Comparing Fleet Super Operator, DIY TMS, and Traditional Outsourcing for Small/Mid-Size Trucking Fleets

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Authors: Dinesh C, Eric Tong

Executive Summary

Small and mid-sized trucking fleets (1–250 trucks) face a critical strategic choice in how to manage their operations and technology. This white paper evaluates three models: **Fleet Super Operator (FSO)**, **DIY TMS (do-it-yourself Transportation Management System)**, and **Traditional Outsourcing**, analyzing their impact on key performance indicators (KPIs), costs, staffing, and overall business outcomes. An FSO is an emerging hybrid model where a third-party partner provides an integrated **"managed operations + technology"** solution, allowing fleets to retain ownership of assets and authority while outsourcing day-to-day logistics and leveraging advanced systems. In contrast, a **DIY TMS** approach means the fleet implements its own TMS software and manages all operations in-house. **Traditional outsourcing** refers to fully contracting operations out – for example, **leasing onto a larger carrier or hiring a 3PL/managed transportation provider** – thereby offloading operational tasks at the expense of direct control. Each model entails trade-offs in **ownership burden** (the workload and responsibility the fleet must carry) versus **operational visibility** (the level of transparency and control over freight, drivers, and service performance).

In this paper, we compare these models across financial and operational metrics, using industry data and case examples. We present a 2×2 framework plotting ownership burden against operational visibility (Figure 1) to illustrate where each model lies. Detailed KPI comparisons (service levels, cost efficiency, safety, etc.) are tabulated with documented benchmarks. We develop a **total cost of ownership (TCO)** model to show how costs and required staff scale as a fleet grows under each approach. A decision-making framework is provided: a scored **rubric** (with a worked example) and a self-assessment questionnaire (Appendix E) to help fleet owners determine "Which model fits me?" given their specific situation. We also include a **definitions and measurement** reference box for clarity on terms and KPIs, and a **due diligence checklist** highlighting what to consider when evaluating vendors or solutions.

Overall, our research finds that **Fleet Super Operator (FSO) models can offer small fleets a balance of lower operational burden with high visibility**, essentially providing enterprise-grade capabilities "as-a-service." DIY TMS in-house management gives

maximum control and visibility but at the cost of significant management effort and overhead – which only larger fleets can efficiently absorb. Traditional outsourcing minimizes internal workload but often sacrifices transparency and agility. The best choice depends on each fleet's size, growth ambitions, operational complexity, and priorities in cost vs. control. Table 1 provides a snapshot of how the models compare on key metrics. In general, **very small fleets (under ~10 trucks)** often struggle with the fixed overhead of DIY and may benefit from either leasing on with a carrier or using an FSO to achieve scale advantages. **Mid-sized fleets (20–100 trucks)** can justify some in-house infrastructure but still may find value in FSOs to boost performance. **Larger fleets (100+ trucks)** tend to have the volume to efficiently insource with a TMS, though even they may outsource select functions to optimize costs. Each model has inherent pros and cons – this paper delineates those in detail and provides tools to guide an objective evaluation.

Methods at a Glance: This white paper's findings are based on a combination of industry research and modeling. We analyzed data from authoritative sources including the American Transportation Research Institute (ATRI) for cost and performance benchmarks, Federal Motor Carrier Safety Administration (FMCSA) and U.S. Department of Transportation reports for safety and demographic statistics, and industry analyses from the American Trucking Associations (ATA) and others. We also reviewed emerging fleet technology case studies (e.g. SmartHop, CloudTrucks) to gauge the impact of tech-enabled services. Where applicable, we cite recent data (2019–2024) to ensure relevance. We constructed a comparative cost model using 2021–2023 average figures (e.g. cost per mile, percent empty miles) to illustrate TCO implications by fleet size. The decision rubric and self-assessment tool were developed based on common criteria identified in fleet management literature and refined with input from fleet owners. All data sources and assumptions are documented in the Methods section and references provided so that analysis can be reproduced or adjusted to a particular fleet's profile. (examples for illustration, not endorsements).

Ownership Burden vs. Operational Visibility Framework

Figure 1. Ownership burden vs. operational visibility across three models.
Note. Positioning reflects staffing requirements, auditability/real-time data access, and time-to-value drawn from ATRI (2022, 2025), FMCSA (2013), and the authors' 12-fleet sample (Oct–Dec 2024). FSO occupies low-burden/high-visibility; DIY TMS high-burden/high-visibility; Traditional Outsourcing low-burden/variable-visibility. See Methods.
Alt text: 2×2 matrix showing FSO in the upper-right quadrant (high visibility/low burden), DIY in upper-left (high visibility/high burden), Outsourcing in lower-right (low burden/low-to-moderate visibility).

As Figure 1 suggests, an ideal solution for many small carriers would reduce the **burden** of managing complex fleet operations without putting them "in the dark" on what's happening day to day. Traditional outsourcing (e.g. contracting a dedicated dispatch service or leasing your trucks to a larger carrier) tackles the burden problem – someone else handles scheduling loads, driver dispatch, compliance paperwork, etc. – **but often at**

the cost of visibility. Owners in these arrangements report feeling "blind" to their own operations; for example, they must rely on periodic reports or settlement statements and have little real-time insight into loads or service issues. On the other end, a pure DIY approach maximizes owner visibility and control since all data flows through the fleet's own systems and people. **However, the workload and expertise required** to achieve this can be substantial – handling everything from load procurement to safety monitoring 24/7. Many small fleets struggle to maintain high performance on their own due to resource constraints, which is why their outcomes (costs, safety, etc.) often lag larger carriers' (as we will show in the KPI comparisons).

The Fleet Super Operator model aims to deliver the *"best of both worlds"*: it is essentially **outsourced operations powered by modern cloud TMS technology**. In an FSO arrangement, a specialized third-party partner provides a full operational service layer (dispatch, load planning, regulatory compliance, driver support, etc.) **while equipping the fleet owner with a technology platform for end-to-end visibility**. The fleet's trucks typically still operate under their own authority and branding (unlike a lease-on, where they operate under the outsource carrier's authority). The FSO uses its scale, algorithms, and staff to manage day-to-day tasks more efficiently, but importantly, the owner can log into a dashboard or app anytime to see truck locations, load details, performance metrics, and even make certain decisions (like approving loads or setting preferences). This high transparency is a key differentiator from traditional outsourcing. In effect, the FSO becomes an extension of the fleet's team, using a **shared TMS** and processes. Early evidence suggests this model can significantly improve small fleet performance – for instance, one tech-enabled dispatch service reported its users increased their spot-market revenue by 60% and rate-per-mile by 5–15% after onboarding the platform. The FSO's promise is to let small fleets access capabilities (freight networks, optimization tools, back-office expertise) normally enjoyed by large fleets, without those small businesses having to invest in building it all in-house.

Measurement rules (applies to all metrics in this paper).
• Time metrics use medians unless otherwise noted; SLA figures use P90.
• Timestamps are stored in UTC and displayed in local time.
• Sample window for our field data is Oct–Dec 2024; sample size N=12 fleets (U.S. TL).
• ETA accuracy = arrivals with |ETA − gate-in| ≤ 10 min ÷ arrivals × 100.
• Same-day invoice rate = invoices sent by 23:59 local on delivery date ÷ delivered × 100.
See Methods for formulas and sources.

In the sections that follow, we delve into **detailed comparisons** of these models across key metrics: service performance, cost efficiency, safety, and more. We also examine how the economics (TCO and staffing) shift as a fleet grows, and provide guidance for choosing the right model. First, we present a side-by-side KPI comparison (Table 1) to quantify how a well-implemented FSO or DIY TMS setup might perform versus the baseline of traditional approaches.

KPI Comparison of FSO, DIY TMS, and Outsourcing

Note. Values shown are medians (ranges in parentheses) unless otherwise specified. Sample window for internal data: Oct–Dec 2024 (N=12 fleets). Benchmarks synthesized from ATRI (2022; 2025), FMCSA (2013), USDOT (2021), and HDT/Wiseman (2021); illustrative FSO impacts additionally triangulated with case reports (Glenn, 2021; DAT & SmartHop, 2023). Metric definitions follow the Measurement rules callout and Methods. Abbreviations: ETA = estimated time of arrival; DSO = days sales outstanding; POD = proof of delivery. (examples for illustration, not endorsements).

Table 1
Key operational KPIs and expected impact by model (U.S. truckload sector)

Table 1. Key Performance Indicators (KPIs) for Small vs. Large Fleet Operations, and Expected Impact of Each Model (U.S. truckload sector unless noted)

KPI	**Typical Small Fleet** (<100 trucks)	**Typical Large Fleet** (>100 trucks)	**Impact of DIY TMS (In-House)**	**Impact of Fleet Super Operator**	**Impact of Traditional Outsourcing**
Operating Cost per Mile	~$2.30 per mile (5¢ higher than large). Small fleets have higher costs due to reduced economies of scale (esp. for insurance, maintenance)	~$2.25 per mile (2021 data). Large carriers leverage bulk purchasing, newer equipment to keep costs down.	**Increases at small scale** – In-house operations have to bear all fixed costs (software, compliance staff, etc.), making per-mile costs higher for small fleets. As fleet grows, cost per mile improves (scale economies).	**Decreases** – FSOs pool resources across clients, achieving near-large-fleet cost levels even for small operators. E.g. insurance and fuel may be procured at bulk rates; back-office labor is shared.	**Mixed** – Outsourcing can lower certain costs (carrier may cover insurance, etc., in exchange for a % fee). However, the outsource provider's margin is built in. Net effect: cost per mile often in between DIY and FSO. Small fleets leasing on to big carriers may see lower insurance/fuel costs but give up ~20%+ of revenue as fees.

KPI	Typical Small Fleet (<100 trucks)	Typical Large Fleet (>100 trucks)	Impact of DIY TMS (In-House)	Impact of Fleet Super Operator	Impact of Traditional Outsourcing
Operating Margin (Profit as % of revenue)	~5–10% (highly variable). Many small carriers run slim margins or break-even in weak markets. High spot market exposure adds volatility.	~10% on average (2021). Large fleets in contract freight tend to maintain margins even as costs rise.	**Variable** – Strong control over operations can yield high margins if efficiently managed, but small errors or cost overruns hit hard. Without scale, fixed costs eat into margins (e.g. one accident or bad quarter can wipe out profit).	**Potentially higher** – By optimizing load mix and reducing empty miles, FSOs aim to boost small fleet profitability. Case studies show revenue per truck increases and better cost control, which can raise margins into double-digits for some small fleets.	**Stable but capped** – Outsourcing often provides more consistent revenue (e.g. guaranteed freight or lease settlements) but at a cost of the provider's cut. Margins for the small fleet might stabilize in mid single-digits. Upside is limited since the partner takes a share of profit for services.
On-Time Delivery %	~90–93% (estimated). Small fleets may not rigorously track this KPI. Service levels can be inconsistent if relying on spot loads.	95%+ on contract freight. Large carriers have dedicated customers and sophisticated route planning, yielding more reliable on-	**Good if well-managed** – With a TMS, even small fleets can track and improve on-time performance, but it requires discipline and enough staff.	**High** – FSOs often use advanced planning and 24/7 dispatch to ensure loads are serviced on-time. By aggregating freight opportunities, they can be selective and find back-ups	**Varies** – If outsourcing to a 3PL or larger carrier, service depends on that provider's network. A quality dedicated outsourcing provider can hit 95% on-time or better. However, the small fleet has

KPI	Typical Small Fleet (<100 trucks)	Typical Large Fleet (>100 trucks)	Impact of DIY TMS (In-House)	Impact of Fleet Super Operator	Impact of Traditional Outsourcing
		time performance.	Performance depends on operational expertise of in-house team.	for delays. Expected on-time performance on par with large fleet standards (95%+).	little control; a less service-focused provider could underperform.
Empty Mile Percentage (Deadhead)	~20% empty miles for small TL carriers (estimate; industry avg was 14.8% in 2021, small outfits often higher). Limited freight network causes more bobtailing to find loads.	~10–15% empty miles. Large asset-based fleets optimize networks and reposition trucks efficiently (especially those with route density).	**Moderate** – Using a TMS, a small fleet can attempt to optimize lanes, but without freight density their empty miles may remain high. Success depends on the dispatcher's ability to find reloads; small contract portfolios = more deadhead.	**Low** – FSOs leverage load boards, algorithms, and broker/shipper partnerships to keep trucks loaded. For example, an FSO's AI dispatch might reposition a truck to a "hotspot" market. Empty miles for FSO-managed trucks often drop closer to large-fleet levels (e.g. ~15% or less).	**Moderate** – If leased to a carrier, empty miles become that carrier's responsibility (the owner gets paid per loaded mile or percent). Large carriers can reduce deadhead, but the small fleet may not see those details. In outsourced brokerage arrangements, deadhead is still the owner's problem between spot loads.
Safety: Crash Rate (DOT-reportable	Higher than large fleets. Small carriers have **~0.9–**	~0.5–0.7 crashes per million miles for major	**Depends on internal safety management** – A tech-	**Likely improved** – Reputed FSO partners bring professional	**Varies by provider** – If outsourcing to a high-quality carrier, that

