
Supply Chain Startup Report 2022

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VERSION 2

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Executive Summary

This report is an update from our last supply chain report in 2019. We removed 387 startups from our last list of supply chain companies (didn't represent supply chain or was too old) and we added 598 new startups to our list (startups we missed before and some new).

We updated our report to not only highlight how all supply chain startups build a competitive product by function, feature or use case; but we also showcase how each category has changed/evolved. This report is color coded to reflect changes, see how to read this report at the bottom of the executive summary.

For those seeing this report for the first time, we attempted to map the entire supply chain startup ecosystem (1000+ logistic startups). We then filtered these startups into 10 categories and labeled the top startups per category (see chart below). We then looked through every startup to understand how they innovate by function, feature and use case. Having both a macro and detailed view of the ecosystem allows us to predict disruption within the supply chain ecosystem.

The chart below breaks down the funding, exits and closures per category. This data is seed-series G startups that raised within the last 3-4 years. About half of these startups are based in the USA. The rest are from other countries around the world.

Global Supply Chain Startups									
Categories	Funding	Number	Avg Funding	Exit %	Closed %	Watch I.	Strategic I.	Risk Level	Avg Value
Service	\$15,806,191,650	309	\$63,734,644	13%	7%	33%	13%	\$15.44	\$159,336,609
Marketplace	\$8,291,090,047	195	\$49,946,326	9%	6%	35%	19%	\$21.11	\$124,865,814
Robotics	\$6,397,867,005	90	\$82,023,936	12%	1%	56%	33%	\$15.94	\$205,059,840
TMS	\$2,388,073,456	104	\$27,768,296	16%	1%	47%	19%	\$11.92	\$69,420,740
Fleet Mgmt	\$2,356,218,312	100	\$25,892,509	6%	3%	45%	15%	\$32.48	\$64,731,272
Asset Tracking	\$1,085,953,155	95	\$13,746,242	12%	5%	38%	13%	\$16.83	\$34,365,606
Fulfillment	\$3,752,403,231	163	\$26,058,356	7%	5%	35%	12%	\$28.88	\$65,145,889
Analytics	\$1,682,323,020	56	\$32,986,726	7%	2%	59%	27%	\$27.28	\$82,466,815
Blockchain	\$142,375,083	37	\$5,932,295	5%	30%	54%	8%	\$36.05	\$14,830,738
Drone	\$773,121,983	34	\$27,611,499	6%	12%	54%	11%	\$33.13	\$69,028,748
Total	\$42,675,616,942	1,183	\$40,184,197	10%	6%	41%	17%	\$19.05	\$100,460,492

How To Read This Report:

This report is color coded to better help you visualize the changes per category/section.

- Green text highlights startups that exited.
- Red text highlights startups that closed or pivoted.
- Orange text highlights startups that were recently added to this report.

After each section, I try to write what's important at the bottom to summarize the material. At the beginning of every section I try to write an overall review of the category and what's changed.

Note: There are a handful of internationally based startups that we thought are great companies but we did not write about them because we couldn't translate product features well enough to write about them - especially from Japan & China. These companies are excluded from this report but are in our top lists.

Asset Tracking Category Summary

2019 Assessment: Asset tracking startups are a critical component to automating the supply chain ecosystem. They started as a tool for visibility of products in transit. Now, they are the data source for fleet management, inventory, fulfillment and delivery to automate processes. Asset tracking startups are evolving to incorporate logic and programmable interfaces into their platform. This means they will replace back office work as they automate data collection and decision making. Eventually they will evolve to offer their own supply chain management software as they own the most important data. Asset tracking startups are going after manufacturing and movement data within the automation process.

2022 Assessment: Asset tracking startups did become a feature set (data source) for many other categories. They also continue to implement customizable workflows that can react to data. You also see companies move toward a SaaS model of servicing customers, versus selling hardware.

Startups in this category tend to move in two directions, either a robust platform that caters to multiple industries or those who double down on specific use cases. Those focused on broader ecosystems are winning by aggregating data from multiple devices to provide insights on goods or benchmark logistic providers. Those focused on specific use cases are going after high value shipments (industrial, pharma, defense, etc).

Analytics Category Summary

2019 Assessment: Similarly, you will see supply chain analytic startups taking ownership of data but in a different way. Most analytics startups are doing everything they can to ingest data from every source possible. Their goal is to improve processes, lower risk, optimize pricing and more. They do this by collecting information about suppliers, transport prices, inventory location, and more. They then build market benchmarks and scorecards. Customers can use this data to understand how they compare to the market and their competitors. To gain access to these insights, customers give out their data to these startups. The most valuable data these startups collect is the pricing and contract information. Analytic startups will probably evolve to become delivery or supplier marketplaces, to broker the best deals among carriers and shippers. Analytics are going after order and movement data within the automation process.

2022 Assessment: Many of what we previously mentioned holds true. However, there has been a lot of growth for startups focused on compliance/risk insights. Startups that focused on pricing did well but there is a lot of competition from existing delivery marketplaces. Going forward it will be the supply chain risk, safety and compliance insights that will dominate.

Fulfillment Category Summary

2019 Assessment: Fulfillment and inventory startups follow suit in a similar way. They have a lot of overlap among each other and they also incorporate TMS, analytics and asset tracking tools as well. Inventory is a category that is facing the most disruption as data created is typically outside of their ecosystem and new tools are being used to track and move inventory. Fulfillment startups are responding to this by trying to own the order management process. Inventory startups are moving towards services, typically warehousing. However, both categories are at the mercy of ecommerce players and delivery marketplaces. To innovate these startups are moving in a lot of directions, offering more supply chain software, outsourced delivery and warehousing services, and asset tracking.

2022 Assessment: This category was re-written and I don't think last year's sentiment appropriately shares the best overview. However, there is some truth to 'fulfillment startups are at the mercy of marketplaces and delivery services'. Startups in this category either double down on offering software products or services to compete. On the services side, many are providing full outsourced warehousing/packaging. On the software side, startups either provide a variety of ecommerce management solutions or offer inventory/fleet/order management tools. There is a lot of competition in this category and multiple other categories competing with fulfillment startups.

TMS Category Summary

2019 Assessment: Transportation management startups are doing their best to own the entire process of supply chain management. The more data they collect and decisions their software controls, the more they have the ability to offer the services themselves, such as delivery, warehousing and more. We see that TMS is working towards automated multiple processes internally, like carrier matching, routing, sorting, inventory and more. They are providing the flexibility for you to set your parameters to control the process or they will do it on your behalf. You should see that the process of shipping anything anywhere will be completely automated, products will be categorized, routed, stored and distributed all with no intervention. TMS startups compete with every category within the supply chain ecosystem. Today, they ingest most data but in the future they will try to control order, movement and manufacturing data sources. Many TMS startups seem to be focused on order data, by creating their own delivery marketplaces. Some go as far as creating their own B2B procurement marketplace.

2022 Assessment: This category was also re-written and I don't think last year's sentiment appropriately shares the best overview. TMS startups do provide many software applications that overlap with many categories in this report - many do provide end-to-end logistic management tools. Noticeable things we can expect to see going forward are startups providing customizable templates/RPA to manage processes will stand out. We will also see startups that cater to retailers/brands to manage multiple orders, deliveries, etc will also accelerate.

Fleet Management Category Summary

2019 Assessment: Fleet management category is taking a very unique turn. The rise of ride sharing services and connected vehicles has changed fleet management tremendously. Transportation is evolving to include a variety of vehicles, fleet-sharing, autonomous vehicles and new modes of transport. Fleet management tools are becoming integrators that connect with any transportation system, application and management tool. This category is going after the movement data and ordering data. These startups are making it possible for marketplaces to offer more competitive on-demand products/services.

2022 Assessment: This category was also re-written and I don't think last year's sentiment appropriately shares the best overview (included too many automotive management tools). The major trends in this category are startups focused on driver safety, or last mile delivery management. Both focus areas are raising a lot of capital and you'll see some interesting winners internationally.

Robotics Category Summary

2019 Assessment: Robotics logistics are hardware robots that typically deal with warehouse management and last mile delivery. They are completely automating human labor out of the physical process of moving items. This makes delivery and storage much less expensive and more reliable. They control movement data but last mile delivery startups will go after order data. Last mile delivery is being disrupted by dramatic changes to the automotive industry. These startups will have an intense competitive advantage over any other delivery service. To learn more, we will have to watch the automotive industry.

2022 Assessment: The previous sentiment is being played out in this recent update. We've seen warehouse robotics move from floor and pick/pack stations, to fully autonomous fulfillment centers. We've noticed a significant amount of funding is focused on startups that are also able to build their own marketplaces or enable retailers to provide last mile delivery cheaply, within an hour. Regarding robotics that deliver products directly to consumers, we've seen sidewalk driven robotics continue to excel. Robots on the road have to solve the fully autonomous car problem first.

Delivery Marketplaces Category Summary

2019 Assessment: Delivery marketplaces own the ordering and movement data. They are what facilitate payment for transport services. Marketplaces are competing for transactions. They start by building software features that make it simple to book and manage shipments. This means instant booking, simple invoice management, optimal pricing, carrier matching and real-time tracking. The next step is owning the order management and freight management tools. This way they can control the supply of carriers on their marketplace and guarantee capacity. They do this by providing order management tools for carriers or business management tools for small fleets or drivers. Marketplaces inevitably compete on price and to provide better rates some are completely cutting out broker fees. This means they are generating revenue through financing, fuel cards, insurance or other products they can upsell. Marketplaces are facing a lot of competition from the TMS category.

2022 Assessment: There is not much change from last year's sentiment regarding delivery marketplaces. We noticed it's hard to differentiate at a product level as a marketplace. Therefore, we see a lot of regionally dominant startups, who won by being first to market or better execution. We do think there could be more competition with B2B marketplaces for this category in the future.

Delivery Services Category Summary

2019 Assessment: Delivery services are focused on owning the ordering and movement data. It's important to note that delivery services and marketplaces are colliding. The demand from consumers to have limitless, cheap options with instant delivery are becoming a standard. Delivery services are becoming brands that are building

networks of drivers leveraging fleet management tools, instead of owning fleets themselves. With a large scalable fleet at their disposal they are targeting marketplaces. Delivery services have the competitive advantage of owning the supply chain and the expertise to provide on-demand delivery. You'll notice the food and beverage industry, on-demand marketplaces/services and subscription business are merging with delivery companies.

2022 Assessment: For consumer last mile delivery services, you'll notice our previous sentiment is spot on. Many quick commerce and delivery platforms utilize their logistics expertise/network to build a system that enables consumers to order products for cheap. We continue to see startups mentioned in this report and within the marketplace report that really excel by owning the ordering platform. When it comes to freight delivery services, regionally dominant startups emerge but it's hard to differentiate at a service level.

Drone Delivery Category Summary

2019 Assessment: Drone logistics are a subset of robotic logistics. These startups are focused on disrupting last mile delivery. The standard among delivery services to have limitless, cheap options with instant delivery are what is changing modes of transportation. Aerial transport will become the autonomous vehicle that will become the most prominent first because they have fewer obstacles they have to manage. These startups will control movement data and inevitably order data just like delivery services.

