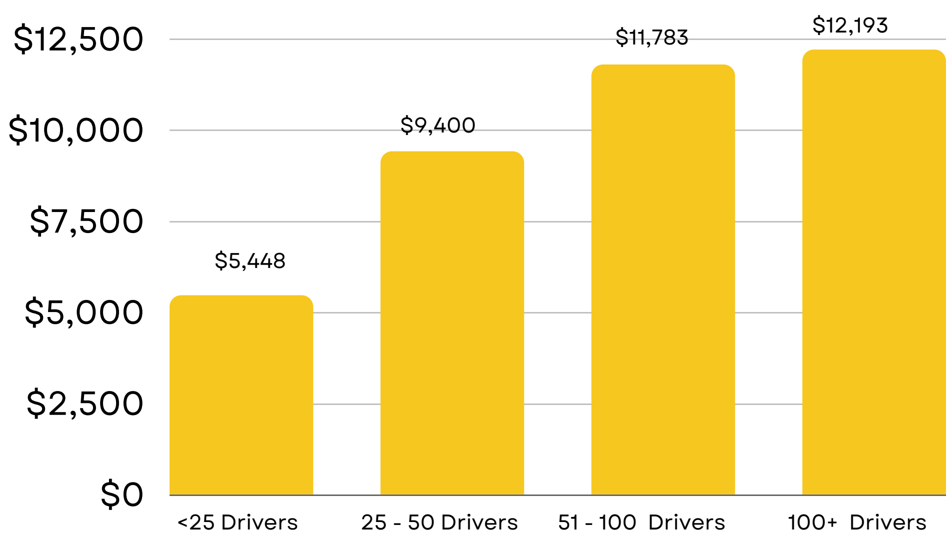
Very much like a comprehensive physical, process cost assessments are often a sobering exercise, that is followed by increased self-awareness and behavioral change. Carriers can single out areas where tools and workflows create material costs to the business and then direct resources toward them, including management attention, staff, or technology.

Take, for example, the case of a 25-driver carrier out of Ocala, FL. A review of their internal processes showed that it took the carrier 10 days after a load was delivered to issue an invoice; add to that 3-5 days of mailing time. The true cost of their invoicing process was estimated at $44,000, where the carrier's net margin per truck was approximately $8,500. The carrier used this information to revisit their invoicing workflow and now incentivizes their team to invoice 95% of their loads within 24 hours of delivery. The impact of solving this process issue was as valuable as increasing the fleet by 5 drivers from 25 to 30 drivers.

Process Cost is Significant

Summarizing our findings from cost assessments of 367 motor carriers in 2022, we found that motor carriers spend an unnecessary $9,700 per truck per year on poor management processes. While smaller carriers run a tight ship and owners have direct control over operational execution, they also have few economies of scale. Process costs of $5,448/driver may seem low in absolute terms, but a 90-95% operating ratio easily correspond to a 50% erosion in net margins.