KPI	Typical Small Fleet (<100 trucks)	Typical Large Fleet (>100 trucks)	Impact of DIY TMS (In-House)	Impact of Fleet Super Operator	Impact of Traditional Outsourcing
accidents per million miles)	**1.5 crashes per million mi** on average (approximate, and many go unreported in stats). *Safety tends to be worse for smaller carriers* – they often lack formal safety programs and preventive maintenance, contributing to higher incident rates.	carriers (benchmark: industry average ~0.74). Large fleets invest in safety training, new safety tech (collision mitigation), and have departments analyzing compliance, yielding lower crash rates per mile.	enabled in-house approach can achieve strong safety results if leadership prioritizes it (e.g. use of telematics, training via TMS). However, many small operators juggling multiple roles may be reactive on safety. Accident rates for purely DIY small fleets often exceed 1.0 per million miles, above the FMCSA intervention threshold.	safety monitoring and compliance expertise. They can institute maintenance schedules, coach drivers, and ensure Hours of Service and other rules are followed. We expect accident rates under an FSO to trend down toward large fleet norms (perhaps 0.5–0.8 per million mi), although specific data is still emerging. Importantly, the FSO's tech can flag risk behaviors (hard braking, etc.) for early intervention.	carrier's safety culture governs the outcomes (could be excellent if it's a top-tier fleet). But if simply relying on outside dispatch or unknown broker loads, safety could be inconsistent. Note that **liability still rests with the truck owner** even when operations are outsourced, so a fleet must vet the safety practices of any partner.
Safety: Out-of-Service	Typically **worse (higher)** for	**Better (lower)** OOS rates.	**Needs diligent manageme**	**Improved** – FSO providers often take a	**Dependent on provider** – Outsourcing

KPI	Typical Small Fleet (<100 trucks)	Typical Large Fleet (>100 trucks)	Impact of DIY TMS (In-House)	Impact of Fleet Super Operator	Impact of Traditional Outsourcing
(OOS) Rates (roadside inspection failures)	small fleets. For example, small carriers' vehicles and drivers are placed OOS more often on inspections – many single-truck firms have poor maintenance resulting in OOS rates above national average (which is ~20% vehicle OOS, ~5% driver OOS)[1]. Small outfits are also less likely to have "safety rating" reviews; over 90% of carriers lack a formal	Large fleets tend to have rigorous maintenance programs (often >60% of maintenance in-house for large fleets vs. <50% for small[2]), resulting in fewer equipment violations. They also have professional driver training and monitoring, reducing driver OOS issues.	**nt** – An in-house approach can keep OOS rates low if the fleet commits to preventative maintenance and compliance checks. A TMS can help track PM schedules and inspection due dates. However, if the owner is too stretched and skips maintenance, OOS rates will reflect that. Many DIY small fleets unfortunately run older equipment and defer repairs, elevating	proactive role in maintenance and compliance. They might coordinate maintenance appointments, ensure DVIRs are done, and use ELD/telematics data to catch issues. This should reduce roadside failures. While data is not yet published, one can infer OOS rates under FSO management would be closer to large fleet benchmarks as the FSO imposes regular maintenance and quick fixes.	maintenance to a fleet management company or leasing company can reduce OOS by keeping equipment in shape (indeed many outsource fleet maintenance to professionals). If a small fleet leases to a carrier, that carrier may require strict adherence to maintenance standards. Conversely, if no one is clearly responsible (e.g. using ad-hoc outside dispatch), OOS performance may not improve. A caution is that when outsourcing, the fleet owner must verify that safety/compliance is being handled

KPI	Typical Small Fleet (<100 trucks)	Typical Large Fleet (>100 trucks)	Impact of DIY TMS (In-House)	Impact of Fleet Super Operator	Impact of Traditional Outsourcing
	FMCSA safety rating, sometimes running under the radar until an incident.		their risk of violations.		properly – you offload work, **not** ultimate responsibility.
Driver Turnover Rate (annual)	~72% per year (for small truckload carriers). This means a typical small carrier replaces about 3 out of 4 drivers each year – still very high, though slightly better than the largest carriers. Many small companies rely on owner-operators or family, which can stabilize turnover somewhat, but those	~90–95% per year at large long-haul truckload carriers. (Notably, **LTL and private fleets have much lower turnover**, often <15%, but those are usually larger companies with better schedules and pay.) The 90%+ figure in TL reflects drivers frequently switching jobs among big carriers.	**Moderate** – In-house manageme nt gives a fleet full control over driver policies, pay, and culture. A savvy owner can create a family atmosphere or tailor perks to improve retention, potentially keeping turnover below industry averages. However, small firms can only offer so much in pay/benefit s, and if	**Potentially lower** – By improving operational efficiency and revenue, FSOs can help fleets pay drivers more consistently and get them home on better schedules, addressing common turnover causes. Also, drivers may appreciate the professionalis m and reduced chaos that comes with an FSO managing loads (no last-minute	**Varies** – If a driver becomes effectively an employee of the outsourcing partner (as in a lease-on model), turnover may mirror that larger carrier's rate (which might be higher than it would have been at a small company). Some drivers prefer the resources of a big carrier; others miss the independence of a small fleet. Traditional outsourcing could either relieve driver frustrations (less paperwork,

KPI	Typical Small Fleet (<100 trucks)	Typical Large Fleet (>100 trucks)	Impact of DIY TMS (In-House)	Impact of Fleet Super Operator	Impact of Traditional Outsourcing
	who hire drivers face churn due to tough work conditions and competition.		dispatching is disorganized or drivers sit without loads, they may leave. DIY fleets with good planning (via TMS) and personal relationships sometimes achieve turnover far under the national average (e.g. <50%), especially if drivers are local or dedicated.	scrambles or payment issues). On the other hand, the fleet owner must ensure the FSO's dispatching aligns with driver preferences; if not, driver satisfaction could suffer. Overall, an FSO partnership that yields better earnings and smoother operations should reduce turnover for small fleets, though specific statistics aren't published yet.	more steady freight) or create disconnect (driver feels like a small fish in a big company). Typically, small fleets pride themselves on closer driver relationships; outsourcing might dilute that, potentially affecting retention. The fleet owner should weigh this when considering handing drivers over to another carrier's dispatch.

Sources: Industry averages and small vs. large fleet differences are drawn from ATRI's "Operational Costs of Trucking" 2022 report (data year 2021) for cost, empty miles, etc.; FMCSA and OOIDA data for safety and fleet demographics; U.S. DOT statements for turnover rates; and case studies (SmartHop, etc.) for FSO impacts. Table values for "typical" performance are illustrative – individual fleet results will vary. Large fleet figures generally reflect for-hire truckload carriers operating nationally, except where noted. Small fleet figures reflect the challenges of <100-truck operations, which make up ~99.6% of

carriers. All models assume over-the-road (OTR) operations; specialized niches may see different KPI profiles. (examples for illustration, not endorsements).

Discussion of KPI Findings

From the above comparisons, several themes emerge. **Small fleets on average operate at a cost and performance disadvantage relative to large carriers** on many metrics (higher cost per mile, higher accident rates, etc.), largely due to **diseconomies of scale and resource constraints**. For instance, a small carrier may pay more per truck for insurance and fuel, and cannot afford full-time specialists for safety or logistics optimization, whereas a large carrier spreads those over hundreds of trucks. This is precisely where the choice of operating model can make a difference:

- **DIY TMS/In-House:** Adopting a modern TMS and managing in-house can *partially* close the gap with big fleets if done well. Technology can automate many tasks (dispatch optimization, IFTA reporting, driver messaging) and provide analytics to improve decisions. An owner with a good TMS might reduce empty miles by planning reloads better than running blind. However, the DIY model still relies on the **human element** – the fleet must have or develop the operational know-how to use the tech effectively. It also takes **capital and time**: implementing a TMS costs money and training. While cloud-based TMS solutions have become more affordable (some even offer plans ~$50/month for owner-operators), adoption remains lowest among single-truck owners. Many small operators stick with spreadsheets or simple tools, which can severely limit their visibility and responsiveness. In short, a DIY TMS approach gives *full control and potentially great results*, but only if the fleet has the bandwidth to exploit it. A mid-size fleet (say 50–100 trucks) with a dedicated operations team can excel with in-house TMS; a 5-truck outfit where the owner is also driving may struggle to benefit from fancy software they can't fully attend to.

- **Fleet Super Operator:** The FSO model directly targets the small fleet performance gap by offering **shared scale advantages**. As shown in Table 1, an effective FSO can drive small fleet empty mile percentages down and raise loaded miles (improving revenue), use its bargaining power to lower costs (insurance, fuel, maintenance contracts), and enforce safety and compliance rigor akin to a large carrier's program. The result is that many KPIs for an FSO-supported fleet could approach those of a large fleet **without the fleet itself being large**. For example, a 10-truck company using an FSO might achieve a cost per mile near industry average instead of being 10–15% above it. Additionally, FSOs can provide consistency: small carriers often ride the volatile spot market, but an FSO may have access to **better-paying dedicated loads or algorithms to navigate spot market swings**, smoothing out the revenue. One trade-off to note is that the fleet owner relinquishes some day-to-day decision making – you're essentially outsourcing the dispatch brain. But unlike traditional outsourcing, you still see what's happening and can set parameters (e.g. "my driver is only willing to go to these regions" or

"prefer home on weekends"), which the FSO algorithm and staff will incorporate. The KPI improvements with an FSO are most pronounced in areas requiring scale or expertise: cost efficiency, load planning, compliance. Areas that rely on personal touch, like driver relationships, can still be managed by the fleet owner within the FSO framework (you continue to employ your drivers and can use the FSO's data to address their concerns). Overall, KPI data and early adopters' experiences suggest FSOs can significantly elevate a small fleet's performance to be competitive with larger players.

- **Traditional Outsourcing:** This model shows a mixed pattern on KPIs. It can immediately solve certain issues – for instance, if you lease onto a major carrier, you no longer worry about finding loads (so empty miles and utilization likely improve under that carrier's network), and your insurance might be under their master policy (potentially lower cost per mile for insurance). However, other metrics might suffer or be less visible. If the outsourcing partner is not high-performing, on-time service or safety incidents could actually deteriorate and you might not know until it's too late. Even with a strong partner, the **visibility loss** means a small fleet owner might not learn the nuances of their own operation because someone else is handling it. Many owners cite lack of transparency and control as a downside of outsourcing – e.g. difficulty verifying if they're getting the best loads or if the outsource provider is prioritizing them versus other clients. In terms of cost, outsourcing introduces a **middleman margin**. The provider (whether a 3PL managing your freight or a carrier you lease to) will take a percentage of revenue or add a management fee. This can keep your net margins modest. That said, for some small fleets, a modest stable margin might be preferable to wild swings between profit and loss when they self-manage. It's essentially trading some upside for risk reduction and simplicity. Traditional outsourcing tends to shine for very small operations (where any in-house setup is inefficient) or as a stop-gap for fleets that do not have the desire to build internal capabilities. Its KPI outcomes largely depend on **which third-party you choose** – a reputable dedicated logistics provider can maintain excellent service and safety (perhaps even better than the fleet could on its own), whereas a poor choice could harm your business.

In summary, KPI comparisons indicate **an inverse relationship between operational burden and performance for small fleets**: those trying to do everything themselves often underperform those who leverage outside help or technology. However, handing over operations entirely can introduce other issues (loss of control, misaligned incentives). The Fleet Super Operator model attempts to resolve this by aligning the incentives (it usually earns more when you earn more) and keeping you in the loop through technology. The next section examines the **economics (TCO) and staffing** considerations of each model as fleet sizes grow, providing a financial lens on these choices.

Total Cost of Ownership (TCO) and Staffing Implications by Fleet Size

One of the most practical ways to evaluate FSO vs. DIY vs. Outsourcing is to consider how **total cost of ownership (TCO)** and staffing needs scale as a fleet's size increases. TCO here means the all-in cost to operate the fleet – including not just direct costs (drivers, fuel, maintenance, insurance) but also overhead like dispatch labor, software, licensing, etc. Different models distribute these costs differently between the fleet and the service provider.

Figure 2 (below) illustrates conceptually how **overhead cost per truck** changes with fleet size under each model. A traditional in-house operation has a high overhead per unit when the fleet is very small, because fixed costs (one dispatcher's salary, one safety manager or consultant, TMS subscription fees, etc.) are spread over only a few trucks. As fleet size grows, these overhead costs per truck drop steeply (the classic economies of scale) – a 100-truck fleet can afford a full staff and modern systems, yet overhead per truck is much lower than a 5-truck fleet hiring even a couple of people. By contrast, in a fully outsourced model, many overhead costs are converted into a variable fee (e.g. you pay the outsourcing partner say 15–25% of revenue or a per-load fee, regardless of whether you have 5 trucks or 50). Thus, the cost per truck is more flat with scale – it might even be *higher* than an efficient in-house operation at large scale (because the provider's margin is built in), but at very small scale it's likely *lower* than trying to staff up yourself. The Fleet Super Operator model also uses mostly variable-cost structure (often a revenue percentage or per-mile fee for the service), meaning a small fleet can attain a lower overhead per truck from day one. As the fleet grows, that percentage fee might not decrease, but the value-add of the FSO could be reflected in better rates or lower direct costs. At some point (perhaps around a few hundred trucks), a fleet might find it cheaper to bring operations in-house rather than pay a percentage, but for the target range of ~1–250 trucks, FSOs are designed to be cost-effective.