2022 Assessment: We don't necessarily have a full view of the drone industry but from the companies we've tracked we noticed drone delivery is difficult. We have yet to see large commercial uptake of drone delivery services for last mile or cargo delivery, even with backing from the likes of Walmart and UPS. There does seem to be a massive rise in healthcare drone delivery, especially in emerging markets - the biggest being Africa. Cargo drones seem to be carving a niche with military use cases. This category faces competition from delivery robots - who seem to be doing much better at consumer goods delivery - mostly for campuses.

Blockchain Category Summary

2019 Assessment: Blockchain logistics startups are focused on manufacturing and movement data. Most of them are focused on compliance. They collect data using asset trackers or surveying methods used by supply chain analytic startups. What makes them unique is how they store the data they collected, which is on a blockchain. In order for these startups to be competitive they have to move beyond just unique methods of storing data.

2022 Assessment: We've seen almost 1/3 of blockchain startups close since we first started tracking companies. We've failed to see major applications for blockchain companies within the supply chain outside of traceability. Where we see a product market fit within traceability - but even these companies rely on asset tracking devices or external platforms to collect/store data on the blockchain. A rising application seems to be compliance but blockchain is simply a feature for other categories in this report.

Asset Tracking

Category Definition: The asset tracking category highlights the top startups that provide software/hardware that monitor physical objects for the supply chain industry. This category overlaps with a handful of other categories within this report. The following content will breakdown the function, features and use cases of every startup recognized to showcase how they differentiate.

Important Updates:

Big movers in this category were startups that focused on crowdsourcing data from the supply chain ecosystem to provide manufacturers with advanced insights on the performance of their goods in transit and benchmark peer logistic providers. These companies scaled quickly because they didn't manage their own devices and won markets through network effects. Examples include Fourkites.

We saw a handful of innovative IoT asset tracking devices that can generate impressive quantities of data about goods in transit, rise up within the industry. These companies have yet to breakout in massive funding rounds or exits. There seems to be barriers to scaling, which might be complexity of managing devices or costs. We still believe these devices will become cheaper over time and become more embedded in supply chain infrastructure, but this will probably take more time than expected. We have seen more innovative labeling/RFID solutions arise for more retail product tracking, but this is not new to the industry.

What's continuing to be big features for all startups in this category is utilizing no-code/RPA tools that enable users to automate workflows based on data collected, or using AI to forecast future risks/costs and make appropriate adjustments to the supply chain. We predicted this would be an important step for startups in this category to move away from being hardware companies into being software companies.

The future of asset tracking companies will be cheaper/advanced devices, better integrations with the ecosystem, networks of logistics stakeholders sharing data and better logistics insights that will overlap with the supply chain TMS and analytics categories.

Function

This section categories asset tracking startups into different subsections based on how they collect data, the type of data collected and what they're trying to analyze. Here are some examples:

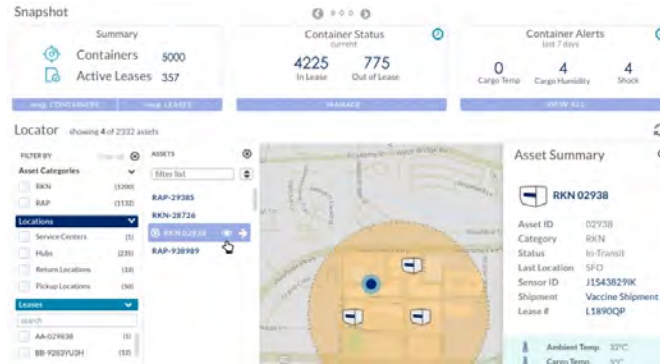
Data Analysis

This category highlights the type of insights asset tracking startups are trying to generate. Many startups overlap in this category. Here are some examples.

Asset Lifecycle

This section highlights startups that generate sensors fixed to individual assets/products to track their life cycle across the supply chain. Examples of this include:

- Nexxiot, Roambee, Controlant, Traxens, Overhaul, Tego and Cloudleaf's platform/hardware help enterprises generally monitor assets and inventories through their lifecycle.



- Mojix's platform can count, act, engage, or certify products as they move through their lifecycle.
- Scantrust helps enterprises create a digital identity for their products using QR codes and RFID, NFC.
- Kargo provides smart loading dock sensors to track/inspect all cargo arriving/leaving facilities. Their solution can scan labels, product temperature, damage and more.
- TagNTrac provides labels that help track SKUs across the supply chain for condition monitoring, counterfeit protection and compliance.
- Reelables provides active beaconing Bluetooth, temperature logging, track and trace devices nearly as thin as RFID labels that helps keep track of inventory/assets.
- Locix provides both cameras and smart sensors to keep track of assets and spaces.
- O4S prints labels that can be placed on SKUs to track products through lifecycle and manage their information.
- Omni-ID provides material flow management solutions and parts replenishment.
- ODYN tracks inventory count, dwell and cycle times.
- PINC locates, timestamps, and keeps an electronic record of all stages of the asset manufacturing lifecycle including assembly, quality control, repairs, recalls, and parts.

What's Important

For most asset tracking solutions, it is a race to get as close to the product manufacturing process as possible, and track inventory movement from there. The three most important data flows are from when a product is created, where an order is created and its delivery to the end customer. Asset trackers can manage creation and delivery, while their logic is based on order management.

Performance

This section highlights startups that utilize their sensors to track the performance of their logistics network/partners. Here are some examples.

- Roambee, Overhaul, Tive, Akua, Cloudleaf, Contguard, Fourkites, Shippeo, Arviem, **Traxens**, **Controlant**, **Parsyl**, **ODYN**, **Nexxiot** and **Omni-ID** provide dashboards to measure carrier/driver performance to make improvements or select better carriers. These tools analyze inventory, idle times and turnaround times; automate goods bookings, shortage predictions and alerts; reduced inventory, intralogistic routes and total costs.

What's Important

One of the most important features of supply chain analytics is building industry data benchmarks for onboarding new customers. Being able to know the market rates, the best carriers and the right suppliers helps supply chain software companies to onboard new customers.

Security/Safety

This section highlights startups that focus on the security and safety of assets/products. Here are some examples.

- Roambee and Akua track route deviations, unauthorized stops, restricted time movement, tampering, missing assets and asset aging.
- Arviem provides supply chain risk mitigation, compliance management and carbon footprint monitoring.
- DUST Identity utilizes microscopic diamonds to securely link physical items with their digital records.
- TruTag Technologies provides secure edible barcodes to ensure the authenticity of important products.
- TagNTrac provides labels that help track SKUs across the supply chain for condition monitoring, counterfeit protection and compliance.
- Scantrust provides labeling that helps users protect products from counterfeits. Labels can instantly be authenticated with a smartphone.

What's Important

The baseline approach of all asset trackers is making sure their assets are accounted for and not tampered with. This is where asset trackers started and most startups in this category provide security insights.

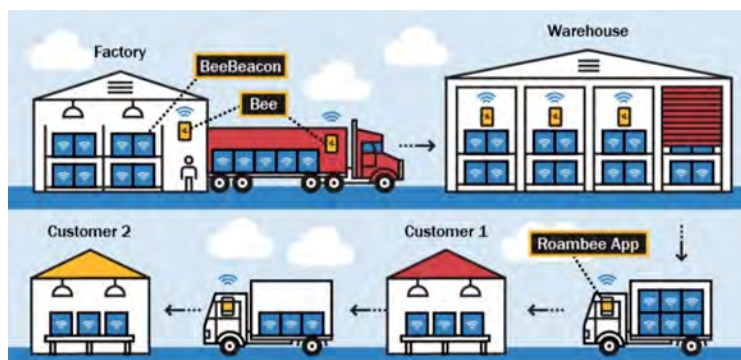
Data Creation

This category highlights how asset tracking startups generate data. Here are some examples.

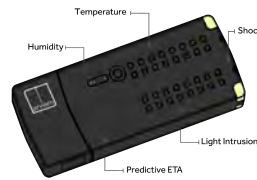
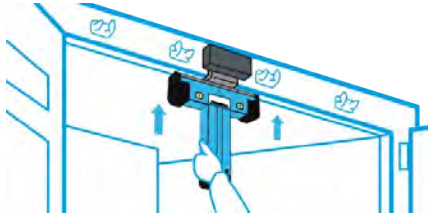
Internet of Things

This section highlights how startups leverage smart devices to generate data. These devices can take a variety of forms and be molded into any type of application. How they differ is the data they collect and how they act upon it. Here are some examples.

- Sensor Suite:
 - TagBox, Roambee, Cloudleaf, Contguard, Tive, Akua, Parsyl, Scantrust, Controlant, Traxens, Locix, Nexxiot and PINC provide a broad range of smart sensors for various applications.



- Specific Use Case:
 - Nexxiot and Roambee provide a variety of use case specific sensors including weight detection, tire pressure monitors and an electronic lock.
 - Arviem provides a monitoring device that connects directly to containers to monitor cargo in transit. They also provide small smart devices that can be placed inside containers.



- Kargo provides smart sensors that are located at loading docks. These sensors include image, thermal and LIDAR sensors.



- Sensor Relay:
 - Roambee, Nexxiot, TagBox, Akua and Cloudleaf provide smaller, inexpensive devices that communicate with larger IoT devices with more capabilities.
 - Tego provides devices that can be placed in critical locations to pick up data from RFID chips.
- Asset Specific:
 - ODYN and PalleTech provide pallet sensors.
 - Roambee provides an OBD device to track the fleet.

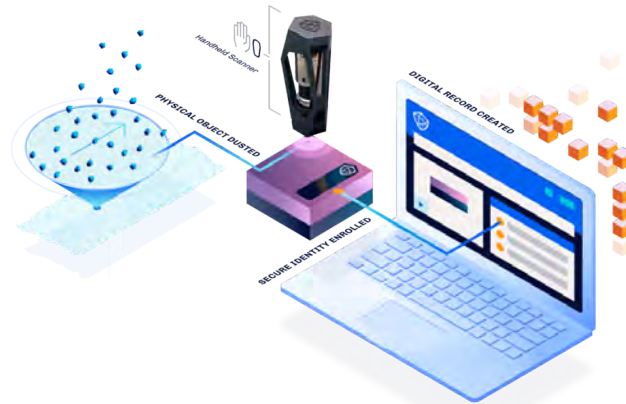
What's Important

Startups in this category provide the most insights on assets as they travel through supply chains. IoT devices however are still more expensive than traditional labeling/RFID, and they cater more towards cold chain or more valuable products. Nonetheless, as the cost per device decreases, these companies will enable smart infrastructure across all supply chains.

Material Identity

This section highlights startups that utilize unique materials to label products/assets. These solutions are mostly focused on security and compliance. Here are a few examples:

- Dust Identity for example creates a security label made from nanodiamonds that is unclonable. They also provide a scanner that has the capability of analyzing diamonds.