PROCESS COST FOR FLEETS BY SIZE



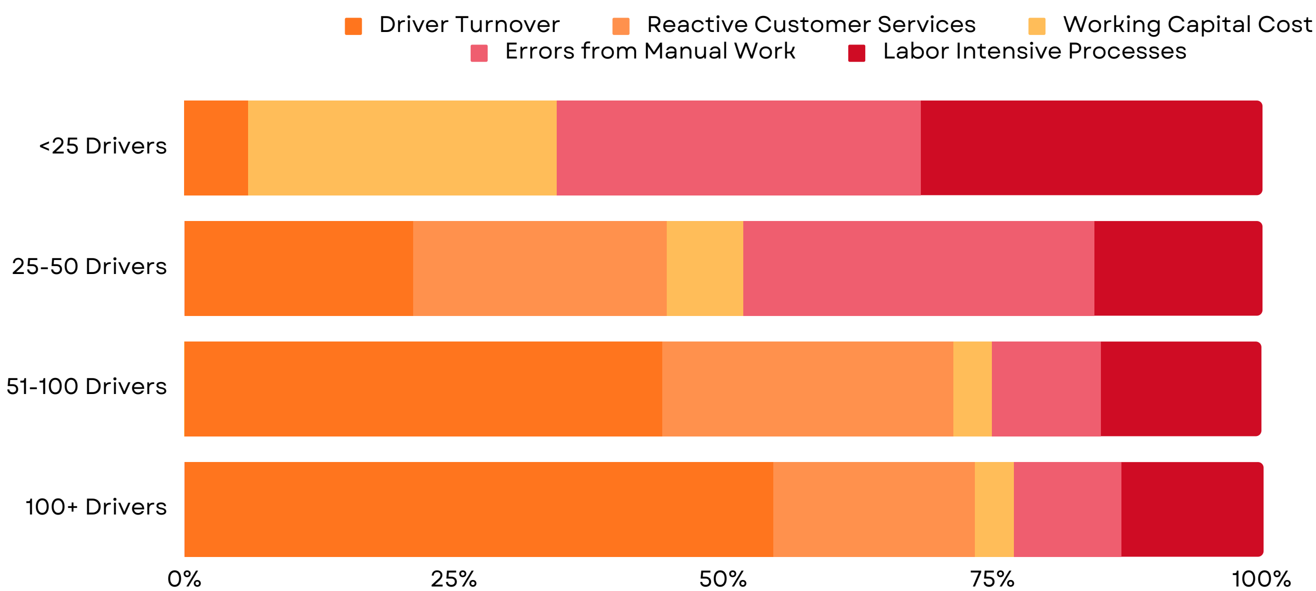
Source: BeyondTrucks Research

Process costs rise with carrier size, as the complexity and management challenges organizations face increase. While large carriers benefit from better economies of scale when purchasing fuel, equipment, or accessing capital, they use expensive human labor to solve management challenges by building layered organizations, having humans double or triple check things or inadvertently are more challenged to retain drivers or provide quality customer service. On top of that, for larger fleets, cost numbers get compounded by fleet size: a 100-driver fleet spends $1.2M per year on poor processes; we most recently had a 700-driver fleet spending $15.5M per year due to poor work flows and an antiquated tech stack.

Cost Sources Vary by Size

Our research shows that the root causes of process cost vary based on size. For small carriers, menial labor-intensive processes, human error, and working capital costs contribute almost equal proportions to the $5,400 cost per year.

In our conversations, small carrier owners speaking of "not having time outside of work" and complaining about their "dependence on factoring" are clear symptoms of these costs.



COST SOURCE FOR DIFFERENT SIZED FLEETS

Source: BeyondTrucks Research

As carrier size increases, we find that the cost of poor processes and tools manifests itself increasingly in the form of driver turnover and customer losses. First, the driver turnover observation is consistent with the American Trucking Associations' findings that the small fleets in 2021 saw about 70% annualized driver turnover whereas large fleets are closer to 90%. While certain parts of driver turnover are clearly structural or involuntary, any workflow, management process, or tool that aggravates voluntary driver turnover only by a small percentage will generate material costs for that fleet. Similarly, the materiality of key accounts with larger fleets generally is so big that even small servicer failures can cause a material hit to the business.

Tools & Their Costs

It was perplexing to us that there's little to no correlation between the direct costs of a tool (aka "ticket price") and the indirect cost such a tool generates in a carrier's operations. For instance, google sheets are often referred to as "free", but generate massive indirect operating costs; contrarily, we have also found carriers who spend more than millions of dollars a year on technology and still deal with indirect costs as high as if they were using google sheets to run their business.

Take for example the case of a mid-sized flatbed carrier operating on a legacy TMS for the last 40 years. Ownership proudly pointed to the direct annual cost of the system only being $200k. Yet over those 40 years, the organization has built a complex patchwork of point solutions, excel spreadsheets, google sheets, and homegrown applications to make up for the shortcomings of the core system. The effort to double and triple-check data probably prevented some of the more obvious human errors, but fragmented processes and data flows created driver turnover and customer service failures of nearly $20M in cost per year. In sum, we found the indirect cost of the tools and processes in this case to be close to 10x of the company's annual spend on the core technology.

4 Steps to Develop a Cost Reduction Strategy

The biggest opportunities to develop cost reduction strategies lie within trucking companies. To helps carriers quantify the magnitude of costs and devise solutions to reduce them, our team has developed a four-step framework.