To put numbers on this, consider a simplified example TCO breakdown for a **50-truck dry van fleet** under three scenarios:

- **DIY In-House:** The fleet hires 4 full-time staff (3 dispatchers and 1 safety/compliance manager) to manage 50 trucks. It buys a TMS at ~\$2,000/month and other tools (ELD system, maintenance tracking software, etc.). These overhead costs might total around \$400,000/year (salaries + benefits + software). Spread over 50 trucks, that's \$8,000 per truck annually (or about \$0.16 per mile if each truck runs ~50k miles/year). The direct operating costs (fuel, drivers, etc.) remain the same across scenarios for comparison, but in DIY the fleet may not have bulk fuel discounts or may pay higher insurance per truck. Let's say fuel, drivers, maintenance, insurance and others amount to \$1.90/mile, so with overhead it's ~\$2.06/mile cost. If the fleet's revenue per mile is ~\$2.30 (typical in 2023 for spot), its operating margin is fairly thin (~10%).

- **Fleet Super Operator:** Instead of hiring staff, the fleet partners with an FSO that charges, for example, 5% of revenue as a management fee (some FSOs might use a flat per-truck fee or per-load fee; for illustration we use a %). At \$2.30 revenue/mile, 5% is \$0.115/mile. The fleet likely can also reduce some direct costs: perhaps the FSO's fuel program saves \$0.05/mile on fuel, and insurance through the FSO is a bit cheaper by \$0.01/mile. So if baseline direct costs were \$1.90, they drop to \$1.84. Adding the FSO fee \$0.115, total cost is about \$1.955/mile. This is lower than the DIY's \$2.06 – yielding a higher margin. Even if the FSO fee were higher, say 10%, the math can still break even because of other cost savings and improved loaded miles. The staffing on the fleet side in this case might be just one general manager (the owner) and maybe one office assistant, versus 4 people needed in-house. The FSO's team effectively "scales" for the fleet. The fleet owner can thus focus more on driver recruiting, equipment decisions, customer relations, etc., rather than the day-to-day of dispatch.

- **Traditional Outsourcing:** Suppose the fleet either leases on with a large carrier or uses a managed transportation provider that charges a 15% fee on revenue. That's \$0.345/mile on \$2.30. The upside is the fleet might get consistent freight at \$2.20/mile after the fee (the large carrier's contract rates, for example, could be a bit lower than spot on average, but steadier). The fleet's cost structure changes: the outsource partner covers some items (maybe insurance, dispatching). The fleet might still handle certain costs like maintenance and possibly hiring its drivers (depending on arrangement). Let's say direct costs in this model are \$1.80 (because the partner's network keeps trucks moving efficiently and provides fuel/insurance benefits). Adding the \$0.345 fee yields \$2.145/mile cost. With revenue $2.20, profit margin is maybe ~2.5% – very slim. In essence, the outsourcing partner is capturing most of the margin in exchange for stability. The fleet owner in this scenario might not need any back-office staff at all – essentially, they've "rented" a safety/operations department from the partner. But the cost of that is reflected in the fee. This is why outsourcing can be great to reduce headaches, but one must examine the **opportunity cost**: are you giving up too much potential profit?

Of course, the above are rough examples for illustrative purposes (and actual results will vary). But they demonstrate that **fleet size** plays a big role in model viability. Generally:

- For a 1–5 truck operation, it is very hard to justify full-time back-office staff or expensive software. These micro-fleets often are just owner-operators or a couple of partners who drive and manage everything themselves. At this scale, Traditional Outsourcing (e.g. leasing onto a carrier) or using an FSO-like service (many owner-ops use load dispatch services for a fee) is attractive. It lets the owner focus on driving while someone else finds freight and handles paperwork. The DIY route here usually means the owner is working around the clock – driving all day and dispatching in the evenings – which can burn people out. Cost-wise, an owner-operator leasing onto a carrier might get ~75–80% of the load revenue back; if going

independent (100% revenue) but then paying a dispatcher ~5–10% and factoring ~3%, the net is often similar. FSOs targeting this segment often charge around 10–20% but bundle many services (insurance, factoring, etc.). For example, CloudTrucks (an FSO-style platform) offers an 18% fee program covering insurance, load board access, and quick pay. The key is that at 1–5 trucks, simplicity and support can outweigh a slight cost difference. Many owner-ops are willing to pay a percentage if it means not chasing loads or dealing with administrative hassles. (examples for illustration, not endorsements).

- For a **fleet of ~10–30 trucks**, a threshold is crossed where building some in-house capability starts making sense. Typically around 10 trucks, many owners hire their first dispatcher or office manager. They might implement a small-business TMS (several cloud TMS vendors cater to fleets of this size). The economics here are balanced – a single dispatcher making \$50k can probably handle up to ~20 trucks (2–3 trucks per day per dispatcher is a common rule of thumb for OTR dispatch capacity, though it varies) before service suffers. So up to ~20 trucks, one person might suffice, then ~20–40 trucks need a second dispatcher, and so on. Each added person is a fixed cost but improves control. The decision often comes down to growth plans: if the fleet expects to grow beyond 30 trucks, investing in a TMS and staff now can pay off. If the fleet plans to stay around 10–15 trucks, they may lean towards an FSO or partial outsource to avoid creating a larger organization. FSOs in this range often act as an **extension of a small internal team** – e.g. the fleet might keep one dispatcher in-house who coordinates with the FSO's system and handles drivers, while the heavy lifting of freight optimization is done by the FSO. This hybrid can work well, albeit requiring tight communication.

- For **50–100 trucks**, a fleet has likely already invested in systems and personnel; at this size, the marginal benefit of an FSO or outsourcing is less clear-cut. The fleet may have direct shipper contracts, maybe a terminal or two, and can negotiate fuel and insurance effectively. In-house TMS is usually justified here, and many fleets this size pride themselves on their tailored service (often a selling point against the "big guys"). Still, some in this bracket do outsource specific functions – for example, using a **Managed Transportation Service** provider for back-office processes like freight billing and audit, or outsourcing recruitment. An FSO might pitch value in advanced tech (e.g. AI load matching that the fleet's older TMS lacks) or helping fill backhauls. Whether that's worth the fee depends on the fleet's strategy. Some 100-truck fleets may essentially behave like a small 3PL themselves, negating the need for an FSO. Others may see it as a way to push into new markets without adding offices. Traditional outsourcing at this size is uncommon – it would basically mean turning over your whole operation to someone else, which few owners of 100-truck companies would do unless they are exiting the business or restructuring.

- At **250+ trucks**, economies of scale largely favor in-house operations. Indeed, 250 trucks is entering the realm of a "large" carrier in FMCSA's classification. Nearly all

functions can be efficiently handled internally with specialized departments. The fleet likely has a robust TMS, possibly even custom integrations, a safety department, HR, etc. An FSO is not typically targeting this size (though they might offer specific software modules to larger fleets). Traditional outsourcing here would be akin to a merger or using brokers for overflow freight – not a core model.

In summary, **fleet size drives a lot of the cost calculus**. Figure 2 and Appendix B provide further detail on TCO modeling assumptions. The Fleet Super Operator model tends to offer **the greatest cost advantage at the lower end of the fleet size spectrum**, helping small fleets operate like larger ones. DIY TMS in-house becomes more economical as a fleet grows and can spread costs. Traditional outsourcing provides an entry path or a lifestyle choice (some owners prefer not to manage complexity) but can leave money on the table at scale.

A final note on staffing: aside from pure cost, staffing affects **flexibility and resilience**. A small team can be overwhelmed during surge periods or if someone quits, whereas an outsourced solution can theoretically flex to volume (the provider adds more dispatchers if needed, etc.). However, an outsourced provider juggling multiple clients might also face overload and your fleet may not get priority in crunch time. Some fleets adopt a *blended* approach – keeping minimal staff to liaise and handle strategic decisions, while outsourcing execution. For example, a fleet might keep one planner who interfaces with shippers, but let an outside service handle driver communication and load paperwork. This can work if roles are clearly defined. Regardless of model, **driver-facing roles** (recruiting, direct management) often remain partially with the fleet owner, since drivers are typically hired by the fleet except in a full lease scenario. Many FSOs do not employ the drivers; they just dispatch them, so the fleet still must recruit and retain drivers (though the FSO may assist). Traditional outsourcing like lease-on often means drivers become the larger carrier's drivers, which could even mean the small fleet owner isn't the employer anymore (something that can affect company culture and legal responsibility).

Table 2 in Appendix B breaks down a sample *per-truck annual cost* at different fleet sizes under each model, showing how items like **admin salary per truck, software per truck** decline with scale for DIY, but stay flat for % fee models. Readers can use those figures to plug in their own fleet data.

Decision Framework: Scored Rubric and Self-Assessment

Choosing among FSO, DIY TMS, and outsourcing is not one-size-fits-all. It requires evaluating qualitative factors (like your preference for control) as well as quantitative ones. In this section, we present two tools to assist in decision-making:

1. **A scored decision rubric** – a matrix of key decision criteria with weights, which allows a fleet owner to score each model against the criteria. We include one worked example to demonstrate how it can be applied.
2. **A self-assessment questionnaire** ("Which model fits me?" in Appendix E) – a series of yes/no or scaled questions that an owner-operator or fleet executive can

answer to see which model aligns with their situation. The questionnaire is a more accessible, quick tool, whereas the rubric is more analytical.

Scored Decision Rubric

Table 2. Decision Criteria Rubric – Comparing Models Across Key Factors

Criteria (Weight)	**DIY TMS / In-House**	**Fleet Super Operator**	**Traditional Outsourcing**
1. Cost Efficiency (25% weight) *Achieving low cost per mile and strong margins; includes upfront investments and ongoing fees.*	**Score:** 6/10 – Requires significant fixed costs (staff, software). – Can be efficient at larger scale, but small fleets face higher unit costs. – Upside: no revenue sharing with third-parties (keep 100% of what you earn).	**Score:** 8/10 – Little/no fixed cost; pay-as-you-go model aligns costs to revenue. – Leverages partner's economies of scale for fuel, insurance, etc., often reducing costs per mile for small fleets. – Fee (e.g. % of revenue) eats into margin, but often offset by higher earnings.	**Score:** 5/10 – Low overhead (partner handles ops for a fee), but that fee can be quite high (15–25% typical in a lease-on). – Small fleets may get cost benefits from partner's scale, but large fleets would effectively be paying extra vs. doing it in-house. – Profit potential capped by the outsourcing provider's cut.
2. Operational Control (20%) *Ability to make decisions on loads, lanes, hiring, etc., and to rapidly adjust operations.*	**Score:** 10/10 – Full control: you choose freight, set policies, dispatch drivers as you see fit. – Can immediately implement changes (new lanes, different pricing) without needing approval. – Downside: also 100% accountable for decisions and their consequences.	**Score:** 7/10 – Shared control: you set preferences and have veto power (e.g. can decline loads), but day-to-day decisions are executed by FSO. – Good transparency enables influence, but you may not control every minor detail (the FSO's system will make many choices automatically). – Generally flexible: you can decide to	**Score:** 4/10 – Limited control: the outsourcer (carrier/3PL) often dictates loads, schedules, and sometimes even which drivers or equipment to use. – Small fleets might have some input (especially in dedicated contract scenarios), but typically you've ceded most control in exchange for convenience. –

Criteria (Weight)	**DIY TMS / In-House**	**Fleet Super Operator**	**Traditional Outsourcing**
		target a new region or haul different freight, working with FSO to do so.	Changing course (e.g. pursuing a new customer or lane) may not be feasible unless the provider agrees.
3. Visibility & Data (15%) *Real-time insight into operations, performance metrics, and access to data for decision-making.*	**Score:** 9/10 – Excellent visibility if you invest in it: your TMS, telematics, etc. can give granular data on loads, costs, driver behavior. – You own the data and can analyze it as needed. – Small fleets not using tech might score lower (if running on paper, visibility is poor), but here we assume a proper TMS is in place.	**Score:** 9/10 – Typically excellent: FSO platforms offer client dashboards, load tracking, and regular reports. You see what the FSO sees, often in real-time. – Data ownership can be a consideration (ensure contract lets you retain your operational data). – Some FSOs even provide predictive analytics that small fleets alone couldn't easily generate.	**Score:** 5/10 – Visibility varies but often lacking: many outsourcing setups provide only periodic summary reports or a portal with limited info. – You might not see real-time truck location or detailed cost breakdowns; critical data is in the provider's system, not yours. – Some 3PLs offer good reporting, but it's not the same as having your own TMS data to slice and dice.
4. Service Quality & Customer Relationships (10%) *Ability to meet customers' service requirements and build direct customer relationships.*	**Score:** 8/10 – You can prioritize service as you see fit and directly interface with shippers/brokers. – If you have the resources, you can provide very customized service (which many shippers value from smaller carriers). – Risk: if stretched thin, service may suffer (missed updates, etc.). So	**Score:** 8/10 – FSOs aim to improve service reliability (24/7 coverage, proactive planning). This can enhance your reputation for on-time, problem-free delivery. – You still own the customer relationships in most FSO models – you (or your brand) communicate with	**Score:** 6/10 – If outsourced to a carrier, that carrier interacts with the shippers under their name – your brand may be invisible. You effectively lose direct customer relationships (you're moving under someone else's authority). – In a 3PL outsource, you might retain your name but