- Trutags creates microtags made of silica to label items like pills to ensure authenticity. They provide a scanner and a mobile application that can analyze these microtags.
- Safetrace creates non-living DNA barcodes to put within liquids or on food products that carry source information.

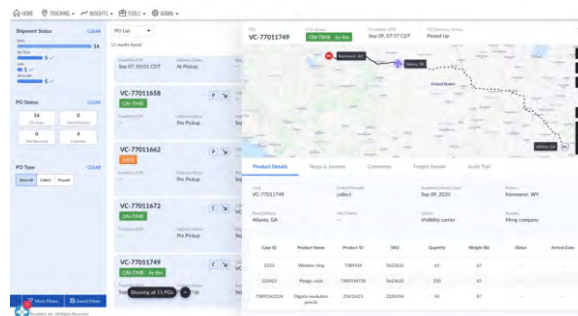
What's Important

These are very unique solutions that typically blend into manufacturing processes. They are focused primarily on food, pharma and high end products.

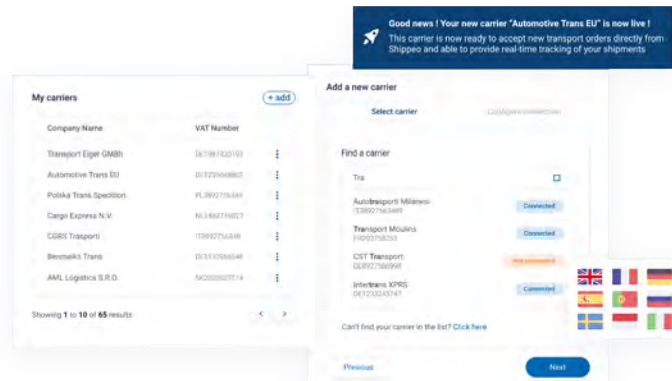
Crowdsourced

This section highlights startups that don't create their own devices but aggregate information from other asset trackers, software solutions, logistic providers or external databases. Here are some examples.

- FourKites collects real time data from GPS, ELD, telematics networks, mobile devices, AIS and more.



- Shippeo connects with all GPS/ELD and TMS providers to build a network of carriers.



- Mojix provides their own devices and attempts to connect to any kind of sensors like RFID, GPS, smart phones, wifi and more.
- Overhaul's platform integrates data from existing hardware/software and from carrier partners.
- ODYN looks at publicly available data, such as vessel movement, airplane movement, or even weather. They also leverage data from sources like your TMS/WMS/ERP systems.

What's Important

These companies have really accelerated for the asset tracking category. These companies are able to scale quickly because they are aggregating data directly for logistics providers to generate real time insights on various supply chains. This information may not provide detailed insights on the SKU level, but they are creating valuable insights on the delivery services ecosystem. This data makes it easier for businesses to identify the best logistics provider. These companies will compete with delivery marketplaces.

Phones

This section highlights startups that utilize employee/company mobile phones to collect data. Phones will become the main beacon to track the flow of assets. They are slowly replacing fleet tracking tools but they can't replace asset tracking solutions. They are very complementary. This device will be the sensor relay for collecting data from smaller IoT sensors not equipped with networking technology.

- Roambee, TagBox and Tego allow you to use your phone as a data sensing gateway.

What's Important

This will become the primary beacon of tracking most assets. Smartphone's capabilities are advancing and they are becoming the interface for employee activity.

Camera

This section highlights startups that utilize Image recognition to track assets. Here are some examples.

- Roambee provides a camera sensor that can track trailer loads.
- Locix provides wireless cameras that capture imagery and video.

What's Important

Image recognition is becoming more important for automotive vehicles. It enables ADAS, driver coaching and more. It is also a tool that digitizes shipment documentation. You should see more overlap visual asset trackers of fleet management and automotive tools. In addition, image recognition used in space and drone applications are becoming more common to track shipments and assets.

RFID

This section highlights startups that utilize RFID as a method of tracking assets of all forms. Here are some examples.

- Mojix created their own antenna that specializes in tracking RFID products.
- Tego provides rugged, high frequency tags/chips.
- TagNTrac provides bluetooth labels as small as a postage stamp and just over 1mm thick with up to a 3-year shelf life.



- Reelables provides active beaconing Bluetooth, temperature logging, track and trace devices nearly as thin as RFID labels.



- Scantrust utilizes QR codes and RFID, NFC as identifiers for products.



- Omni-ID created passive/active RFIDs and one that can be printable on metal.
- PINC provides passive RFID and an RFID gate system for tracking inventory.

What's Important

This category will be disrupted by the rise of IoT solutions and image recognition. This category won't disappear for a while but, they must fight to keep costs low and simple deployment solutions. RFID solutions are evolving to build logic into their products to make their solutions more versatile. And we're starting to see more smarter RFID solutions as a result.

Labeling

These are startups that are focused on labeling. This is important mainly for inventory tracking.

- Scantrust applies IDs as labels or printed directly on products using RFID, NFC or lasers.
- O4S prints labels that can be placed on SKUs to track products through lifecycle and manage their information.
- Omni-ID created an electrophoretic display (e-paper) to be able to relabel items quickly.

Data Collected

This section focuses on what data is collected. The standard measurements among most asset tracking devices are location and temperature. More advanced sensors include humidity, altitude, shock, tilt, light and tamper. Devices from Arviem, Roambee, Contguard, Cloudleaf, Akua, TagBox and [Reelables](#), for the most part, track all of these measurements. Outside of these core measurements, here are a few more examples of measurements.

Metadata

This section highlights how asset trackers allow users to upload product data to each SKU. Many asset tracking devices add metadata to an asset. This makes it easy to access asset lifecycles and important documentation. Examples:

- Roambee provides an electronic proof of delivery, which is a digital form that replaces manual delivery confirmation paper trails.
- Tego's platform can collect/report a variety of information about assets including pictures, documents (PDF, CAD, Excel) and more.
- FourKites provides a digital hub that enables users to manage all documents, workflows and information necessary for all shipments.
- [Scantrust allows users to add a variety of product data to labels.](#)
- [O4S labels can be scanned by their app. Users can add data to label IDs including product movement, manufacturing details and more.](#)
- [Nexxiot keeps documents attached to assets like waybills, customs documentation and maintenance records.](#)
- [Safetrace includes producer, lot number, location and fill data.](#)

What's Important

Most startups have an external database that records tracking information. Many startups enable users to upload additional product information to this database or enable end customers to access product details by scanning labels.

Imagery

This section highlights startups that collect images/video. This section ties in with metadata. Images can be tied to asset tracking devices or created from the device itself. Examples of this include:

- Roambee tracks root-cause analysis and/or proof of delivery by uploading images.
- TagBox and Tego's platform enables users to upload imagery to asset data.
- [Kargo utilizes image, thermal and LIDAR sensors to collect data about arriving packages at loading docks.](#)
- [Locix utilizes imagery to capture data and the status of assets and packages within spaces.](#)

What's Important

The most important imagery collected is any manual paperwork. This will digitize a process they've been unable to do with software. This allows one party to instantly digitize a process without relying on another party.

External

This section highlights startups that collect external data not generated by their asset trackers. Here are some examples.

- Roambee utilizes internal enterprise system data, freight-forwarder data (e.g. ePOD, flight or vessel #), milestone data like Cargo IQ and Ocean IQ, traffic, weather, and global risks.
- FourKites analyzes over 150 factors like weather and traffic.
- Roambee and [Traxens have the ability to collect data from third party smart sensors.](#)

- ODYN tracks vessel movement, airplane movement, or even weather to continuously monitor how your supply chain will get impacted by external actors.

What's Important

Many asset trackers are factoring in external data to assist in measuring the performance or health of the assets they are tracking.

Feature

This section highlights the unique hardware, software and service features of startups within this category. Below is the breakdown.

Device Features

This section highlights the unique hardware features of startups in this category. The standard features of most asset trackers are simplicity, long battery life and durability. Other features include range and accuracy. Here are a few features that stood out among device features.

Communication

This section highlights device communication features. Most IoT devices are able to communicate data using GPRS, LoRa, Narrowband-IoT, LTE-m, SigFox, Wi-Fi and more. Almost all IoT devices have the ability to send data at different time intervals including real time. Here are some examples.

- Roambee provides connectivity options that include GPRS, LoRa, Narrowband-IoT, LTE, SigFox, Wi-Fi and more.

Power

This section highlights battery life of asset tracking startups. This category is very important for most IoT devices. How asset tracking companies can manage convenience, SLAs and measurements rely on battery performance. Each asset tracker showcases their battery length, but this can vary depending on how often they need to communicate. Here are some examples.

- TagNTrac provides bluetooth labels as small as a postage stamp and just over 1mm thick with up to a 3-year shelf life.
- Shoof Technology boasts a 5-10+ year battery life.

Versatile

This section highlights the versatility of asset tracking startups. Here are some examples.

- DUST can fit on an area of 0.0025 megameter and some of the world's smallest electronic components.
- Roambee is able to collect data regardless if the device is connected or not.
- TruTag Technologies barcodes are virtually invisible, can be implanted on very small products and are edible.
- Reelables provides active beaconing Bluetooth, temperature logging, track and trace devices nearly as thin as RFID labels.
- Omni-ID has print, peel and stick flexibility for tagging assets.
- Safetrace has no impact on factory input and is edible.

Durability

This section highlights the durability of asset tracking startups. Here are some examples.

- Safetrace's DNA lasts for years and can be recovered from every product.
- Cloudleaf's products can withstand a temperature range from 0° to 60°C.

- Omni-ID's products have the ability to survive 235 degrees C temperatures.

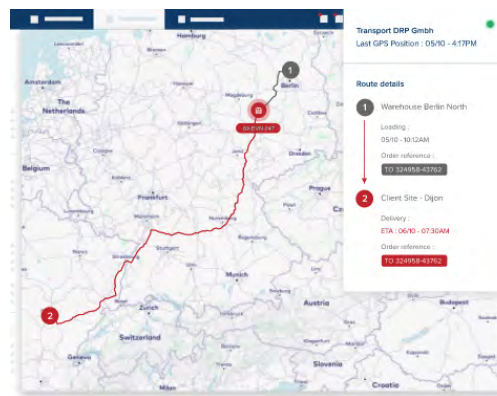
Software Features

This section highlights the unique software features of startups in this category. Device management is a standard feature among all tracking solutions. This means they provide web portals that track all assets that are normally accessible by shippers, carriers and end consumers. Here are some more examples.

Automation

This section highlights automation features of asset tracking startups. An emerging feature of startups in this category is their ability to program triggers/actions based on information collected. Here are some examples.

- Nexxiot allows users to program complex events and rules engines for trackers.
- Omni-ID let's workers send commands from sensors on the factory floor initiating action.
- Controlant, Mojix and ODYN help users create IFTT logic to change rules, triggers or alerts into logic or actions within other applications.
- Roambee and TagBox's platform utilizes AI to analyze ingested device data and enables users to configure the platform to send actionable signals to other business applications or individuals.
- Tego provides a no code, drag and drop interface that allows users to configure the asset trackers to take action, change actions or modify behavior of other systems.
- Fourkites platform utilizes AI to generate predictive ETAs, generate recommendations and forecast arrival times.
- Shippeo utilizes machine learning to anticipate problems and help users mitigate the impact. Users can analyze shipment data to pull insights from shipment operations.