Step 1: Define Your Focus

Before delving into solutions, it is useful for management teams to adhere to Albert Einstein's adage: "If I had an hour to solve a problem I'd spend 55 minutes thinking about the problem and five minutes thinking about solutions."

We recommend carriers consider an unbiased, objective assessment of the true cost of their tools and processes. This step is absolutely critical and will yield significant clarity. We have also learned that taking inventory of your current processes is a critical step for transportation teams that needs to be led by senior management in a non-fearful, collaborative environment. A collaborative stock take of core workflows, especially those that connect the organization across teams, departments, or entities usually, can help identify significant hidden costs. Frequently involving key customers and drivers in these efforts can yield additional information.

Our team has completed this in ways as simple as ballpark estimates and as complex as reviewing staff processes with time and motion studies.

However, process cost assessments can result in a litany of fragmented information that risks becoming an organizational drain to the team. Therefore, teams need to critically assess "what really moves the needle". The outcome of a process cost assessment should be a focused list of workflows and their associated costs.

Step 2: Develop A Thoughtful Strategy for Process Automation

Addressing the cost of processes is painful. Systems may have grown into a messy mix of manual, semi-manual, and digital workflows. Processes have hardened into place through habit. Developing a cohesive and appealing vision of the future can be a helpful tool to motivate change amongst staff and see adoption.

Automation strategies to reduce process costs should not be developed in a vacuum. but compared against the merits of alternative analog options to deal with the process cost. The following questions can help:

- Fundamental process assessment:
  - Why does the process exist?
  - How good is the current process at fulfilling this objective?
  - Does the cost of the process justify its benefits?

- Option assessment
  - Can you simply drop the process or re-engineer it without technology?
  - Can "self-service" by stakeholders in the process reduce the need for automation?
  - What new technologies exist to address this problem?

- Future impact assessment
  - How can these new technologies fit into your longer-term evolution as a company?
  - How can you build an organizational culture that welcomes automation and fits into your culture?

Step 3: Execute Your Automation Strategy

Identifying technology providers that align with your core focus area identified in your cost assessment and offering strategies to eliminate process costs is the next critical step.

Given the amount of behavioral changes switching technologies implies, we recommend carriers select providers with cutting edge technology, strong teams, and institutional backing.

The transportation industry, like many others, has seen a strange mix of non-institutional software providers without the talent or capital to grow and a concentration of legacy players that barely meet the state-of-the-art.

Step 4 Assess Impact

Successful automation strategies are ongoing iterative processes that involve feedback loops and continuous improvement. Measuring impact is not always easy as benchmarks are difficult to determine and human behavior is highly adaptive as work habits change. Consistently tracking data on dashboards and discussing behavioral changes amongst your teams can help you ensure that cost-saving goals are achieved. We also found staff-redeployments effective for companies to ensure they realize the savings on automation associated with human labor.

One example would be a 25-driver carrier that had 4 full-time equivalents to manage all back-office operations from recruiting over dispatch operations to accounting. The carrier identified manual dispatch processes, load building, invoicing, and driver settlements as the main cost sources. The carrier leveraged automation technology to (a) build a driver-self dispatch strategy and (b) automated load building, invoicing, and driver settlements. After a 3-month roll-out, the carrier had reduced its back office team from 4 full-time equivalents to 1.5 full-time equivalents.

IMPLEMENTING AN AUTOMATION

The following activities can be useful measures in implementing your strategy to eliminate process costs and manage change.

Collaborative Vision Building

Restructuring workflows can be intimidating for teams, especially as team members' roles are at stake. We found that building vision-led consensus usually starts with a collaborative process amongst a number of key executives. Patrick Lencioni's Five Dysfunctions of Teams or Howard Goldman's Choose What Works offer frameworks that help leaders navigate this process. Ownership and senior executives play a key role in their willingness to be vulnerable and introspective in front of their staff, signaling that there can be tremendous value in self-critical assessments.

Assess Automation Opportunities Systematically

McKinsey & Company provides a pragmatic framework for assessing the various automation tools available for motor carriers covering robotic process automation (RPA), Smart Workflows, Data Visualization, and artificial intelligence/machine learning (ai/ml). See the graphic on the following page. Our team at BeyondTrucks has deep experience in conducting transportation-specific assessments for carriers of different sizes.