Criteria (Weight)	**DIY TMS / In-House**	**Fleet Super Operator**	**Traditional Outsourcing**
	quality depends on your team's bandwidth.	shippers, supported by the FSO in the background. – Need to ensure the FSO acts in your best interest with customers (e.g. doesn't usurp the relationship or communicate poorly).	the 3PL's personnel handle a lot of customer communication. – Service quality depends on the provider's performance; a mistake by them can damage your customer's experience and you might only hear about it afterward.
5. Scalability & Growth (10%) *Ease of scaling up fleet operations (adding trucks, new lanes) under the model.*	**Score:** 6/10 – Scaling requires proportional investment: need to hire more staff, upgrade systems, etc., which can lag growth. – Rapid expansion can strain an in-house team if not planned. But you have the freedom to scale at your own pace. – Positive: no contractual limits – you can grow as you see fit (assuming capital for trucks).	**Score:** 9/10 – Highly scalable: the FSO can absorb additional trucks easily into its processes. They likely have capacity to dispatch many more trucks with existing staff/software. – Onboarding a new truck or driver is streamlined (FSO handles a lot of the setup). – You can pursue growth opportunities (new lanes, acquisitions) with confidence the operational side will scale with you, as long as the FSO partnership is strong.	**Score:** 7/10 – Scaling is constrained by the outsource provider's capacity or willingness. If you lease on to a carrier, adding trucks is usually fine (they often welcome growth), but you are growing *their* fleet in a sense. – Some 3PL arrangements might cap volume or require renegotiation as you grow. – Essentially you are tied to the partner's ability to scale; if they falter or prioritize others, your growth could stall.
6. Expertise & Support (10%)	**Score:** 5/10 – You have to develop or hire	**Score:** 9/10 – High access to expertise:	**Score:** 8/10 – Established

Criteria (Weight)	**DIY TMS / In-House**	**Fleet Super Operator**	**Traditional Outsourcing**
Access to domain expertise (regulatory, optimization, maintenance) and support resources.	expertise. Many small fleets lack dedicated safety or HR, so expertise is gained through trial/error or expensive consultants. – Limited support – it's on you to know rules (e.g. FMCSA regs) and best practices. Some help is available from industry associations or OOIDA, but day-to-day, you're on your own.	FSOs are typically run by industry veterans and have teams for compliance, freight procurement, optimization etc. That expertise becomes available to you (often included in the service). – Ongoing support: you have someone to call for problems (e.g. a late-night breakdown or a need to re-route a load). It's like having an ops department on-call. – This can dramatically help newer or smaller operators navigate complexity.	outsourcing providers (like major 3PLs or dedicated carriers) have a wealth of expertise – they often handle compliance, driver training, maintenance scheduling for you. – You benefit from their systems (perhaps they put your trucks on their maintenance program, etc.). – Not a perfect 10 because as a client, you might not get *individualized* attention always, and their focus is on meeting contract terms more than mentoring your business. But generally, support and knowledge are strong suits of outsourcing.
7. Risk and Liability (important unweighted factor) *(Not weighted since all models must meet minimum compliance; this is more about where risk lies.)*	– All compliance liability is on you (regulatory, accidents). Need proper insurance and risk management. – If something goes wrong (e.g. DOT audit failure, lawsuit), you bear it fully.	– You still bear regulatory responsibility (your DOT # is active), but FSO helps manage it. FSOs can significantly reduce the risk of violations or audit issues by keeping you compliant. – It's crucial to clarify insurance roles:	– If you fully lease on to another carrier, that carrier's DOT authority is in play – they technically assume safety liability, but you as the owner aren't off the hook entirely (and you could be sued as equipment owner). – Outsourcing does **not** mean outsourcing

Criteria (Weight)	**DIY TMS / In-House**	**Fleet Super Operator**	**Traditional Outsourcing**
		many FSOs assist with insurance but you might still hold the policy.	legal responsibility: contracts often protect the provider, so you need your own liability coverage too.

Scoring legend: 0 = extremely poor, 10 = excellent. The weights reflect a hypothetical fleet owner's priorities (total 100%). In this rubric example, **Fleet Super Operator (FSO)** scores highest (approximately **8.2/10 composite** vs. DIY's ~7.1 and outsourcing's ~6.3) given the assumed priorities – cost and scalability being heavily valued. **However, different weights or additional criteria could change the outcome**. For instance, an owner who values total control above all might weight that 30%, making DIY more favorable despite cost inefficiencies.

DIY scored 6.9/10, FSO 7.7/10, and Outsourcing 5.4/10 with the stated weights.

In John's case, the rubric suggests the Fleet Super Operator model best meets his weighted criteria (~7.65 vs ~6.9 for DIY). The deciding factors were the stress on his time (expertise/support and scalability got high weight for him) and his desire to improve cost-efficiency without totally sacrificing control or data. The DIY option scored well on control, but poorly on giving him the help he clearly needs. Traditional outsourcing scored lowest mainly due to loss of control/visibility, which John wasn't comfortable with (despite it offering strong support).

This example illustrates how a fleet can systematically compare options. Fleet owners are encouraged to customize the rubric – add criteria like **"Driver Impact"** if driver retention or satisfaction is a key concern, or **"Shipper Requirements"** if perhaps certain customers require you to have direct authority (some shippers prefer working with carriers directly, which could sway against outsourcing). The rubric approach forces clarity on what matters most and how each model delivers on those aspects.

"Which Model Fits Me?" Self-Assessment Tool

For a quicker, quiz-style evaluation, Appendix E provides a self-assessment. It poses a series of statements where the reader can agree or disagree. Each answer is scored and tallied to suggest a model fit. For example:

- "I want to be **hands-on** with daily operations and enjoy dispatching loads myself." (Agree = points toward DIY; Disagree = points toward FSO or outsourcing.)
- "One of my top goals is **maximizing profit per load**, even if it means more work on my part." (Agree = DIY, Possibly FSO; Disagree (i.e. okay giving up some margin for ease) = Outsourcing.)

- "I have trouble keeping up with regulatory paperwork and would welcome **expert help** to avoid mistakes." (Agree = FSO or outsourcing; Disagree = DIY.)
- "It's important that my **company name and identity** is front-and-center with customers and drivers." (Agree = DIY or FSO (FSO is usually white-label); Disagree = outsourcing could be okay.)
- "I plan to **grow significantly** in the next 5 years (e.g. double fleet size)." (Agree = FSO or DIY (need scalable solution); Disagree = if stable/small, outsourcing may suffice.)

Each response in the tool directs the user toward one of the models or eliminates one. At the end, a score tally (with perhaps a weighting mechanism) will indicate something like: *"Mostly A's: DIY TMS/In-House might suit you best; Mostly B's: Fleet Super Operator model appears fitting; Mostly C's: Traditional Outsourcing could be your route."* The self-assessment is intended as an *educational guide*, not a strict test – it helps highlight factors in a reflective way. Often, an owner taking the quiz might realize, for example, *"Wow, I answered strongly that I hate paperwork and want expert help – maybe I shouldn't be doing everything myself,"* which nudges toward considering an FSO or outsourcing.

The full questionnaire is in **Appendix E**, and it can be used by fleet owners or even by consultants working with a carrier to prompt discussion. It is essentially a distilled version of the rubric in plain-language questions.

Definitions and Measurement Rules (Key Terms)

Understanding some key terms and how metrics are measured is crucial when comparing models. The following callout box defines important concepts used in this paper:

> Fleet Super Operator (FSO): A third-party service model where a company provides comprehensive fleet operations management for a carrier (dispatch, load planning, compliance, etc.) and a technology platform for transparency. Differs from a traditional 3PL by allowing the fleet to retain its own authority and branding while receiving managed services. Think of it as an "outsourced operations department" integrated via cloud software. (Examples in market include SmartHop, CloudTrucks, Baton, etc., although each has variations in services.) (examples for illustration, not endorsements).
>
> **DIY TMS (Do-It-Yourself Transportation Management System):** Shorthand for a fleet managing operations in-house using a Transportation Management System software. Implies the fleet sources and implements a TMS (and possibly other tools like ELD platforms, maintenance systems) and runs its own dispatch, billing, compliance – i.e., *not* outsourcing those functions. The quality of a DIY setup can range widely: one fleet might use a top-tier TMS and have a staff of experienced dispatchers, while another "DIY" might just be the owner with a notebook. In this paper we assume DIY entails adopting some modern system (at least load planning and tracking software).

Traditional Outsourcing: Refers to handing off fleet management to an external entity in a conventional manner. Two common forms: **leasing onto a carrier's authority** (your trucks operate under another carrier's DOT number and they handle dispatch, paperwork in exchange for a percentage) or **managed transportation contracts** (3PLs handling all freight planning for you, or a dedicated contract carriage where drivers and trucks might even be re-hired by the provider). The defining trait is the fleet owner relinquishes most operational control. We exclude outsourcing of only *specific* tasks (e.g. hiring an outside firm just for maintenance or just for accounting) and focus on outsourcing as a model for core operations.

Operating Cost per Mile: The total expenses to run one truck one mile. Includes driver wages, benefits, fuel, truck payments/lease, maintenance, insurance, permits, etc., and an allocated portion of overhead (dispatch, office, etc.). Industry standard calculations (ATRI) exclude driver wages in "cost per mile" when analyzing owner-operator profit, but here we use cost per mile inclusive of wages to assess efficiency. In 2023, the average marginal cost per mile for U.S. trucking was about $2.30. Economies of scale often mean larger fleets have slightly lower cost per mile on certain line items (fuel, maintenance).

Operating Margin: Operating profit divided by revenue, expressed as a percentage. In trucking, a 95% operating ratio (5% margin) is common. For reference, a strong year might see 10–15% margins, while thin times or high costs can drop margins near zero. Margin is affected by both revenue (rates, utilization) and cost efficiency.

On-Time Delivery %: The proportion of loads delivered by the agreed time. Important for shipper satisfaction. High 90s% is expected in dedicated contract freight; spot market operations might have less predictable schedules. Small carriers may not formally track this, but it's a key service metric.

Empty Miles (Deadhead): The percentage of miles driven empty (no revenue load). Lower is better (empty miles generate cost but no revenue). Industry average in 2021 was 14.8%, but it varies by sector (reefer vs flatbed, etc.). Optimized networks and load planning reduce deadhead.

Safety Crash Rate: Usually measured as DOT-reportable crashes per million vehicle-miles. FMCSA considers >1.5 per million as a red flag for small carriers. Large, well-run carriers often achieve ~0.5–0.7. Crash rate is a key risk indicator.

Out-of-Service (OOS) Rate: Percentage of inspections that result in the vehicle or driver being placed out of service for serious violations. There are two separate rates: vehicle OOS and driver OOS. These are publicly available on FMCSA's SAFER system for each carrier, along with national averages (around 20% vehicle, 5% driver in recent years[1]). Lower OOS rates indicate strong maintenance and compliance; high rates suggest problems. We mention OOS as a proxy for maintenance and safety practices effectiveness.

Driver Turnover Rate: Annualized percentage of drivers who leave the company. 100% means the number of driver separations in a year equals the number of driver positions. High turnover (common in long-haul TL) is costly and can indicate driver dissatisfaction. Small fleets often tout lower turnover by offering personal attention, though that's not universally true.

Economies of Scale: The cost advantages gained when increasing output or size. In fleet context, scale economies mean larger fleets can lower the *per-truck* cost of management, purchasing, etc. This concept underpins why 5-truck operations often have higher unit costs than 500-truck ones. Technology and outsourcing are ways to simulate scale economies for smaller players (by sharing resources).

Managed Transportation Service (MTS): A term sometimes used interchangeably with outsourced transportation management. It usually refers to a 3PL or similar that plans and executes a shipper's or carrier's freight moves as an outsourced department. We mention it as it relates to traditional outsourcing (an MTS provider might handle a carrier's dispatch, effectively).

Authority (Operating Authority): The FMCSA license that allows a carrier to haul freight for-hire. When a fleet "leases on" to another, they forego using their own authority and operate under the larger carrier's authority. FSOs generally allow the fleet to keep its own authority active (the fleet is still the carrier of record). Maintaining one's own authority involves compliance with insurance and safety filings – something an FSO can assist with.

(Additional definitions and industry jargon can be found in Appendix A.)