What's Important

This is one of the most important features of asset tracking companies. They need to have the ability to take quick action and predict future bottlenecks to maintain optimal performance. Data collected from asset trackers, paired with automation enables enterprises to provide the best logistic services possible.

Integration

This section highlights startups that integrate directly with other enterprise systems. This is a key component for automation. Here are some examples.

- Shippeo connects to your TMS, ERP, or WMS to directly surface real-time and predictive shipper information. They also collect real-time information carrier TMS or Telematics systems to track assets.
- Controlant and Roambee can link its web port to users ERP, TMS, WMS, or finance software for integrated visibility, analytics, inventory, or accounting.

- Kargo's platform integrates with existing ERP or WMS systems to provide real time data on operations at loading docks.
- Scantrust's platform integrates with ERPs such as SAP Microsoft; manufacturing execution systems (MES); and CRMs and loyalty platforms such as Salesforce
- ODYN actually lets you upload any spreadsheets to their platform and they'll automatically link them to your shipments.

What's Important

It's important to bridge the gap in logic with asset trackers by connecting tracker data to existing software systems that have logic to manage processes.

Communication

This section highlights how startups in this section communicate asset data between users. The basic communication function most asset tracking devices provide are alerts through email, SMS or web portal.

Here are some examples:

- Shippeo, FourKites and Roambee provide a shareable order link that shares the predictive and real-time status with any stakeholder. These links also allow drivers to add information to the asset.
- Mojix enables consumers to view product tracking data to verify product source.
- TagBox utilizes SMS, email, voice call or Whatsapp to notify users of important insights.
- O4S and Scantrust allow users to scan labels and be directed to a custom URL that shares rules for products, campaigns, and more.

Security/Safety

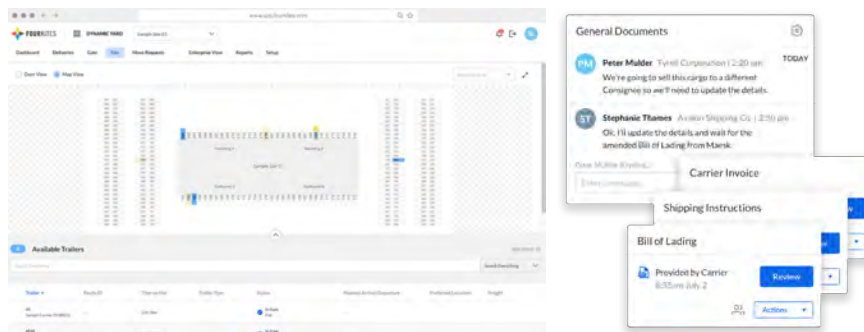
This section highlights unique security and safety features. Most asset trackers have some form of certification for safety and almost all are tamper resistant. Here are some examples.

- Dust Identity provides a physically unclonable identification.
- Roambee and Akua have compliance certification to meet safety standards.
- Nexxiot's devices meet the safety standards to operate in explosive atmospheres.
- Scantrust provides counterfeit detection algorithms that use QR code scan location, scan count, and distance-between-scans to identify fraud.
- Safetrace is FDA approved to be in food.

Additional Software

This section highlights additional software provided by asset tracking startups. Here are some examples:

- Trutag is offering machine vision solutions to other industries.
- FourKites provides yard management software and freight management software. They provide digital hubs that enable users to manage all documents, workflows and shipment bookings for ocean freight.



- Overhaul provides fleet management solutions that allow users to monitor poor driver behavior, theft or other events.



- PINC is providing yard management software.

Other Unique Features

This section highlights unique software features of startups in this category. Here are some examples:

- Mojix stores tracking data on smart contracts or blockchain.
- TagBox provides pre-made templates to manage transportation operations and build insights.

Service Features

This section highlights the unique service features of startups in this category. Here are some examples:

Financial Services

This section highlights financial services provided by startups in this section. Here are some examples:

- Arviem provides access to innovative supply chain finance services to receive early payment already at container loading, instead of waiting for invoicing and payment terms.
- Contguard partnered with insurance companies to provide benefits to customers that utilize their products.
- Parsyl provides cargo insurance for users that utilize their sensors.

Education

This section highlights startups that provide educational material for users. Here are some examples:

- Roambee provides an online university for training.
- Cloudleaf creates industry kits that map out industry actions and what's important to track.

Marketing

This section highlights startups that provide unique marketing services. Here are some examples.

- O4S created a loyalty program that allows consumers/retailers to collect reward points each time a product label is scanned.

Support Services

This section highlights startups that provide support services to their customers. Here are some examples:

- Contguard provides a control center that analyzes data of their customers and can react/escalate issues on behalf of customers.
- Shippeo provides project management, technical integration, carrier onboarding and Q&A teams to help customers with onboarding.

Use Case

This section highlights who are the target customers of startups in this category. Majority of startups are building products that cater to the two industries below. There are a handful of specific use cases that exist but are not worth mentioning.

Manufacturers

Most startups in this section are focused on working directly with manufacturers from various industries. You see more RFID/labeling startups work directly with high volume, low cost consumer products. While you see IoT solutions work closer with more expensive, cold chain solutions. Startups that utilize specialized labeling material tend to focus on pharmaceutical products. Each startup may focus on one industry over the other.

Here are some examples:

- Dust, Roambee, Contguard, Shippeo, Tego, **Parsyl**, Mojix, Arviem, Cloudleaf, **Omni-ID** and **PINC** work generally in various industrial, manufacturing, retail, F&B and construction companies.
- Roambee, Arviem, Cloudleaf, Contguard, **Parsyl** and **Infinitrak** provide products that cater to the pharmaceutical industry.

Supply Chain Industry

Many startups in this category are focused on providing asset tracking solutions directly to logistic providers and ecosystem stakeholders (warehouses, yards, boats, planes, etc). Their general goal is to enable them to better track their performance and provide transparency to their customers. Most of these companies leverage IoT solutions. Examples of startups that cater to logistic providers include:

- Fourkites, **Nexxiot**, Roambee, Contguard, Cloudleaf, **Omni-ID**, **PINC**, Arviem

Fleet Management

Category Definition: The fleet management category highlights the top startups that provide software/hardware that help companies manage their transportation vehicles. These startups typically focus on optimizing routes/tasks or monitoring drivers/vehicles health/safety for delivery companies. There are a handful of companies that track vehicle health or provide mobility solutions for transportation providers, but those companies are located within the Automotive Industry Report. The following content will breakdown the function, features and use cases of every startup recognized to showcase how they differentiate.

Important Updates:

We're seeing companies excel in a variety of areas within this category. A handful of startups continue to raise significant capital for focusing on monitoring driver behavior. These companies typically utilize cameras to track drivers/the road, provide a coaching app that utilizes driving behaviors as learning lessons, and creates a driver score to benchmark performance. These solutions seem to be driven by regulations regarding driver safety, insurance wanting a better view of incidents and companies looking to reduce driver risks. These companies seem to be expanding their feature set including automated coaching services, selling driving data to autonomous driver training models, fleet health/lifecycle management and more.

We're also seeing a handful of companies raise a significant amount of capital managing fleet delivery performance. These companies provide more holistic tools that help manage/optimize employees, routes, costs, vehicles and more. These startups leverage a variety of data sources, including integrating with internal systems to help users make decisions about their fleet. We're seeing more of these companies leverage AI and automation to help companies automate scheduling, dispatch, tasks, routes, etc. Drivers typically utilize a mobile application for managing tasks on the road, the mobile device being the primary means for collecting data on the road. These companies are adding features like asset tracking services, field management tools, and more. These startups also offer similar driver behavior tracking solutions mentioned above.

I expect as these two main focus areas grow, you'll see how these areas blend together. However, a big change I made to this category was, I moved startups that offer mobility services or human transportation fleet management tools to the automotive industry report. These companies are a better fit for that industry. I will note that those types of companies saw a lot more acquisitions (not large) than the fleet management category did this past year.

Function

This section highlights how data is created and/or collected when tracking fleets and what is measured during a fleet's operation.

Data Tracked

This section highlights what type of data fleet management is tracking and why. Some data points are self explanatory, like fuel sensors, while mobile applications may not be so clear. Examples of how this breakdown is as follows:

Vehicle Data

This section highlights how startups track vehicle health and maintenance. This includes engine data, fuel levels, brakes and battery. Majority of startups in this category generate and collect this type of data. Here are examples:

- Platform Science, Switchboard, Nemodata, LocoNav, Idelic, Avrios, Chord X, FleetUp, GreenRoad Technologies, G7, KeepTruckin and Katsana track the majority of vehicle health stats.
- Vnomics monitors fuel performance of vehicles.
- Chord X monitors vessel emissions and fuel consumption.
- Viricit monitors tire pressure and brake lining.

Driver Data

This section highlights startups that track driver performance to assure they are operating their vehicles safely and not overworking themselves. Many startups are creating scores to benchmark driver safety/performance. Here are a few examples:

Behavior:

- Viricit, Platform Science, Switchboard, LocoNav, NetraDyne, KeepTruckin, Vimcar, FleetUp, GreenRoad Technologies, G7, Automile, Nauto, Katsana and Vnomics help monitor driver behavior. This can cause aggressive driving habits like speeding, tipping, harsh braking, sharp turns, improper shifting and more.

Efficiency:

- Viricit, Platform Science, Switchboard, LocoNav, Vimcar, FleetUp, Automile, GreenRoad Technologies, G7, Vnomics and KeepTruckin track fuel consumption, idling, vehicle maintenance and more.

Safety:

- Platform Science, Switchboard, LocoNav, NetraDyne, Idelic, FleetUp, GreenRoad Technologies, G7, Nauto, Katsana and KeepTruckin track distracted driving, fatigue and hours of service.

Risk:

- Platform Science, Switchboard, LocoNav, NetraDyne, KeepTruckin, Nauto, KATSANA, GreenRoad Technologies and Idelic predict or track the driver risks (accidents, violations, citations or incidents).

Driver Input:

- Wise Systems allows drivers to express concerns/preferences.
- Platform Science and Switchboard allow drivers to input inspection data pre/post trips.