Prototype Automation

Test your team's receptiveness and create excitement by creating quick prototypes.

- Replace manual logging of data on paper-based forms with web-forms
- Instead of manual data entry by an employee (e.g. load building) automate data transfer
- Substitute a robotics solution for manual processing and checking of data

Build a Culture of Efficiency

Thoughtful process automation in motor carriers is not about the pipedreams of an autonomous trucking future. Like a pain killer, process automation stops wasteful spending in areas that are happening every day.

As process automation covers “how you do business”, it ties directly into your company’s culture and the people. Embracing a culture to “work smarter rather than harder” or creating rewards for employees finding “hacks” to shortcut processes is a critical way to imbue your organization with a spirit that avoids cost creeping back in.

Moving into the Future

As technologies change, it is critical to develop automation solutions that have resilience and staying power: they need to be flexible, modular, and can be scaled up or down. Knowing that vehicle automation will ultimately become part of a fleet automation strategy, choosing providers that can be complementary to such strategies in the long term is critical.

History has shown that inflationary periods propel automation by offering competitive advantage to those who embrace it and eliminating those who don't. Amongst all the pain inflation inflicts on the trucking industry, the silver-lining is that it will push America's economy to new levels of logistics competitiveness.

Functionality	Impact	Maturity	Speed	Ease of Implementation	Mechanism
Robotic process automation • Automate routine tasks through existing user interfaces • Use Optical Character Recognition (OCR) to recognize text	2	4	3	3	• Reduce manual tasks • Improve quality of routine tasks: through existing UI • Avoid human error & reduce manual checks **Result: reallocate human capacity, cut cost**
Smart workflows • Automate workflows that involve multiple handoffs among people, robots, and other systems	3	3	2	2	• Free-up, expedite, and re-allocate human capacities by integrating tasks performed by groups of people and machines **Result: reallocate human capacity, cut cost**
Data visualization • Use advanced visualization and enable self-service analytics	4	3	2	2	• Reduce manual repetitive tasks • Create higher quality, real-time transparency & analyses • Improve customer experience **Result: reallocate human capacity, cut cost**
AI/machine learning • Invest in technologies that recognize patterns and support making data-driven predictions/decisions	4	3	1	1	• Automate knowledge work across business • Improve decision making • Improved controls • Reduce human error **Result: reallocate human capacity, cut cost**

Source: McKinsey & Company, BeyondTrucks

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About the Authors

A former fleet owner with deep experience in operations, private equity, and scaling businesses to more than $1bn, Hans brings operational, strategic, and financial expertise to technology applications in the trucking industry. You may contact him at *hans@beyondtrucks.com*.

Hans Galland

Chief Executive Officer

An expert in supply chain management, technology, and product development. Paul became obsessed with dislocations in traditional industries where technology plays a critical role in improving efficiency and resolving frictions. You may contact him at *paul@beyondtrucks.com.*

Dr. Paul Xie

Chief Operation Officer

With experience in the digital transformation of traditional businesses and scaling of new ventures, she's our carrier customers' lead champion, overseeing the company's growth efforts. You may contact her at *kay@beyondtrucks.com*.

Kay Makishi

Chief Growth Officer

Looking back on more than 20 years of managing fleet operations, Natasha brings deep operational expertise to our team. Her talent to zoom out from tactical execution to strategic insight takes her from the loading dock to the board room. You may contact her at *natasha.martinez@beyondtrucks.com.*

Natasha Martinez

Head of Customers Success

About BeyondTrucks

BeyondTrucks powers great trucking companies by streamlining and automating their day-to-day operations, giving them time and control back to focus on what matters. Combining smart technologies, data, and embedded financial services, BeyondTrucks is the first trucking process automation platform that seamlessly connects operations, finance, and people.

Led by former fleet owners and experienced operators Hans Galland (CEO, private equity, Stanford Graduate School of Business) and Dr. Paul Xie (COO, ai-chip company Lightelligence, Harvard Business School), the company is backed by leading global institutional investors with deep expertise in automation technology, logistics, and vertical SaaS.

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