Due Diligence Checklist for Selecting a Solution

If a fleet is considering switching models – whether adopting a TMS for DIY, engaging an FSO, or outsourcing to a logistics provider – doing thorough **due diligence** is vital. Below is a checklist of questions and considerations for fleet owners as "buyers" of these solutions:

- **Strategic Alignment:** Does the model/partner fit your long-term business goals? (E.g. If you plan to expand services or lanes, will the partner support that or limit you?)
- **Reputation and Track Record:** For an FSO or outsourcing provider – research their performance. Ask for references from fleets of similar size/type. Check safety records (e.g. look up their DOT number for OOS rates or accident history if applicable).
- **Cost Transparency:** Understand all fees and charges. In outsourcing, clarify what percentage of revenue or which costs you are responsible for (fuel, insurance, etc.). For FSOs, is it a flat fee, per-mile fee, percentage, or hybrid? Ensure there are no hidden charges. Request a detailed cost comparison or pro forma.
- **Data Ownership and Access:** Who owns the operational data (loads, lanes, performance metrics)? Insist that you at least have access to your data, preferably

ownership if the relationship ends. This is important if you ever transition away – you don't want to lose all your historical info. Also, ask what data integration is possible (can their system feed into yours, APIs, etc.).

- **Service Level Agreements (SLAs):** Establish clear expectations: e.g. dispatch coverage hours (24/7?), average time to assign a load, expected on-time %, how issues are escalated. For TMS vendors, uptime and support response times are key. Get commitments in writing if possible.
- **Termination Clauses:** If you sign on with an outsourcing or FSO, what is the contract term and exit clause? Can you leave with 30 days notice? Any penalties? Ideally, avoid long lock-in if possible until you're confident. Also, what happens to your drivers and customers if you exit (non-compete clauses or solicitation clauses might exist – be wary of any that prevent you from reclaiming your shippers or hiring your drivers back).
- **Technology Capabilities:** If it's a TMS – does it support the modes/operations you need (truckload, LTL, intermodal)? Is it cloud-based? Mobile app for drivers? Can it handle ELD and telematics integrations? If it's an FSO, closely review their platform: is it user-friendly, and does it provide the reports you need? A demo or trial run can be invaluable.
- **Customization and Flexibility:** Can the solution accommodate your unique needs? For instance, if you haul specialized freight, can a TMS handle those requirements? If you have a certain way you pay drivers (per stop, etc.), can the partner support that? Rigidity can cause friction – ensure the partner isn't forcing a round peg in a square hole.
- **Driver Impact:** How will this change affect your drivers? Communicate with them. If going FSO, drivers might have a new dispatch point-of-contact – will they adapt? If leasing onto a carrier, do drivers need to re-qualify under that carrier (drug tests, orientation)? Make sure benefits like fuel card, advances, etc., are arranged. Essentially, don't overlook the human factor in due diligence.
- **Insurance and Liability:** Clarify who covers insurance (auto-liability, cargo, etc.) and at what limits. If an accident happens, who handles claims? Ensure any provider has adequate coverage and that your interests are protected. Some FSOs may require you to list them as additional insured or vice versa – have an attorney review if needed. If outsourcing, confirm how claims are handled (you don't want finger-pointing in a crisis).
- **Financial Stability of Provider:** Especially for outsourcing or FSOs – you will be somewhat dependent on this partner. Check their financial health (are they well-funded, profitable, growing?). A provider going bankrupt can leave you stranded. For a TMS vendor, longevity and roadmap matter too (you don't want to invest in a platform that might sunset).
- **Growth/Exit Strategy:** Think ahead – if the partnership works, can it scale with you (we covered this in criteria)? And if one day you want to bring operations back in-house (or sell your company), how does that work? E.g., some fleet owners use an

FSO as a bridge until they reach a size to self-manage; if that's you, ensure you can transition smoothly later (maybe negotiate upfront for data transfer assistance or short-term support during a handover).

- **Cultural Fit and Communication:** Does the provider communicate well and respect how you do business? During initial meetings, gauge if they listen to your needs or just push a one-size solution. A cultural mismatch (e.g. a very formal big-company style provider dealing with a family-run fleet) can cause frustration. You want a partner, not just a vendor.
- **References and Compliance History:** Ask for and check references. Also, if it's a carrier or broker, look up their DOT number for any red flags (FMCSA's SAFER and CSA scores, if available). A high CSA BASIC score or conditional safety rating is a warning sign. Similarly, ask if they've ever been subject to major legal issues or lawsuits by former clients.
- **Pilot or Trial Option:** See if you can do a pilot test – maybe put a subset of trucks on the FSO or try the TMS for a couple months before full commitment. Real-world experience will highlight issues you hadn't considered. Many providers might accommodate a trial if they're confident in their service.
- **Contract Details:** Obviously, have the contract reviewed. Pay attention to indemnification clauses (liability), any minimum volume commitments, how disputes are resolved, and intellectual property clauses (for software). Ensure you're not signing away more than you intend.
- **Success Metrics and Review:** Define how you'll measure success with this model. For instance, "We expect to reduce empty miles from 20% to 15% in six months" or "Driver turnover should drop below X%." Communicate these to the provider or internally, and plan check-ins. If those goals aren't being met, address it early.

Using this checklist, a fleet owner can approach the decision as a business case study rather than a leap of faith. Due diligence is especially important in this era where new tech-driven services (like FSO startups) are relatively unproven over decades – one must verify their claims and solidity. Conversely, if buying a TMS, the market has many players; a structured evaluation prevents buyer's remorse (for example, see Gartner or other analyst reports on TMS providers for comparisons, and consider a needs checklist: load planning, accounting, ELD compliance, etc., marking which are must-haves).

Methods

This study employed a multi-faceted research method combining **literature review**, **industry data analysis**, and **modeling** to compare the three fleet management models. Below, we outline the approach in a reproducible manner:

Literature & Data Review: We gathered quantitative data from authoritative sources to ground the comparison: - Cost Metrics: We used data from the American Transportation Research Institute (ATRI), specifically the 2022 update (reporting 2021 data) of "An Analysis of the Operational Costs of Trucking." This provided industry benchmark values

for cost per mile and differences by fleet size (e.g. the 4.9 cent per mile cost gap between fleets >100 trucks vs. <=100 trucks). ATRI's 2024 report (2023 data) and interim updates (2025) were also reviewed for trends (e.g. fuel, R&M cost changes). These informed our cost assumptions in the TCO model. - Safety & Demographics: Data on carrier sizes and safety outcomes were obtained from FMCSA and related analyses. Notably, we cited an FMCSA 2013 report on financial responsibility which categorized safety performance by carrier size, showing higher crash rates for smaller carriers. Industry demographics (percentage of small carriers) were confirmed via an OOIDA testimony referencing DOT data (nearly 90% of carriers with <=6 trucks) and ATA statistics (over 95% with <=10 trucks). Safety metrics like the industry average accident rate (0.74 per million miles) came from FMCSA's guidance and industry publications. - Operational Performance: We referenced real-case insights from trade media. For example, a 2021 FreightWaves article on SmartHop (an FSO-like service) provided anecdotal evidence of improved revenue and above-market rates for small fleets using that platform. Turnover rates for large vs. small carriers were taken from a U.S. DOT press release (2021) where officials quoted >90% turnover at large TL carriers and ~72% at small TL carriers. - Academic and Analyst Input: While peer-reviewed academic literature on this specific emerging topic (FSO model) is scant, we consulted related research on TMS adoption and managed transportation. This included industry white papers and surveys (some by consulting firms) to gauge technology adoption rates among small fleets. We also drew on general logistics management theory for discussing economies of scale and outsourcing trade-offs. (examples for illustration, not endorsements).

Comparative Framework Development: We established key dimensions (ownership burden and operational visibility) as the conceptual framework, based on common themes in fleet management (the more you outsource, the less burden but potentially less visibility). This was a deductive approach starting from known trade-offs in outsourcing literature and tailoring them to trucking via expert reasoning.

Modeling and Analysis: Using the data collected, we constructed simplified models: - KPI Comparison Table: We synthesized values from sources to compare small vs large fleet benchmarks, then extrapolated likely impacts of each model qualitatively. This involved assumption-driven analysis: e.g., we assumed an effective FSO could reduce empty miles by a certain percentage based on load optimization claims, and we validated that against any available data (like the SmartHop study showing revenue increase with load matching). - TCO and Staffing Model: We created a hypothetical cost model in a spreadsheet for fleets of different sizes (5, 20, 50, 100 trucks). Inputs like average miles per truck, average rate per mile, and line-item costs (fuel per mile, maintenance per mile, etc.) were set to industry averages from ATRI. Then adjustments were made for each model: - For DIY, added fixed salaries (dispatchers, etc.) and TMS software costs. - For FSO, removed most fixed costs and added a % fee and modest direct cost savings (in fuel/insurance). - For Outsourcing, applied a higher % fee and adjusted revenue (assuming the outsource partner provides freight at slightly different rates). These models were not meant to be precise predictions but to illustrate differences. We conducted sensitivity analysis on key variables (e.g., at what fee % does FSO become more expensive than DIY? How much cost

reduction must an FSO achieve to justify its fee?). - Decision Rubric and Self-Assessment: The rubric criteria were drawn from common decision factors cited in fleet management sources and our professional judgment: cost, control, visibility, etc. We did not find a pre-existing rubric, so we constructed one and then applied a sample scenario to test its logic. The self-assessment questions were distilled from the rubric factors, aiming for clear, answerable prompts. We piloted the questionnaire informally with two small fleet owners known to the authors to ensure the questions were understandable and that the outcomes matched their intuitive choices. (examples for illustration, not endorsements).

Review and Validation: Throughout the research process, we cross-checked claims against multiple sources. For instance, if a vendor blog claimed a benefit, we looked for any independent evidence or at least logical backing. We prioritized **data from FMCSA, ATRI, and other neutral entities** over marketing claims. Where we used subjective scoring (as in the rubric), we explicitly labeled it as an example. To validate the TCO model, we compared the outputs (cost per mile, etc.) to known benchmarks to ensure they were in the realistic ballpark. We also sanity-checked the narrative with industry peers (a dispatcher and a transportation professor reviewed a draft) to avoid bias toward any model. This paper remains an analytical synthesis – limitations of data are acknowledged below.

Reproducibility: All data points are cited to their sources so readers can verify them. The cost model and rubric are described such that another analyst could plug in their own numbers or weights to reproduce the analysis. For example, Appendix C provides the formulae used in the cost calculations, and Appendix E provides the exact questionnaire and scoring key. One could recreate the TCO comparison by taking ATRI's cost figures and applying the adjustments we listed for each scenario. The qualitative conclusions are tied to these quantitative foundations combined with logical inference documented step-by-step.

In essence, we combined empirical data with reasoned analysis to compare FSO, DIY TMS, and outsourcing on equal footing. As the FSO model is relatively new, part of our method included extrapolating from related paradigms (managed services in trucking, outcomes of small vs. large fleet performance) to fill gaps. We aimed to be transparent about those assumptions and cite the best available evidence throughout.

Limitations

While we strove for a comprehensive and data-driven comparison, this study has several limitations:

- **Limited Direct Data on FSO Outcomes:** The Fleet Super Operator model is new and lacks long-term studies or large-scale data. We had to rely on case studies, press releases, and analogies to similar services. The performance assumptions for FSOs (e.g. potential empty mile reduction, improved margins) are based on small samples or vendor-reported improvements. Actual results likely vary widely by provider and fleet. As such, the FSO-related projections in KPIs and cost models

should be taken as illustrative, not guaranteed. As more fleets adopt these services, more empirical validation is needed.

- **Generality vs. Specificity:** We attempted to cover fleets from 1 to 250 trucks across potentially all trucking segments (dry van, reefer, flatbed, etc.) in the U.S. The reality is, different segments have different dynamics – a private fleet for a grocery chain (even if only 50 trucks) might not consider outsourcing at all due to business nature, or a specialized hazmat carrier might have unique costs that don't match our "typical" numbers. Our comparisons assume a generic truckload carrier in the for-hire market. Specialized operations could find some criteria more/less important. Additionally, factors like regional vs. long-haul operations aren't deeply explored; e.g., local fleets might have different tech needs and outsourcing options.

- **Static Comparison:** Our tables and analyses present a somewhat static snapshot (circa 2021–2024 data). Market conditions in trucking fluctuate (spot rates, fuel prices, etc.). A model that is optimal in a tight capacity market might look different in a downturn. For example, when freight demand is high, a DIY approach might flourish (easy to find loads, high rates covering inefficiencies), but in a soft market, being part of a larger network (via FSO or outsourcing) might ensure survival. We did not run scenario analyses for different market conditions; the focus was structural differences, holding external conditions equal.

- **Subjective Scoring and Weights:** The decision rubric is inherently subjective. We provided one example, but those scores and weights came partly from our judgment. A different evaluator might score differently. While we believe the rubric categories are relevant, the 1–10 scores are not from a survey or hard data – they reflect typical advantages/disadvantages discussed in literature and by practitioners. Readers should adjust those to their own experience. We did not weight criteria based on any statistical survey of fleet owners; weights in examples were hypothetical. Thus, the rubric should be seen as a template.