Performance

This section highlights startups that measure/benchmark route performance. Almost all startups are trying to optimize routes. Outside of that, here are a few metrics fleet managers are trying to optimize. Here are some examples:

Driver Shifts: KATSANA, FleetUp, Onfleet, KeepTruckin, NetraDyne, LocoNav, Switchboard, Platform Science

Fleet Distribution: Wise Systems, Vimcar, KATSANA, Automile, FleetUp, Avrios, Nautilus Labs, Onfleet, KeepTruckin, Greywing, NetraDyne, LocoNav, Optimal Dynamics, Switchboard

Demand Prediction: Optiyol, Wise Systems, KATSANA, FleetUp, Vimcar, Onfleet, KeepTruckin, Greywing, Optimal Dynamics

On-Time: G7, Wise Systems, Nautilus Labs, KATSANA, Automile, FleetUp, Vimcar, Onfleet, KeepTruckin, Greywing, LocoNav, Optimal Dynamics

Costs: Avrios, Optiyol, GreenRoad Technologies, KATSANA, Automile, FleetUp, Vimcar, Nautilus Labs, KeepTruckin, Greywing, LocoNav, Optimal Dynamics, Switchboard

Incident

This section highlights startups that are trying to be proactive in managing or identifying incidents during travel. Typically, the actions required are reporting for insurance companies or calling for emergency help. Here are some examples:

- Nauto immediately helps you access high resolution video in the event of an incident and other critical data for your insurer.
- Katsana provides three simultaneous videos for vehicle safety.
- G7 watches for theft.
- Avrios platform helps manage incidents, report damage, receive quotes and process insurance.
- KeepTruckin provides an application that allows drivers to perform inspections and upload damages.
- Greywing's platform is able to perform pandemic risk assessments before crew departs from the port to ensure vessel safety.
- SMH Fleet Solution provides a built-in accident reporting tool and a photography/video inspection tool for drivers to log delivery and collection.

What's Important

This section may not do justice in separating how each startup caters to different use cases. Startups tend to either focus on driver behaviors, vehicle health/cost, transportation performance or a combination of everything. You will notice the larger startups become, the more metrics they begin to track. This is primarily because these metrics blend together - if you can measure one you can predict the rest.

Data Collection

This section highlights how these startups collect data. There are several methods in which data is created. The primary purpose is to track fleet location but there are many other value added services for fleet owners. Actions or requests for fleets are typically from outside the fleet management system or are manually scheduled. Below are ways fleet managers collect data from their fleet.

Internet of Things

This section highlights the different types of IoT devices startups utilize to collect data. Here are some examples:

OBD/ELD:

- Automile offers an OBD device.
- Platform Science provides an advanced ELD device.

Asset Tracking:

- Locanix provides a tracking device for monitoring vehicle activity.
- Automile tracking device has an accelerometer, GPS and temperature sensor meant for tracking assets, not built for fleets.
- LocoNav provides a GPS tracking device that includes an SOS emergency button.

Telematics:

- Idelic, Platform Science and Vnomics integrates with vehicle telematics systems.

Fuel Monitor Sensor:

- Katsana, Locanix and Nautilus Labs provide fuel tracking monitors.

Temperature Sensor:

- Katsana and Locanix provide temperature sensors.
- Switchboard provides sensors that provide temperature and humidity monitoring.

All-In-One Device:

- G7's device connects to the CAN, has GPS, video monitoring, a temperature sensor, ADAS support, an alarm and a gyroscope.

MISC:

- Nautilus Labs pulls data from marine OEMs like CAMS, ECDIS, Engine and they have onboard sensors for fuel flow, draft sensor and shaft torque.
- Katsana provides a large list of sensors available to drivers including remote engine shutdown, liquid level monitoring sensors, shuttle bus sensors and other industrial equipment sensors.
- Chord X utilizes their own sensors to collect data from vessels. They also tap signals from vessel systems.

What's Important

What's important for IOT devices is to collect and send information directly to/from the car that a mobile phone cannot. This could change as newer cars implement improved telematics.

External

This section highlights the different external sources startups utilize to collect data. Here are some examples:

Environmental:

- Nautilus Labs tracks weather.

Geolocation:

- Nautilus Labs pulls data from maps.
- Greywing analyzes data from 100,000 ports, Satellite AIS, immigration restrictions, visas, port controls, route deviations, flight availability and port agents.

External Vendors:

- Avrios integrates data from vehicle manufacturers, fuel card providers and leasing companies.
- Greywing's platform is able to integrate with crewing HR, travel providers, port agents etc.

Government:

- Nautilus Labs tracks AIS which is from the US Coast Guard.
- Greywing analyzes data from 100,000 ports, Satellite AIS, immigration restrictions, visas, port controls, route deviations, flight availability and port agents.

Commercial:

- Nautilus Labs tracks market data.
- Greywing analyzes data from 100,000 ports, Satellite AIS, immigration restrictions, visas, port controls, route deviations, flight availability and port agents.

What's Important

This section is important because this data does two things. This data helps optimize a fleet's performance as it's directly correlated to external factors. Second, the ability to connect with multiple ecosystems opens up the shared transportation resources. You'll find most smart city solutions are doing something similar by using this external information to improve the flow of all assets in their ecosystem.

Internal

This section highlights the different internal sources startups utilize to collect data. Here are some examples:

- Idelic pulls data from dispatch, TMS, HR, video systems and more.
- Nautilus Labs tracks VMS and CPA data; they can also plug into a vessel's existing IT system.
- Optiyol pulls internal data like demand projections, product allocation, candidate location, costs of transportation and inventory holding costs.
- Avrios collects data from internal systems, vehicles, invoices, fines and more.
- Optimal Dynamics provides an open API that makes it easy to integrate with TMS tools and other systems.

- Nemodata uses existing telematics data to create new data points that give a full understanding of vehicle health.
- Switchboard allows drivers to add trip inspection details and pick their own cycle times.

What's Important

This should be standard among fleet management tools. Take existing fleet and route data and optimize it.

Mobile

This section highlights startups that utilize mobile devices to collect data. Here are some examples:

Mobile App:

Majority of fleet management solutions offer a mobile app that is the source of tracking data, communication, sending photo updates and more. This app can be for third party, consumer, field service or driver. A handful of these applications connect to other fleet tracking devices.

- Switchboard, Wise Systems, G7, KeepTruckin, Automile, Katsana, Onfleet and GreenRoad Technologies provide an app.
- KeepTruckin's app connects to their IoT device connected to the CAN.
- LocoNav provides a mobile application that allows drivers to view fleet information, vehicle states, lock their vehicle and more.

Tablet:

Some solutions offer an external tablet for drivers/field services.

- Zonar, Platform Science and FleetUp provide Android tablets to drivers to manage fleet solutions.

What's Important

This is the most important solution for the majority of fleet management solutions to track drivers, provide instructions and perform any other actions to complete tasks. As telematics and fleets evolve, external sensors will be less important for managing fleets.

Images/Video

This section highlights startups that utilize imagery/video to collect data. Here are some examples:

External Camera:

- Switchboard, KeepTruckin, FleetUp, Katsana and GreenRoad Technologies provide a video camera to watch the driver, vehicle and/or the road. These can be a single or dual camera.
- LocoNav, NetraDyne and Nauto provide dual faced cameras to track driver behavior and surrounding environment. Their solution only records high risk events and allows managers to pull up driver videos on demand.
- G7's IoT device provides a camera with ADAS features
- Idelic is able to pull video from onboard video systems.

What's Important

Video/Images are becoming a new important feature for managing fleets. Advancements we see in the automotive industry regarding ADAS solutions will spill over to fleet management.

RFID/NFC

This section highlights startups that utilize RFID/NFC. These startups are utilizing this technology to guide passengers and verify drivers. Here are some examples:

- Zonar provides RFID tracking tags for students to help guide them onto the right bus.
- Zonar and Katsana also use RFID tags to verify drivers.

Feature

This section highlights the unique hardware, software and service features of startups within this category. Below is the breakdown.

Device Features

This section highlights unique hardware features of startups in this category. Majority of devices or methods used to collect data for fleets share similar features like cloud connectivity, easy installation, real time data exchange, and connections with other devices within the vehicle. Some specific examples of unique features include:

- FleetUp provides asset trackers that can resist harsh environments.
- Zonar and G7 provide ADAS solutions to coach drivers.

Software Features

This section highlights unique software features of fleet management solutions outside of their primary function. Most startups in this category provide a control center to manage the fleet, typically a driver application and a customer portal if necessary. Majority of fleet management software is cloud based. Here are some examples of features:

Software Management Solutions

This section highlights added software tools that complement existing fleet management solutions. Here are a few examples:

Life Cycle Management:

- Switchboard, Avrios, FleetUp and G7 provide lifecycle management for vehicles or assets.
- KeepTruckin's platform manages and predicts vehicle maintenance.

HR:

- KATSANA provides a driver management system that helps manage drivers IDs, vehicle access, performance, logs, tasks and more.
- FleetUp's platform helps users manage driver payroll, time cards, scores, jobs and more.
- Avrios provides driver background checks, training, managing fines, and other driver compliance needs.
- Switchboard provides tools to manage driver scheduling, scores, payroll, etc.

Finance:

- Radius Payment Solutions has an integrated fuel and MasterCard reporting suite.
- Automile helps you maximize your tax deductions with their IRS-compliant mileage log.
- GreenRoad Technologies helps with expense management and fuel compliance.
- KeepTruckin provides a marketplace to install applications for compliance, fuel management and insurance.
- Fleetx.io constantly updates your financials by tracking invoices and POs.
- Nauto automates the claims management process in the event of a crash.

Back Office:

- Avrios provides an automated virtual assistant to automate repetitive data entry tasks - like invoice and leasing document processing.
- Fleetx.io provides compliance management.
- FleetUp's platform helps users manage/automate compliance needs.
- KeepTruckin automates compliance management. They provide an application that enables drivers to log their driving data based on data pulled from vehicles telematics.
- Platform Science and Switchboard help automate the management of HOS compliance for drivers.
- GPS Insight's platform provides a different view of information based on your responsibility, e.g. operations or finance.

Collaboration:

- **Platform Science**, KeepTruckin, Avrios, FleetUp, Idelic, Nautilus Labs and Fleetx.io provide collaboration tools. This includes team messaging tools, project dashboards, task management tools and more.
- **Greywing** provides a dashboard that enables crew members to view fleet data, trip information, view information from port agents, manage plans/budgets and more.

What's Important

What is an interesting technique used by a lot of software companies is building a marketplace into their management tool, that allows you to instantly add-on a new application. Keeptruckin and Verizon provide this feature for their software tools. This allows companies to grow quickly without having to rely on their team to build out this software.

Programmable/Automation

This section highlights startups that enable users to customize/automate their fleet management software. Here are a few examples:

- Wise Systems creates efficient route plans for fleets using AI and machine learning to improve routing customer service. Users can customize routes based on needs and their platform will continue to optimize the route.
- FleetUp's platform automates the collection/analysis of all data sources to help users automate management tasks, optimize processes and generate high level insights that help users maximize revenue.
- Vimcar's platform enables users to automate workflows to optimize/complete daily tasks faster.
- Onfleet provides an auto-dispatch engine that is able to send the right driver at the right time for last mile deliveries.
- KeepTruckin enables users to create custom forms for drivers that align with transportation needs.
- **Greywing** utilizes NLP to process large amounts of port-call and crew data to skip data entry and analyze fleet/port data.
- **Optimal Dynamics** utilizes AI solutions to plan/predict loading, planning and transport needs. Their platform can rapidly make changes based on events/needs and enables users to ask detailed questions about strategic decisions.