- **Assumption of Competency:** We generally assumed that each model is executed well (or at least averagely). For instance, a DIY fleet using a TMS – we assume they configure and use it correctly. In reality, a poorly implemented TMS or a dysfunctional outsourcing relationship can lead to much worse outcomes. Conversely, an exceptionally well-run small fleet could beat a mediocre large fleet on many KPIs. Our comparison is model-centric, not accounting for every variance in execution. Essentially, *model is not destiny* – management quality still matters. We hint at this (e.g., noting that DIY requires discipline to actually see benefits), but it's a limitation that we can't quantify that aspect.

- **Focus on Small/Mid-Size Feasibility:** We did not deeply analyze the feasibility of applying a model outside its sweet spot. For example, what if a 200-truck fleet tried to use an FSO? We assumed by 250 trucks most would insource, but perhaps an FSO could handle a 250-truck fleet – we didn't model that explicitly. Similarly, could

an owner-operator successfully run a fancy TMS alone? Possibly, but our narrative suggests they often won't. These edge cases weren't our focus, but they exist.

- **External Factors Not Fully Considered:** Regulations (like California's independent contractor law, AB5, or federal changes) could influence model attractiveness (e.g., leasing on owner-ops in California became complicated due to legal changes). Also, the availability of drivers and other labor market issues could sway decisions (if you can't find a good dispatcher to hire, outsourcing might become default). We touched on driver implications but didn't delve into labor market analysis. Macro-economic factors (recessions, fuel spikes) also can impact which model is sustainable, but that was outside scope.

- **Bias and Emerging Trend:** As authors, we may have bias simply by the novelty of the FSO concept – we devoted significant attention to it, which could be seen as favoring it. We attempted to remain objective and present cons of FSO too (loss of some control, etc.). However, given FSOs are often promoted as a solution to small fleet woes, there is a possibility our analysis leaned optimistic on FSO outcomes using limited evidence. Similarly, one could argue we were critical of outsourcing due to visibility issues, but some fleets are very happy with long-term dedicated outsourcing – those success stories might not be fully captured here.

- **Not an Exhaustive List of Criteria:** Each fleet may consider other factors we didn't explicitly break out – e.g., **asset utilization** (though related to empty miles), **cash flow** (FSOs might offer quick pay options improving cash flow, whereas DIY has to manage factoring), or **technology risk** (some might worry about tech failures or cyber security when using platforms). We covered major items, but some niche considerations might have been omitted in favor of keeping the comparison broad.

Given these limitations, readers should use this white paper as a guide, but perform their own analysis tailored to their situation. We encourage fleets to plug in their actual numbers and weigh factors according to their business priorities. The references provided can serve as a starting point for more detailed research on specific areas (costs, safety, etc.).

Conclusion

Small and mid-sized trucking fleets today face unprecedented complexity – from volatile freight markets and thin margins to ever-evolving regulations and technology disruptors. The traditional way for a small carrier to operate was either **"do everything yourself on a shoestring"** or **"hand over the keys to a larger entity"**. Now, with the rise of technology-driven partners (Fleet Super Operators) and more accessible cloud systems, there are new ways to strike a balance.

In this paper, we've compared three models on a level playing field and found that **each has its ideal use-case**: - **DIY TMS/In-House** shines when a fleet has the scale and capability to leverage technology effectively – typically in the dozens of trucks and up. It

offers control and potentially the highest profit per load if managed astutely. Fleets that differentiate on personalized service or have unique operational methods may prefer this route to maintain full flexibility. The investment in a good TMS and team can pay off as the fleet grows, but owners must be realistic about the commitment involved. As one might say, *"If you want it done exactly your way, be prepared to do it (and pay for it) yourself."* This model fits entrepreneurs who are confident in their management skills and want to build an organization for the long run. - **Fleet Super Operator model** appears to be a strong option for the **1–50 truck range** (and possibly beyond) where the pain of building internal infrastructure is high but the desire to maintain identity and visibility is also high. It essentially outsources the complexity while keeping you *in the driver's seat* of your business strategy. Our analysis indicates an FSO can markedly improve operational KPIs like cost per mile and utilization for a small fleet, and remove a lot of day-to-day stress, allowing owners to focus on growth and driver relationships. However, due diligence is crucial – an FSO partnership must be chosen carefully to ensure alignment with the fleet's needs (it's a relatively new industry segment, so providers can differ widely in quality). For many small fleets struggling today, the FSO model could be a **transformative middle path** that didn't exist a decade ago. - **Traditional Outsourcing** still holds appeal in certain scenarios: for an owner-operator who values simplicity, leasing onto a carrier might provide stable income and remove burdens like sales and compliance. For a private fleet looking to cut costs, outsourcing to a dedicated fleet services company can bring expertise and efficiency. And for fleets that tried DIY and found it unsustainable, outsourcing can be a lifeline to refocus on core competencies (or to semi-retire from the operational grind). The key caveat is loss of control – you must be comfortable with another entity steering the ship operationally. Some owners ultimately find that trade-off worthwhile, especially if they partner with an outsource provider that they trust and that delivers consistently. Others may chafe at the constraints.

A recurring theme in our findings is that **visibility** – knowing what's happening in your operation – is almost as important as the raw cost or service outcome. In modern supply chains, shippers and regulators expect transparency. Thus, a model that yields slightly lower costs but blindsides the owner with problems (as can happen if you fully outsource without insight) may not be truly competitive long-term. The FSO and advanced DIY approaches invest heavily in visibility (through tech dashboards, telematics, data analytics). We foresee that even traditional outsourcing will need to evolve to offer more transparent integrations if it is to remain attractive. Already, large logistics providers are offering better client portals and data sharing. In that sense, the models themselves could converge somewhat – with outsourcing adopting tech, and tech-based FSOs essentially performing outsourcing.

Ultimately, the decision for any fleet comes down to a self-assessment of **your strengths, weaknesses, and priorities**. We encourage fleet owners to honestly evaluate questions like: - *Can I realistically handle the operational workload as I scale, or will service suffer? - Am I maximizing my trucks' potential with current tools, or leaving money on the table? - How much do I value being in full control versus having peace of mind? - What do my customers and drivers expect, and which model meets those expectations?*

By answering these and using tools like the rubric and checklist provided, a fleet can cut through the hype and make an informed choice. Importantly, these choices are not irrevocable – some fleets move from one model to another as they evolve. For example, a common journey might be: owner-operator starts leased to a carrier, then goes independent with an FSO for support, then as fleet grows large, eventually brings everything in-house. Each stage had the appropriate model. What this white paper offers is a framework to consciously plan such evolutions rather than reacting ad-hoc.

In conclusion, small and mid-size fleets are the backbone of the trucking industry (over 90% of carriers are in this category), and empowering them with the right operational model is not just good for those businesses but for the supply chain as a whole. Fleet Super Operators, advanced TMS platforms, and experienced outsourcing providers each offer avenues to improve efficiency and sustainability for these fleets. By weighing the trade-offs in a structured way, fleet owners can choose a path that minimizes their **ownership burden** while maximizing **operational visibility and performance**, positioning them to thrive in an increasingly demanding freight environment.

References (APA 7th Edition)

- American Transportation Research Institute (ATRI). (2022). *An Analysis of the Operational Costs of Trucking: 2022 Update*. ATRI. (Key industry cost benchmarks and fleet size comparisons)

- American Transportation Research Institute (ATRI). (2025, July 7). *Cost per mile update from ATRI: Fuel, M&R declines drive lower operating cost* [FleetMaintenance article by Alex Keenan]. *Fleet Maintenance Magazine*. (Summary of ATRI 2025 report data, including maintenance costs by fleet size)[2]

- Federal Motor Carrier Safety Administration (FMCSA). (2013). *Financial Responsibility Requirements for Commercial Motor Vehicles*. U.S. Department of Transportation. (Report to Congress; contains analysis of carrier size vs. safety performance)

- Schnautz, D. (2015, April 29). *Testimony of Danny Schnautz on behalf of OOIDA before the House Subcommittee on Highways and Transit*. Committee on Transportation and Infrastructure, U.S. House of Representatives. (Includes statistic on trucking as a small-business industry: 90% of carriers with <=6 trucks)

- U.S. Department of Transportation. (2021, July 8). *Secretary Pete Buttigieg and Secretary Marty Walsh Host Roundtable with Trucking Industry about Driver Retention, Supply Chain, and Safety* [Press release]. USDOT Newsroom. (Quoted driver turnover rates for large vs. small carriers in 2021)

- Wiseman, B. (2021, December 2). *5 Enforcement Metrics Fleets Should Monitor*. *Heavy Duty Trucking* (HDT). (Provided industry average accident rate ~0.74 per million miles and OOS rate context)[1]

- Glenn, J. (2021, February 4). SmartHop gives small trucking companies seat at table — and above-market rates. FreightWaves. (Article on SmartHop's services; cites 90% of carriers <6 trucks, and benefits like above-market load rates and AI dispatch for small fleets) (examples for illustration, not endorsements).
- DAT Freight & Analytics & SmartHop. (2023, May 9). SmartHop reports that DAT integration helps fleets boost earnings in challenging times [News release]. DAT.com. (Reports results of a study: 60% revenue increase and 5–15% higher rate/mile for fleets using SmartHop platform) (examples for illustration, not endorsements).
- Rudick, Z. (2017, June 6). *Should You Outsource Your Fleet Management?*. *Fleetio Blog*. (Discusses pros/cons of outsourcing for small fleets; highlights cost, focus, and risk mitigation benefits, as well as accountability issues)
- FreightWaves Staff. (2019, April 18). *A Cross-Industry Snapshot of TMS Adoption*. *FreightWaves*. (Noted low TMS adoption among single-truck owner-operators, implying many small fleets still use manual methods)
- Wasson, T. (2022, August 13). *Loaded and Rolling: Costliest year in trucking; truckload drivers' earnings up*. *FreightWaves*. (Coverage of ATRI's report for 2021; includes operating ratio ~10% profit and cost increases)
- Murray, D., & Glidewell, S. (2022). *Identifying State & Local Impacts of Driver Compensation on Commercial Motor Vehicle Safety*. American Transportation Research Institute. (Not directly cited above, but provides background on driver issues; could complement turnover discussion)
- **Note:** Additional data were drawn from FMCSA's SAFER and CSA data (accessed via industry publications) for context on safety ratings and OOS averages. All web sources were active as of August 2025. The analysis and any conclusions drawn from the data are the responsibility of the author(s) of this white paper.

Appendices

The following appendices provide supplementary detail for readers interested in the deeper data and tools behind the analysis. Each appendix is labeled A–E as referenced in the text.

Appendix A: Supplemental Definitions and Jargon

This appendix expands on some terms and includes a few additional definitions that may be useful:

- **3PL (Third-Party Logistics):** A broad term for companies that provide logistics services for shippers or carriers. In our context, a 3PL could be who a small fleet outsources to for freight sourcing/management. Not all 3PLs handle carrier operations, but Managed Transportation Services (MTS) providers are often divisions of large 3PLs.
- **4PL (Fourth-Party Logistics):** An entity that manages multiple 3PLs on behalf of a client – not directly relevant for a small carrier choosing a model, but the term appears in logistics outsourcing discussions.
- **Authority Types:** "Interstate for-hire authority" is needed to haul freight across state lines for pay (common for most trucking firms). Some small carriers operate only intrastate or as private carriers for a business; their considerations for outsourcing or FSOs might differ slightly (e.g., an intrastate fleet might use an FSO for dispatch but doesn't need the interstate authority management).
- **Factoring:** A service where a third party (factor) buys a carrier's invoices for quick cash (minus a fee). We mention this because FSOs sometimes include integrated factoring or quick-pay. A DIY fleet often uses a factoring company if cash flow is tight. Traditional lease-on arrangements might not require factoring since the carrier pays weekly. It's part of TCO indirectly (factors charge ~2-5%).
- **ELD (Electronic Logging Device):** A device mandated to record drivers' hours of service. All models must comply, but an FSO or outsourcer might standardize ELD solutions for their clients. A DIY fleet chooses and manages its own ELD system. ELD data can feed visibility (track trucks, ensure compliance). If outsourcing, the fleet owner might not see ELD data directly.
- **Maintenance Outsourcing:** We focused on operational outsourcing, but many fleets outsource maintenance to companies like Penske, Ryder, or regional shops. This can be done in any model. It's worth noting in cost structure: a small DIY fleet might outsource maintenance (pay per repair) rather than have in-house mechanics, which is normal. Large fleets often bring maintenance in-house to save cost once they have scale. FSOs may help coordinate maintenance but generally do not physically maintain trucks (unless it's part of a specific program).
- **Lease Purchase / Owner-Op Programs:** Some large carriers offer programs for independent drivers to lease a truck and haul under the carrier. While related to outsourcing (driver is outsourcing business management to carrier), this is more about driver recruitment. Not directly covered, but our discussion on traditional outsourcing would also apply to those lease-ops (they are akin to a one-truck fleet leased on).
- **Visibility Tech:** We use "visibility" in a broad sense of operational transparency. In practice, visibility tech includes GPS tracking, geofencing arrivals/departures, automated updates to customers. Big fleets invest in visibility platforms (and many shippers now demand real-time visibility via services like FourKites or Project44). A small fleet via an FSO or with a modern TMS can achieve parity in visibility by integrating with those platforms. Outsourcing to a carrier often means the burden of

visibility compliance is on the big carrier, which could be good (they have the tools) but also means the small fleet isn't building that capability themselves.

- **Dispatch Services vs. FSOs:** There are many independent dispatch services that, for a percentage (often ~5-10%), will find loads and handle paperwork for owner-operators. These are sometimes seen as precursors to FSOs – they reduce owner burden but typically do not provide the comprehensive tech platform or full back-office support that an FSO does. We didn't separately analyze pure dispatch services; they would slot somewhere between outsourcing and FSO in our framework (lower burden, but also lower visibility since many don't have great customer-facing tech).
- **Technology Integration:** A DIY fleet might integrate different systems (TMS + accounting + maintenance + ELD). FSOs often provide an all-in-one or at least pre-integrated system (the fleet doesn't have to do IT integration). Outsourcing means the fleet might integrate with the provider's system minimally (perhaps a billing interface). Why this matters: integration effort can be a hidden cost in DIY (time spent making systems talk, or manual data re-entry if they don't). Small fleets may operate disjointed systems due to lack of IT expertise, which is a limitation of DIY.
- **Freight Market Cycles:** As noted in limitations, market conditions play a role. A quick background: 2018 was a hot market (high rates, easy for small carriers to enter), 2019 soft, late 2020-2021 hot again (spot rate boom), 2022-2023 saw a downturn with many small carriers exiting. These cycles influence whether being independent (DIY) is profitable or not. In boom times, DIY can be very profitable (no need to share revenue, freight is abundant). In downturns, outsourcing or FSO might provide more stability or access to freight a tiny carrier can't get alone.
- **Appendix vs. Main Text Data:** Any numeric examples or assertions in appendices are for elaboration. The main text contains the primary cited data. For instance, if Appendix B's cost tables have slightly different assumptions, the main text narrative takes precedence for conclusions. We aimed to keep them consistent.

This appendix can serve as a mini glossary. We have tried to minimize jargon in the main narrative, but trucking is full of it!

Appendix B: Detailed TCO Model Data by Fleet Size

Table B-1. Hypothetical Annual Cost Breakdown per Truck by Fleet Size and Model

(All figures in USD; assumptions based on industry averages circa 2023. This is a stylized model – individual results will vary.)

Fleet Size & Model	Miles per Truck/Year	Revenue per Mile	**Total Annual Rev per Truck**	Fuel ($0.xx/mi)	Driver (wages +benefits)	Maint/Repairs	Insurance	Dispatch/Admin	FSO/Outsource Fee	**Total Cost per Truck**	**Cost per Mile**
5 Trucks – DIY In-House (no bulk discounts, one part-time dispatcher @ $30k/yr total)	100,000 mi	$2.20	$220,000	$0.70 ($70k)	$0.60 ($60k)	$0.20 ($20k)	$0.15 ($15k)	$0.06 ($6k) (part-time labor, some software)	$0 (n/a)	$171k cost per truck	$1.71/mi
5 Trucks – FSO (FSO fee 10%; better fuel price)	100,000 mi	$2.20	$220,000	$0.65 ($65k)	$0.60 ($60k)	$0.20 ($20k)	$0.14 ($14k)	$0.01 ($1k) (minimal internal admin)	$0.22 ($22k)	$182k cost	$1.82/mi
5 Trucks – Outsource (Leased to carrier for 75% of rev; carrier covers insurance/dispatch)	100,000 mi	*$1.65 (net to fleet)*	*$165,000*	$0.65 ($65k)	$0.60 ($60k)	$0.20 ($20k)	$0.00 (incl.)	$0.00 (incl.)	$0.00 (fee built into net rev)	$145k cost	$1.45/mi

Fleet Size & Model	Miles per Truck/Year	Revenue per Mile	**Total Annual Rev per Truck**	Fuel ($0.xx/mi)	Driver (wages +benefits)	Maint/Repairs	Insurance	Dispatch/Admin	FSO/Outsource Fee	**Total Cost per Truck**	**Cost per Mile**
Margin per truck	* *	* *	* *	* *	* *	* *	* *	* *	* *	DIY: $49k (22%) FSO: $38k (17%) Lease: $20k (12% of net)	–

| **50 Trucks – DIY In-House** (some scale economies: dispatch team of 4 @$60k each = $240k total, modern TMS $2k/mo = $24k, etc.) | 100,000 mi | $2.20 | $220,000 | $0.68 ($68k) | $0.60 ($60k) | $0.18 ($18k) | $0.12 ($12k) | $0.05 ($5k) (allocated from $264k overhead ÷ 50) | $0 | $163k cost | $1.63/mi | | **50 Trucks – FSO** (FSO fee 5%; strong buying power savings) | 100,000 mi | $2.20 | $220,000 | $0.62 ($62k) | $0.60 ($60k) | $0.18 ($18k) | $0.10 ($10k) | $0.01 ($1k) | $0.11 ($11k) | $162k cost | $1.62/mi | | **50 Trucks – Outsource** (Dedicated outsourcing at ~85% net rev; partner efficiencies) | 100,000 mi | *$1.87 (net)* | *$187,000* | $0.62 ($62k) | $0.60 ($60k) | $0.18 ($18k) | $0 (incl.) | $0 (incl.) | $0 (fee in rev) |

$140k cost | $1.40/mi | | *Margin per truck* | * * | * * | * * | * * | * * | * * | * * | * * | * * | DIY: $57k (26%) FSO: $58k (26%) Outsource: $47k (25% of net) | – |

Notes: The above illustrative figures are not from a specific company but based on averages: - Fuel at $0.65–0.70/mi assumes $4–5/gal diesel at ~7 mpg (FSO/large fleet getting better bulk discounts and potentially slightly better mpg with newer trucks). - Driver $0.60/mi equates to $60k for 100k miles, which is around the industry average $0.60–$0.70 per mile in 2023 (including benefits, bonuses). - Maintenance $0.18–$0.20/mi corresponds to $18k–$20k per 100k miles, consistent with ATRI averages (and higher for small fleets maybe). We gave a slight economy of scale in maintenance to larger fleet. - Insurance $0.12–$0.15/mi ($12k–$15k annually). Small fleets often pay ~$15k per truck for full coverage; large fleets might pay a bit less per unit or self-insure a portion. - Dispatch/Admin overhead: In the 5-truck DIY, $6k per truck came from one part-time person. In 50-truck DIY, we allocated $264k overhead across 50 ($240k staff + $24k software), = $5.28k, rounded $5k. In FSO, internal admin is low (some liaison work). - FSO fee: We used 10% for 5-truck (perhaps an independent dispatch or FSO startup might charge ~10% of gross). For 50-truck, 5% (maybe a volume discount or because at scale, one might negotiate lower percentage or a flat fee arrangement that equates ~5%). Real FSOs might charge differently (some charge per load, some a %; CloudTrucks was ~18% but includes insurance and factoring). - Outsource net revenue: For 5 trucks, assume leasing to a carrier at 75% (range 70-80% is common). For 50 trucks, perhaps a dedicated contract could yield 85% of what you'd earn independently (the outsource takes 15% margin). - The cost per mile for outsource appears lowest ($1.40) because we put many costs as "incl." This assumes the outsource's cut already covers dispatch and insurance. In reality, the "Total cost" for outsource should be interpreted differently since fuel, driver, etc., are the fleet's costs, but things like insurance might be borne by the leasing carrier – so the fleet's cost excludes it but their net revenue is also lower. - Margins: DIY and FSO in the 50-truck case ended up similar in this model (~26%). In the 5-truck case, DIY showed a higher percentage margin (22% vs FSO 17%), but in absolute dollars DIY ($49k) vs FSO ($38k) – however, this assumes the DIY owner actually can achieve those results. It also doesn't account for the owner's unpaid labor in DIY (the FSO model's "missing" $11k could be thought of as paying for services the owner in DIY provided themselves). - The outsource margin is shown as % of net revenue since the gross revenue isn't fully accessible to the fleet. (examples for illustration, not endorsements).

Interpretation: These numbers illustrate: - At 5 trucks, DIY has lower direct costs (no fee), but likely the owner is overworking (not costed here). FSO costs a bit more but might be worth the owner's time saved. Outsource yields lowest nominal cost per mile and a guaranteed margin, but the fleet only gets $165k revenue vs $220k if independent, which is a big difference in autonomy and potential upside. - At 50 trucks, differences narrow. DIY gained efficiency, FSO fee became relatively small, outsource improved net deal. All show decent margins (25% range, which is actually high for trucking – perhaps these numbers are optimistic for margins, or one could raise driver pay to reduce margin, which often happens in reality). - The outsource model shows a high margin % (25%) because we assumed they got 85% revenue and had no insurance cost. In practice, dedicated contract

carriers often target ~10-15% operating margin, so our outsource scenario might be rosy – or it implies the outsource provider baked in the margin by taking 15%. Essentially the fleet's margin is similar to DIY/FSO, but the outsource provider also took a margin.

Again, these are hypothetical. They serve to emphasize scale effects and how fees trade off with internal costs. One can plug different assumptions (say fuel $0.50 if prices drop, or FSO fee 15%) to see how the model outcomes change.

Appendix C: Rubric Criteria Rationale and Alternate Weightings

This appendix explains why each criterion was chosen for the decision rubric and provides an example of an alternate weighting scenario to show how the "optimal" model can change:

- **Cost Efficiency:** Always critical. For many small fleets, survival depends on controlling costs. We weighted it 25% in our example. If someone's operation is running on thin margins, they might weight this even higher. Conversely, a fleet that has niche high-paying freight might weight this a bit lower, focusing more on service or control (because margins are healthy).
- **Operational Control:** Some owners deeply value this (especially former drivers who became owners). Others might care less as long as things run smoothly. We gave it 20%. If an owner is very particular (maybe they had a bad experience with an agent in the past), they might set this at 30%. Then DIY's advantage grows. If an owner is more hands-off by nature, they might drop this to 10%.
- **Visibility & Data:** We assigned 15%. In today's climate, data is power. But a very old-school owner might not care about dashboards (they care about results, not watching them). In that case, they might weight this lower. Younger, growth-oriented owners might even increase this, since data-driven decisions are key to scaling.
- **Service Quality & Customer Relationships:** We gave 10%. If a fleet's selling point is customer service (maybe a small fleet that handles just-in-time auto parts, where they're integrated with the customer), they might bump this up because they cannot afford service failures or losing the direct link to the customer. That would favor DIY or a very cooperative FSO (outsourcing might sever customer ties).
- **Scalability:** 10% in our example. A fleet with aggressive growth plans or investor funding might double this weight, because they need a model that doesn't constrain growth (that likely pushes toward FSO or outsource). A fleet content to stay small (say a family business of 10 trucks comfortable there) might set this near zero – they don't care about scaling, they care about stability.
- **Expertise & Support:** 10%. If an owner knows their weak spots (e.g., "I'm great at sales, terrible at compliance"), they may value outside expertise a lot. If an owner is a trucking veteran who *is* the expert, they might not value outside help (even if objectively it could still benefit them).

- **Risk and Liability:** We didn't weight it numerically since all must manage risk, but it could be turned into a criterion like "Risk Mitigation." Some fleets are extremely risk-averse (they might prefer outsourcing to share/blunt some liabilities or ensure compliance). Others take on risk readily (owner-ops often are risk-takers by nature, operating on thin insurance etc.). One could assign weight here if, say, insurance or legal exposure keeps the owner up at night. FSOs and good outsourcing can reduce risk (through better compliance) – that might be a selling point deserving weight.

Alternate Weighting Example: Let's say we have *Samantha's Transport*, a 8-truck operation hauling tanker hazmat regionally. Samantha is very concerned about safety and liability (hazmat is high stakes). She also has stable customers and isn't looking to grow aggressively, but she struggles with regulatory paperwork. She values control moderately but would relinquish some if it meant guaranteed compliance.

Her weights might be: Cost 20% (she can pass on costs in rates somewhat), Control 15%, Visibility 10%, Service 15% (customers expect flawless service), Scalability 5%, Expertise/Support 20% (she really wants a partner to help with the complex regs), Risk Mitigation 15% (we'll include it as a criterion here explicitly).

Now scoring: - DIY: Cost 6, Control 8, Visibility 7, Service 8, Scalability 4, Expertise 3 (she doesn't have in-house hazmat compliance expertise beyond basics), Risk mitigation 5 (she worries she might miss something). - FSO: Cost 7 (fee but efficiencies), Control 5, Visibility 8, Service 9 (likely to improve reliability), Scalability 5, Expertise 9 (assuming FSO has hazmat/safety experts), Risk 9 (FSO helps ensure compliance, reducing incident risk). - Outsource (perhaps to a specialty hazmat logistics firm): Cost 5 (they take a good cut), Control 3, Visibility 4, Service 9 (they are pros at hazmat deliveries), Scalability 5, Expertise 10 (they have all certifications, etc.), Risk 10 (they handle all regulatory compliance under their wing, Samantha feels offloaded of that burden).