Integrations

This section highlights unique integration features of startups within this category. Here are a few examples:

- Onfleet can easily connect to hundreds of third-party apps like Shopify and Google Sheets.
- G7 system integrates with warehouses to optimize loading.
- Idelic integrates all fleet and business operations to create a safety suite.
- Keeptruckin provides an open API to connect any services.
- GreenRoad Technologies and Fleetio provide fuel card integration.
- KATSANA provides an API that allows users to integrate their system with existing applications and enterprise platforms such as ERP, PowerBI, SAP and others.
- Avrios integrates with fuel card providers and automatically enters invoices and categorizes costs.
- **Greywing's** platform connects directly with port agents to manage/plan vessel arrivals.
- **Optimal Dynamics** provides an open API that makes it easy to integrate with TMS tools and other systems.
- **Platform Science's** driver tablet enables users to download new apps.

Communication

This section highlights the importance of communicating fleet activities to all relevant parties. Here are some examples:

- Onfleet, G7, Radius Payment Solutions, Avrios, KeepTruckin and Automile all provide SMS messaging solutions within their applications to communicate with drivers or other stakeholders. Like most messaging services you can send photos, add notes, real time alerts and track messages.
- Wise Systems provides a portal that allows customers to view order ETA.

Other Unique Features

This section highlights other unique software features offered by startups in this section. Here are some examples:

Adapt/Event Driven:

- Wise Systems provides drivers with responsive delivery routes that adjust and adapt throughout the day to avoid delays.
- **Optimal Dynamics platform plans for uncertainty and constantly creates dynamic plans that have the highest probability of being profitable and on time.**

Analytics:

- GreenRoad Technologies platform utilizes AI to monitor fleet data to identify if anything deviates from the norm and helps users drill down to potential issues.

Additional Products

This section highlights startups that provide additional unique software products. Here are some examples:

- G7 provides an ADAS solution that offers pedestrian collision warning, lane departure, forward collision warning, headway monitoring, intelligent high-beam, speed limit indication and more.
- **NetraDyne is utilizing their cameras to develop 3D high quality maps that can be used to enable autonomous vehicle training.**
- **Switchboard provides a mobile application that helps drivers bypass weigh stations across the United States.**

What's Important

The common theme among fleet management software is its flexibility and simplicity. This is done through simple editing tools or prebuilt workflows within the fleet management tool. API integrations or marketplaces to quickly plug in additional services are also a means of growing software offerings. The biggest trends are making it very easy to launch new mobility services without owning any fleet.

Service Features

This section highlights added services fleet management tools provide to help fleet owners, customers, logistics providers, etc, provide the best service possible. Here are some examples:

Marketplaces

This section highlights startups that provide marketplaces. Here are a few examples:

- G7 created an online bidding platform to help enterprises search for exactly the right fleet for the job and connects small fleet owners with large shippers.
- Avrios provides a marketplace that enables fleet owners to purchase vehicles, repairs, fuel cards, tires and more.
- KeepTruckin provides an app marketplace that enables users to connect a variety of applications to their platform.

White-Label

This section highlights startups that are helping users set up new mobility services. So they whitelist their solutions to help users launch their own services.

- Onfleet provides white-label applications.

Operational Support

This section highlights startups that provide operational support services. It's standard for all fleet management solutions to offer operational support when understanding or using their software. However, some fleet management tools take it one step further by managing any of your back office processes. Here are some examples:

- FleetUp provides outsourced fleet management services including monitoring staff, managing vehicle maintenance, create/manage fleet management platform and more.
- **Chord X partners with vessel companies to identify innovative methods to reduce carbon footprint.**

Coaching/Education

This section showcases how fleet management solutions are trying to train fleet owners how to optimize their operations or drivers on how to better operate. Here are some examples:

Operations Training

- GreenRoad Technologies provides change management planning to improve fleet results.
- Avrios optimizes your fleet operations by working collaboratively with you to configure the platform and to develop a plan to save time, reduce costs and improve control.
- Nautilus Labs takes time to understand each vessel's entire IT stack and suggest the proper solution to connect the many fragmented networks to their hardware device.

Driver Training

- Katsana attempts to improve driver behavior with gamification. They generate driver scores based on their driving behavior.
- Vnomics provides drivers with audio alerts for improper shifting, speeding and idling.
- GreenRoad Technologies provides an application that provides real-time feedback and coaching on 150 types of maneuvers to slash accidents, expenses and risk. They also generate safety scores for drivers.
- Nauto provides self-guided and personal coaching to help improve driver performance.
- FleetUp provides driver coaching using a voice assistant that teaches drivers to be safer on the road.
- KeepTruckin provides automated coaching post trips. Their platform uses video from the trip as examples on how to drive safer.
- **NetraDyne provides drivers with recommended videos based on how they drove to enable drivers to self coach themselves. They provide drivers with a score based on their driving habits.**



Vehicle Rental

This section lets fleet managers rent more vehicles if their demand outstrips their supply. This is a unique and possible disruptive model that could be used by delivery marketplaces/services. Here are some examples:

- Radius Payment Solutions allows customers to rent any type of vehicle through the largest network of suppliers in the UK at very competitive prices.

Financial Services

This section highlights startups that offer financial services. Here are some examples:

- Nauto helps you find cheaper liability protection by rewarding better drivers and protecting them against wrongful claims.
- Radius Payment Solutions provides insurance for drivers.
- Radius Payment Solutions and **GPS insight** are providing fuel cards for fleets and drivers.
- **LocoNav provides RFID technology and a payment wallet that makes it easy for drivers to pay highway tolls without stopping.**

Asset Tracking

This section highlights startups that provide asset tracking solutions. Here are some examples:

- Automile offers a smart self-installed device along with web and mobile apps to protect you from thefts of valuable things such as trailers, motorcycles, ATVs, boats, earth movers, equipment, and more.
- G7 Video Monitors the condition of goods and temperature.
- KATSANA provides a number of sensors that can support industrial equipment including vibration sensors, RFID, rotation sensors, cargo sensor, and more.
- FleetUp provides comprehensive asset tracking software and hardware for products in transit. They also provide equipment tracking hardware/software.
- **Zonar tracks students and bus drivers.**

Unique Services

This section highlights unique services offered by startups in this section. Here are some examples:

- GreenRoad Technologies created a reward program to reward good fleet driving behavior with our global driver recognition program.

Use Case

This section highlights who are the target customers of startups in this category. Majority of startups are building products that cater to the industries below. There are a handful of specific use cases that exist but are not worth mentioning.

Delivery Services

There are a handful of startups that focus on providing fleet management tools to optimize delivery services.

These companies cater to delivery operations of all sizes/types including freight, sea vessels, last mile, etc.

Here are some examples of startups that cater to these users:

- Wise Systems, KATSANA, Vimcar, Onfleet
- Nautilus Labs, Greywing, Chord X provide services to sea vessels

Fleet Owners

Most startups in this category provide solutions to help fleet owners track their driver behaviors or vehicle health. These companies typically cater to freight delivery services. Here are some examples of startups that cater to these users:

- GreenRoad Technologies, Vnomics, Nauto, FleetUp, Avrios, KeepTruckin, NetraDyne, LocoNav, Optimal Dynamics, Nemodata, Switchboard, Platform Science

New Industries

There are a few startups that provide solutions that cater to industrial companies. These are corporations that typically have large fleets of industrial vehicles (not for delivery) that they'd like to track. Here are some examples of startups that cater to these users:

- KATSANA, FleetUp

Analytics

Category Definition: The analytics category highlights the top startups that provide business intelligence tools for supply chain use cases. These tools typically aren't involved in managing processes as their purpose is to identify data that could influence operations. Startups in this category overlap with startups in the industrial, marketplaces and enterprise infrastructure reports. The following content will breakdown the function, features and use cases of every startup recognized to showcase how they differentiate.

Important Updates:

There seems to be a growing importance of supply chain compliance and risk monitoring from governments, retailers and customers globally. This was important before, but we are seeing more emphasis on ESG, carbon tracking and cyber security compliance.

AI has been a big topic for this category - this also isn't new, but we see a lot more new companies added to this report incorporating AI tools. We also mentioned in the feature section AI is being used to predict almost everything - ETA, demand, supply, prices, forecasts, risks, sales, financial risks, vulnerabilities and more.

We can expect startups in this category to blend risk, financial, compliance and performance insight offerings. Startups will also attempt to acquire/build their own large private database that supports their insights. We may also see startups become more active in automating actions based on insights/forecasts.

Function

This section highlights the primary objective of startups in this category and how they generate data.

Primary Objective

This section highlights what startups are trying to measure. Here are some examples.

Performance

This section highlights startups that focus on tracking the movement of vehicles or products. Here are some examples:

- Noodle Analytics' platform can predict supply/demand for supply chain and manufacturing stakeholders to help eliminate excess inventory, product defects, unplanned downtime, and unfilled orders. Their platform monitors demand, inventory, production, asset and quality flows.



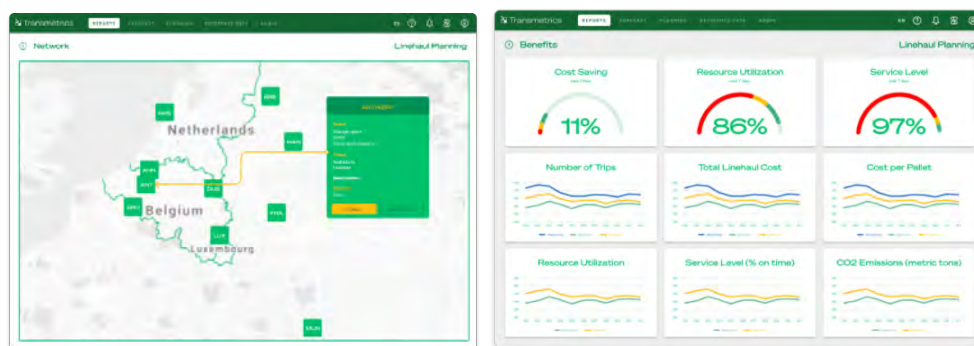
- FreightWaves' platform helps users monitor how much ocean container volume is being booked for U.S. imports. Their platform can also predict when freight will be coming into the U.S., when and in what volume. They also send market research reports that summarizes relevant activity across a growing list of industry segments, daily playbooks for trucking that are specific to brokers, carriers and shippers, information on oil and retail diesel markets, and much more.



- Portcast provides real-time monitoring of shipments to predict container arrivals and forecast cargo demand.

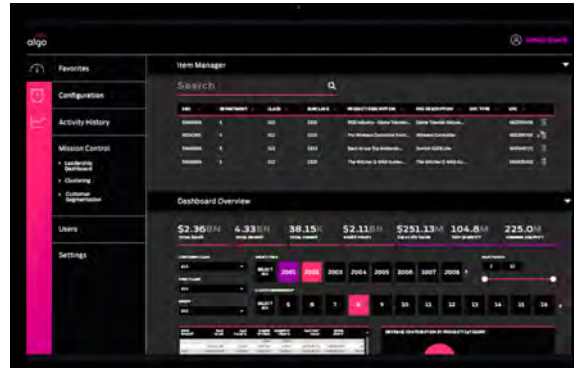


- Transmetrics's platform utilizes AI to provide demand, supply, and position forecasts. Their platform incorporates forecasting into user custom models/needs. They also utilize algorithms to calculate the most optimal plans that utilize users' logistic resources, this is based on the historical data, expected service levels, business requirements, and costs.

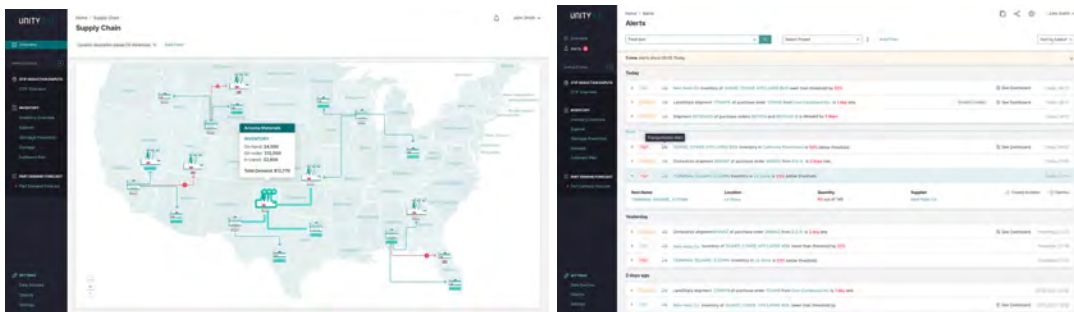


- Algo provides supply chain optimization software that helps users optimize sales & operations planning. Modules of their platform includes:
 - Insights tools that aggregate data various supply chain data, utilizes AI to organize/label this data and generate insights. Users can group stores based on performance or identify anomalies that affect inventory.
 - Simulation solutions that can model different outcomes based on business specific factors. Users are able to model inventory allocation and sales opportunities.

- Collaboration tools that make it easier for team members to chat with each other about insights. They also provide a chat bot that can answer questions for users.



- Vizion provides an ocean freight tracking and exception alert API. Their solution tracks shipments by container number, master bill of lading and master booking request. Their solution also automatically identifies when an exception occurs, where it occurred, the cause of the exception, and the updated ETA for the shipment.
- Unity SCM's platform aggregates all supply chain data from various sources to generate insights and share data with other tools. Their platform makes it simple to integrate, map and connect data to/from different systems. They also provide a dashboard that makes it easier to monitor the entire supply chain from manufacturers/carriers to customers. Their solution can also automatically detect disruptions to users' supply chains.



What's Important

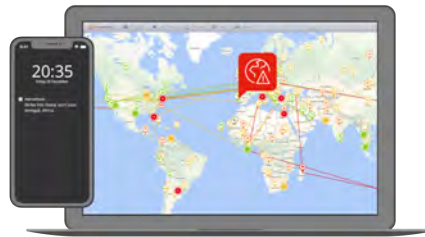
Startups in this section aggregate data from internal systems, third parties/market data or a combination of both to track movement of carriers/products. This information is mostly used to predict supply/demand to optimize inventory for manufacturers/retailers or measure supplier/carrier performance. A big feature among most startups in this section is utilizing AI to generate forecasts or create digital twins.

Risk

This section highlights startups that focus on identifying risks across the user's supply chain. Here are some examples.

- Portcast measures impact or delays to shipments based on weather, fuel price, congestion, natural disasters, labor strikes, crime, terrorism, geopolitical trends, news, and more.
- Riskmethods provides a supply chain risk management solution that helps users monitor their supply network for risks, analyze vulnerabilities/issues and take action based on insights. Modules of their platform includes:
 - Digital map that identifies all suppliers globally and monitors a variety of risks. Their platform can provide subtler analysis of suppliers' suppliers.
 - Tools that help users understand how identified risks affect their business.

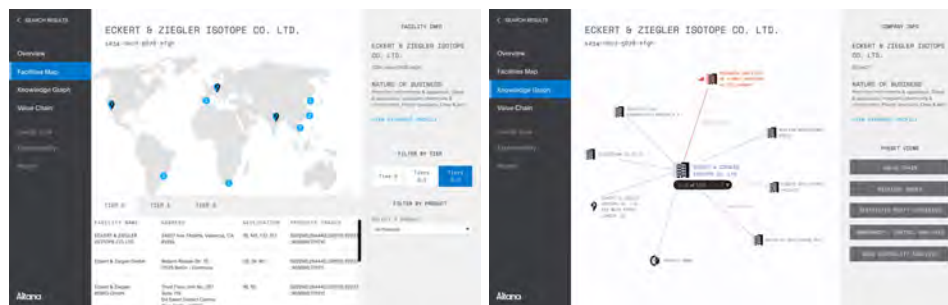
- Collaboration tools that help users build mitigation plans related to risks. They provide preconfigured risk mitigation plans.



- Resilinc's platform monitors for global disruptions to measure supply chain risks. With this information they can monitor and provide insights on suppliers, sites, products and parts.



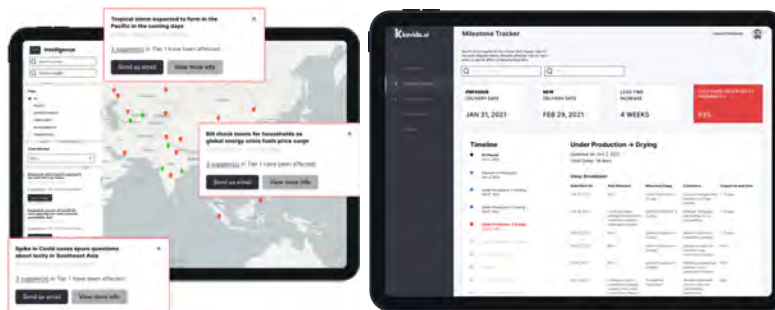
- Risk Ledger's platform helps users identify, measure, mitigate and manage third, fourth, and fifth party supplier risks. This includes security, ESG, and financial risks. Users can view risk profiles of existing suppliers, add information to supplier profiles and run approvals to enforce security requirements of suppliers.
- Altana AI provides a massive database that enables users to track/identify their entire supply chain. Modules of their platform includes:
 - Tools to search for products, understand their value chains and map their sustainability footprint.
 - Tools to match shippers/receivers with master data, automate HS classification and screen shipments.
 - Tools to search company profiles, map supply chain/trading networks, view individual business risks, ownership structure, and more.
 - Tools to view address/location of all facilities/headquarters and map flow of goods in/out of each facility.



- Interos' platform detects physical, financial, and cybersecurity vulnerabilities and maps out all relationships of a user's supply chain.



- Kavida.ai's platform predicts, monitors and tracks disruption threats to users purchase orders, suppliers and supply chains. Insights their platform can identify late deliveries (and why), track vessels/containers, ETA, lead times, financial health of suppliers and more.
 - Their platform also provides PO follow up tools. Users can view PO status, risks, and new delivery dates.



- CarbonChain helps stakeholders across the supply chain monitor carbon emissions. Users upload supply chain data, receive a detailed report on emissions and allow users to track data over time.



- Prewave monitors suppliers on media and sends users highly relevant and specific alerts.
- RiskPulse detects transportation risks up to 14 days in advance.

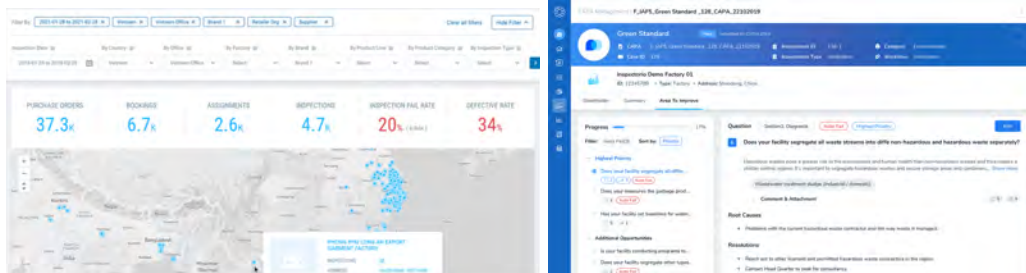
What's Important

This section overlaps with startups in the performance and compliance sections in this category. This section also overlaps with many of the climate analytics startups within the agriculture report. These companies typically integrate more external data sources to generate a very detailed map of users' supplier network. Startups differentiate with the level of detail they can track (product level data) to the size of their database. A differentiator are startups providing tools that help users mitigate problems. A noticeable change are startups focusing on cyber security vulnerabilities of their suppliers.

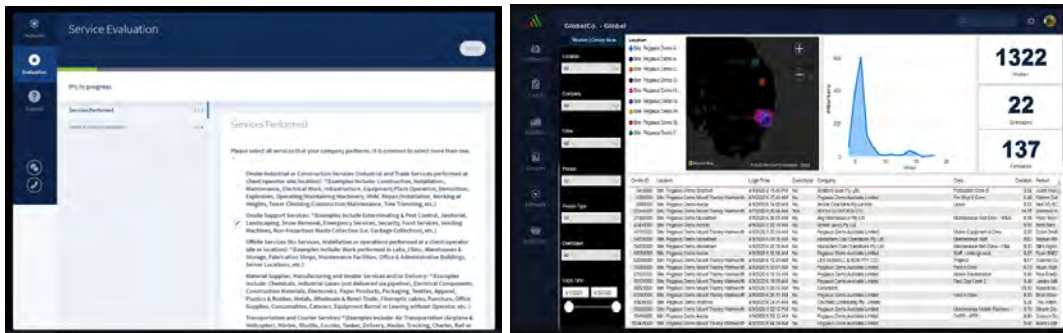
Compliance

This section highlights startups that monitor and manage supplier compliance. Here are some examples.

- Inspectorio provides a quality and compliance platform that makes it easy to monitor quality issues, components and supply chain performance. Users are able to view quality/compliance/audit operations, collaborate with team members, analyze risks, make sourcing decisions and more.



- Assent Compliance analyzes a broad range of supply chain data to ensure users meet social responsibilities, product compliances and monitor vendors.
- Supplyshift tracks the chain of custody to ensure that contractors or suppliers meet industry standards.
- Avetta provides a supplier and workforce compliance management solution. Their platform classifies suppliers based on their services and then automatically helps users collect compliance information from suppliers through reminders/emails/web interface/etc. Their solution all monitors contractors for qualifications/training/insurance/compliance to ensure they are capable of properly performing jobs. Other features of their platform includes:
 - Dashboard to review compliance analytics, generate reports, and more.



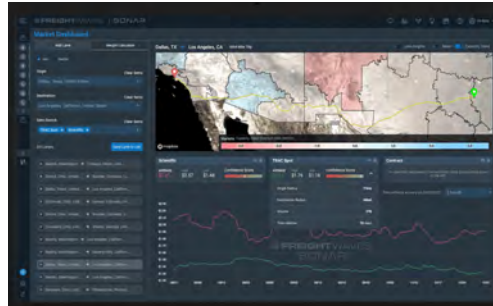
What's Important

Startups in this section overlap with those within the risk section above. Most startups in this section help users manage compliance paperwork with their suppliers. Suppliers are mapped out (mostly through user submission - enhanced with external sources), compliance workflows are auto-generated or custom built, their platform automatically monitors for compliance data needs and reaches out on behalf of users to complete assessments. Startups differentiate by the variety of compliance standards they track including social responsibilities, workforce compliance, and more.