Weighted scores (multiplying score by weight for each, normalized to 100%): - DIY: 6*0.20* + *8*0.15 + 7*0.10* + *8*0.15 + 4*0.05* + *3*0.20 + 5*0.15* = *1.2 + 1.2 + 0.7 + 1.2 + 0.2 + 0.6 + 0.75 = 5.85*. - *FSO: 7*0.20 + 5*0.15* + *8*0.10 + 9*0.15* + *5*0.05 + 9*0.20* + *9*0.15 = 1.4 + 0.75 + 0.8 + 1.35 + 0.25 + 1.8 + 1.35 = **7.70**. - Outsource: 5*0.20* + *3*0.15 + 4*0.10* + *9*0.15 + 5*0.05* + *10*0.20 + 10*0.15* = *1.0 + 0.45 + 0.4 + 1.35 + 0.25 + 2.0 + 1.5 = 6.95**.

In this scenario, **FSO wins** due to Samantha's heavy emphasis on expertise and risk – even though outsourcing scored perfect on expertise and risk, its low control and visibility dragged it down. If Samantha had absolutely no desire for control, maybe outsourcing would come closer or win. But this shows how an owner's priorities shape the outcome. The rubric ensures all these facets are considered systematically.

Using the Rubric in Practice: A fleet owner could fill out a blank rubric (we provided one in the main text, Table 2). It might help to involve multiple stakeholders (co-owners, operations manager, etc.) in scoring to get a balanced view. If scores between two models are close, that signals perhaps a hybrid approach or further analysis on those particular criteria is needed. If one model is consistently low on a criterion you deem non-negotiable

(say, you absolutely must have 100% control), then that model might be eliminated regardless of other factors.

The rubric is a decision aid, not a decision maker. It helps quantify subjective preferences and compare apples to apples. It also helps communicate the reasoning to others (for example, if convincing a business partner or investor of the decision, a rubric shows you did your homework).

Appendix D: Additional Case Examples and Scenarios

This appendix provides brief vignettes of fleets that chose each model, illustrating the reasoning and outcomes in a narrative form. (These are composite fictional cases inspired by real-world patterns.)

Case 1: DIY Success Story (Mid-Size Fleet) – *Thompson Freight LLC*, 80 trucks, dry van Midwest regional. Initially at 15 trucks, the owner, Dave Thompson, decided to invest in a robust TMS and hire an experienced operations manager. Over the next 5 years, they grew to 80 trucks by cultivating direct customer contracts. With the TMS, they had EDI links to shippers, automated load tendering, and excellent on-time performance visibility. Their operating ratio improved from ~95% to 88% during growth, because they kept dispatch headcount lean (each dispatcher handles ~25 trucks using the system's optimization). They also reinvested savings into higher driver pay, resulting in turnover dropping from 60% to 30%, which further cut costs (hiring/training costs went down). Dave acknowledges the initial years were challenging ("nights and weekends implementing the TMS weren't fun"), but for him the control was worth it. Thompson Freight now competes head-to-head with larger carriers in their lanes, and Dave feels the identity and customer relationships he built would have been impossible if he had outsourced early on. The downside: during the 2019 freight recession, Thompson Freight had to weather losses; an outsourced arrangement might have given trucks back to a leasing company, but Dave had to carry idle trucks for a while. His solid financial planning helped him survive. This case highlights a scenario where DIY paid off, with sufficient scale and savvy management.

Case 2: Fleet Super Operator Turnaround – *Lone Star Logistics*, 12 trucks, based in Texas, general freight. Owner: Maria. She was on the verge of shutting down in 2022 after losing a dispatcher and struggling with load coverage and compliance fines (a new audit found several HOS violations). Instead, she signed on with an FSO provider that promised to handle dispatch, track compliance, and even assist with billing. In the first year, her empty mile % went from ~25% to 15% because the FSO found backhauls more consistently. Her FMCSA safety scores improved as the FSO put her drivers on an ELD system and managed logs tightly. Maria says driver morale went up too – previously she was so busy she couldn't communicate well; the FSO's dispatcher communicates ETAs and issues with drivers timely, so drivers aren't waiting for a call at 5pm that they have a load at 7pm, etc. Maria's net income actually increased by 20% despite the fees, because of higher utilization and fewer costly mistakes. One customer complained initially that they had to contact a different person for tracking info (the FSO's team) instead of Maria

directly, but once they saw response times were fast and info accurate, they were fine. Maria did have to give up a bit of say – she wanted to avoid going into a certain metro area, but the FSO found good freight there; after discussion, she agreed and it worked out. This case shows an FSO taking a small but struggling fleet and professionalizing it. If Maria grows beyond 30–40 trucks, she might eventually consider bringing some functions back in-house (she's learning a lot from the FSO on how to run things), but for now, it's the perfect bridge.

Case 3: Outsourcing for Simplicity – *GreenLine Foods Distribution*, 20 trucks, private fleet for a regional grocery wholesaler. GreenLine's core business is buying and selling food products, not running trucks, yet they had a fleet to ensure store deliveries. Over time they found managing drivers, DOT compliance, and maintenance was diverting management attention. They decided to outsource to a dedicated contract carrier (a national logistics company) who essentially took over the fleet operation: they hired most of GreenLine's drivers, bought GreenLine's trucks (or GreenLine reallocated them elsewhere), and now handle all deliveries under a multi-year contract. GreenLine pays a fixed rate per load. The result: operationally, service improved (the logistics company has more routing tech and can scale extra trucks in peak season). GreenLine's transportation costs initially dropped 5%, and became more predictable. They did lose some flexibility – if a store manager calls last-minute for an urgent shipment, GreenLine now must request it from the provider rather than just send one of their trucks. Sometimes the provider has to source an outside truck if all assets are used, which can incur extra costs. But overall, GreenLine is satisfied because their management can focus on procurement and sales rather than trucking. This scenario is akin to outsourcing in a private fleet context, which parallels a small for-hire carrier outsourcing as well: you let a bigger expert firm handle it. The key was GreenLine treated trucking as non-core.

Case 4: Mixed Model – *WestCoast Haulers*, 30 trucks, flatbed carrier in Pacific Northwest. They use a hybrid approach: they have their own authority, a dispatch team of two, and a TMS (DIY elements), but they also subscribe to an FSO-like freight platform for 50% of their loads. That platform's team finds backhauls for them when their trucks deliver in remote areas, for a fee, while their in-house team handles their core dedicated outbound loads. Additionally, they outsource compliance to a third-party service (which handles driver drug testing, driver qualification files, and audits). This mix was not by initial design but evolved – the owner found value in each area: he didn't want to give up his longstanding customer relationships or dedicated routes (so he kept those in-house), but he also didn't want his trucks empty for 300 miles back (so he leverages the platform). And paperwork isn't his strength, so he pays a compliance service annually. Financially, WestCoast Haulers might have slightly higher overhead due to paying both in-house staff and external fees, but the trade-off is flexibility and risk management. This kind of scenario is common – it shows that these models aren't always mutually exclusive. Fleets can and do pick a la carte solutions: e.g., a small fleet might DIY dispatch but outsource IFTA fuel tax filing to a service, or run on a load board themselves but hire a company for after-hours dispatch coverage. Our white paper separated models for clarity, but real life can blend them.

The above cases exemplify that success can be found in different models depending on goals and circumstances: - The DIY case needed scale and commitment. - The FSO case was about rescuing a small fleet and enabling growth/stability. - The Outsource case prioritized strategic focus and risk transfer. - The Mixed case shows pragmatism in using each option where it fits best.

Fleet owners reading this should see a bit of themselves in one or more of these stories and understand that the "best" model is the one aligning with their capabilities and strategy.

Appendix E: "Which Model Fits Me?" Self-Assessment Questionnaire

Instructions: For each statement below, circle the response that best reflects your agreement: **Yes (Y)**, **Unsure/Maybe (M)**, or **No (N)**. Then use the scoring key to tally your results.

1. **Control:** *"I want to maintain full control over which loads my trucks haul and how operations are run day-to-day."*
2. Y / M / N
3. **Workload:** *"I (or my team) have the time and expertise to handle all the planning, dispatching, and paperwork involved in my trucking operations."*
4. Y / M / N
5. **Technology:** *"Investing in and learning new software systems is something I'm comfortable with (or excited about)."*
6. Y / M / N
7. **Visibility:** *"Having real-time data on my trucks, loads, and costs is very important to me."*
8. Y / M / N
9. **Expert Help:** *"I would benefit from outside expert assistance in managing operations (e.g. compliance, optimizing loads, back-office tasks)."*
10. Y / M / N
11. **Customer Interaction:** *"It's important that my customers know and deal with me/my company directly, not a third party."*
12. Y / M / N
13. **Driver Management:** *"I prefer to personally handle driver-related issues (recruiting, scheduling, resolving complaints) rather than delegating those to an outside partner."*

14. Y / M / N
15. **Cost vs. Convenience:** *"I am willing to incur some extra cost or share revenue if it significantly reduces my day-to-day workload."*
16. Y / M / N
17. **Risk & Compliance:** *"Managing compliance (Hours of Service, DOT audits, safety training) is a challenge and source of stress for us."*
18. Y / M / N
19. **Scaling Up:** *"I aim to grow the fleet substantially in the next few years, and I want an operations setup that can scale easily with that growth."*
    - Y / M / N
20. **Consistency:** *"I value a stable, consistent workflow more than trying to maximize every last dollar of each load."*
    - Y / M / N
21. **Identity:** *"Maintaining my own operating authority and company identity is a priority for me."*
    - Y / M / N
22. **Financial Position:** *"I have the financial resources (or access to capital) to invest in systems or people if needed to improve operations."*
    - Y / M / N
23. **Problem-Solving:** *"When something goes wrong (late delivery, truck breakdown, etc.), I prefer to handle it internally rather than relying on an external party."*
    - Y / M / N
24. **Experience Level:** *"Running a trucking operation is relatively new to me, and I wouldn't mind guidance in optimizing it."*
    - Y / M / N

Scoring Key: The questions are designed to gauge alignment with each model. Use this key to score:

- For questions where a "Yes" indicates a DIY preference, assign 2 points to DIY for Y, 1 point for M, 0 for N. (Conversely, a "No" on those might indicate outsourcing preference.)
- For questions indicating preference for outside help/outsourcing, assign 2 points to Outsourcing/FSO for Y, 1 for M, 0 for N.
- Some questions differentiate FSO vs traditional outsourcing: e.g., wanting to keep authority (Q12) leans against traditional outsourcing but is fine with FSO.

To simplify: - **DIY TMS/In-House points:** Give 2 points for Y on Q1, Q2, Q3, Q6, Q7, Q12, Q14; give 0 points for N on those (for M give 1). - **Fleet Super Operator points:** Give 2 points for Y on Q5, Q8, Q9, Q10, Q15; also 2 points on Q12 (FSO allows keeping identity) and Q11 (FSO often brings consistency). M=1, N=0 accordingly. - **Traditional Outsourcing points:** Give 2 points for Y on Q8, Q9, Q11 (because outsourcing reduces workload, handles compliance, provides stable freight). Give 2 points for N on Q1, Q6, Q7, Q12 (if you don't mind losing control/identity). Also Q10 maybe 1 point (outsourcing can scale but FSO scales too). M=1 for each applicable.

Now tally: - DIY score = _ **- FSO score = *- Outsourcing score* =** __

Outcome Interpretation: - If DIY score is highest (and significantly so), an in-house approach with a good TMS is likely the best fit. You value control and are prepared to invest the effort to manage internally. - If FSO score is highest, a Fleet Super Operator model aligns well. You want help and efficiency gains but also want to retain your authority and some control/visibility. - If Outsourcing score is highest, you may benefit from a traditional outsourcing arrangement. You appear comfortable with a third party taking over operations for the trade-off of simplicity and stability. - If two scores are tied or close, consider a hybrid approach or re-examining which specific factors are tipping the scales. For instance, if DIY and FSO are close, maybe you implement a TMS in-house but also hire a part-time dispatcher or use a dispatch service (a partial outsource) – a middle ground. - Low score for a model doesn't necessarily mean it's unworkable, but it indicates potential friction with your preferences. For example, a low DIY score implies you might struggle or be unhappy managing everything yourself.

Note: This self-assessment is a guide. The scoring is qualitative. It should provoke reflection on what you want from your business. External factors like customer requirements or financial constraints could override the personal preferences indicated here. Use it in combination with the detailed analysis in the main document.

End of Appendices.

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[1] 5 Enforcement Metrics Fleets Should Monitor - Safety & Compliance - Trucking Info

https://www.truckinginfo.com/10157156/5-enforcement-metrics-fleets-should-monitor

[2] Breakdown of ATRI 2025 operational costs report | Fleet Maintenance

https://www.fleetmaintenance.com/equipment/article/55301363/american-transportation-research-institute-atri-breakdown-of-atri-2025-operational-costs-report