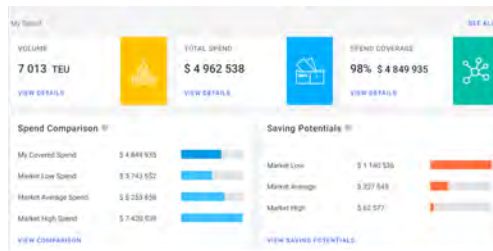
Financial

Many supply chain analytic tools use financial metrics to quantify supply chain variations. Here are a few examples:

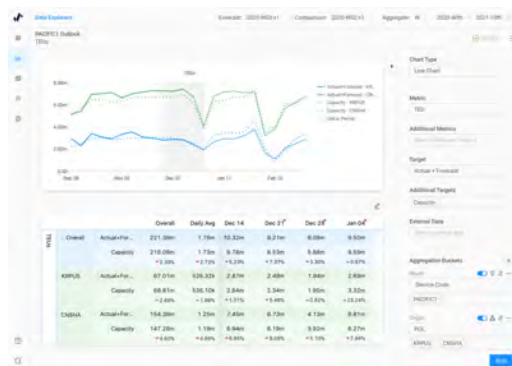
- FreightWaves' platform enables users to monitor spot rate market data. This includes spot prices, lane-by-lane freight rates, historical/forecasted prices, margins, and more.



- Xeneta provides ocean and air freight rate benchmarking and market analytics. Users can monitor market risks, benchmark rates and plan for transportation budget changes. Their platform also helps users forecast budget expectations, help users choose the right contracts and compare bids.



- Transmetrics's platform utilizes AI to provide demand, supply, and position forecasts. Their platform can forecast hub-to-hub volumes 7 days in advance and suggest the most optimal network plan to align demand and supply. This results in reducing network and procurement costs as well as increased service levels.
- Portcast provides real-time demand forecasting that allows users to implement dynamic pricing. They also help users review and select carriers based on costs/reliability.



- Expedock utilizes AI technology to extract and digitize data from any unstructured source, such as PDFs, XLS and emails. Users can send this data to other enterprise platforms and reconcile data against TMS platforms/third party sites to identify issues with billing.

What's Important

Startups in this section overlap with the performance section above. Majority of startups in this section are tracking market rates for shipping to help carriers and suppliers identify the best prices or carriers to work with. There are a handful of companies utilizing AI to model future prices to help guide users decision making for the present.

Data Creation

This section highlights how startups in this category generate data for insights. Here are some examples.

External

This section highlights startups that utilize external data sources or public data for their platform. Here are some examples.

- *Market:*
 - FreightWaves monitors market pricing for freight shipments globally.
 - Portcast monitors traffic and collects port/terminal data.
 - Transmetrics utilizes data from Forex, commodities, futures prices, port data, weather, holidays and events.
 - Riskmethods scans millions of sources such as media outlets, commercial databases, government databases and more.
 - **Altana AI utilizes market data from data partners like S&P Global, Moody's, Descartes and more.**
 - **Clearmetal pulls data from your carrier.**
- *Government:*
 - Resilinc uses NLP to process data from regulatory agencies.
 - Riskmethods scans millions of sources such as media outlets, commercial databases, government databases and more.
 - **RiskPulse looks at criminal activity and natural disaster impact zones.**
- *Weather:*
 - Transmetrics, Resilinc, FreightWaves, Portcast, **RiskPulse**
- *Fuel Price:*
 - FreightWaves, Portcast
- *Suppliers:*
 - Resilinc monitors load sites and points of interest of suppliers.
 - **Prewave, Interos, Kavida.ai and Algo monitor information about suppliers and their network.**
- *Media:*
 - **Prewave**, Resilinc and Riskmethods use NLP to process data from social media and news.

What's Important

Startups focused on generating risk or pricing insights typically utilize third party sources to understand how supply chains will be affected.

Private

This section highlights startups that acquire data from private sources. Here are some examples.

- *Assessments:*
 - Supplyshift, Assent Compliance, Avetta and Risk Ledger collect information about your suppliers for compliance, regulatory, verification and requirements. These companies reach out directly to suppliers through email, phone, survey and more.
 - Inspectorio's platform is able to automatically reach out to suppliers for inspections.
- *Industry Mapping:*
 - FreightWaves has a research team that uses a variety of surveys and data modeling to develop proprietary information about the industry.
 - **Interos built a massive business relationship graph repository that analyses big data to discover suppliers and their networks.**
- *Marketplace:*

- Xeneta collects freight rate data from their existing user base's short and long term rate agreements.
- Partnership
 - FreightWaves receives daily spot data directly from their consortium members' back-end systems. This data includes booked prices, origin, destination and equipment types on shipments recorded within the last 24 hours.
 - Vizion collects data directly from ports/carriers that includes container number, master bill of lading and master booking request. They also have third party data sets that include locations, terminal visibility, vessel verification, customs data and more.
 - Altana AI collects data from a variety of third parties including logistics, ecommerce, tax/custom/trade and advisory companies.

What's Important

Most startups monitoring suppliers typically build their own knowledge graph of the industry as well as build up a database of knowledge based on data they collect directly from suppliers. There are a couple startups that measure market prices, partner with marketplaces or utilize data from their own marketplace. Finally, there are a handful of startups that build relationships with different stakeholders that have valuable supply chain information.

Internal:

This section highlights startups that utilize user data for insights. Here are some examples.

- *Enterprise:*
 - Inspectorio and Assent Compliance pulls data from PLM and ERP solutions.
 - CarbonChain, Kavida.ai, Algo, Expedock, Transmetrics and Noodle Analytics utilize data from existing enterprise systems.
 - Altana AI enables users to share data from their enterprise systems. Their platform shares insights from data shared among their users, without sharing the true data or removing it from users' systems.
- *Location:*
 - RiskPulse, Clearmetal, Transmetrics and Inspectorio pulls data from historical and real time routes from users' fleets. This can be done directly with vehicles, uploaded data or extracted from TMS.
- *NLP:*
 - Algo utilizes NLP to analyze questions from team members or data from other systems.
 - Expedock utilizes NLP and OCR to analyze data from shipping documents.
- *Finance:*
 - Xeneta has users upload their freight rates/volumes to benchmark their data with the market.
 - Expedock utilizes NLP and OCR to analyze data from shipping documents (invoices).

What's Important

Many companies in this category integrate with users' existing enterprise systems to aggregate supply chain data. A unique feature we noticed are there are a couple companies utilizing NLP and OCR to generate insights from unstructured data sources.

Feature

This section highlights the unique software and service features of startups within this category. Below is the breakdown.

Software Features

This section highlights the unique software features of startups in this category. Here are some examples.

Artificial Intelligence

This section highlights startups that utilize artificial intelligence or machine learning in generating analytics. Here are some examples.

- Portcast uses machine learning to predict cargo arrivals and future demand. They can also provide qualitative reasons for delay.
- Resilinc uses NLP to pull data from documents, communication or other sources.
- FreightWaves platform can forecast future prices and spot rates.
- Transmetrics and Noodle Analytics utilize AI to make predictions of demand, inventory and production flows across the supply chain.
- Inspectorio utilizes AI to predict supply chain risks and can suggest mitigation efforts.
- Interos' platform utilizes AI to monitor and model supply chains in order to identify distress and vulnerabilities.
- Algo utilizes AI to generate forecasts to optimize movement of inventory and predict sales. They also utilize NLP to analyze data from various sources and as a chat bot to help users answer questions about their data.
- Kavida.ai utilizes AI to generate real time risk protections, forecast lead times, and predict financial status of suppliers.
- Expedock utilizes NLP and OCR to analyze data from shipping documents.
- Altana AI's platform can automatically generate HS classifications from product master data and shipment data. They also utilize AI for a variety of applications including screening, forecasting, and more.
- RiskPulse uses AI to detect transportation risks.

Customization/Automation

This section highlights startups that provide tools to customize or automate workflows based on insights generated by their platform. Here are some examples.

- Resilinc enables users to create autonomous workflows based on insights generated from their platform.
- Assent Compliance's platform automated outreach and data collection with supply chain stakeholders.
- Algo enables users to create automated workflows based on supply chain data insights.
- Kavida.ai enables users to automate PO management. Their solution monitors PO status, risks and can manage follow up.

Scoring/Benchmarking

This section highlights startups that benchmark/score suppliers/carriers. Here are some examples.

Benchmarking

- FreightWaves and Xeneta allow users to benchmark their freight rates against market rates. They also help users benchmark their suppliers/brokers.
- Portcast helps users benchmark carriers based on cost/reliability.
- SupplyShift enables users to benchmark their suppliers.
- Inspectorio is able to benchmark suppliers/factories by performance.

Scorecards

- Resilinc creates supplier scorecards based on historical events, recovery time, performance, sustainability, financial health, quality, cyber security and more.
- Riskmethods generates impact scores for all of your suppliers by category to understand exactly how a risk event might disrupt your supply network.
- Xeneta provides a shipping index that provides daily ocean container rates for a 40' container.
- Altana AI's platform can create reliability ratings for suppliers and recommend new suppliers to mitigate risks.

Database

This section highlights startups that created a sizable database of supply chain information. Here are some examples.

- Assent Compliance provides a large compliance contact database.
- Interos created a large knowledge graph of supply chain relationships.
- Altana AI provides a database of 400 million companies, their supply chain network and more details.

Other Software

This section highlights startups that built other software solutions unrelated to supply chain analytics. Here are some examples.

- Noodle Analytics provides manufacturing analytics software solutions that can predict/measure the flow of assets and quality.
- Inspectorio provides production tracking workflow solutions. Users are able to monitor products from purchase order to delivery.
- FreightWaves provides a job board for the supply chain industry.

What's Important

It's not new, but a lot of companies added to this report incorporate AI features within their platform. You will notice AI is used to predict almost everything - ETA, demand, supply, prices, forecasts, risks, sales, financial risks, vulnerabilities and more. AI is also used to extract data from unstructured sources, classify product data or answer questions from users. AI will be a major component for all supply chain analytics startups in the future.

Other things to note, many compliance, risk and financial focused startups provide benchmarks on prices/performance and/or score suppliers/carriers based on a variety of factors. This is a must have to help guide users decision making on vendors to work with.

Lastly, we noticed a handful of compliance and risk focused startups build their own massive database of information. This data utilizes a combination of external sources and data inputted by users/suppliers. You see startups are utilizing new data security features that enable users to share private data to the ecosystem without sharing their actual data.

Service Features:

This section highlights the unique service features of startups in this category. Here are some examples.

Assessment/Consulting

This section highlights startups that provide consulting or compliance assessment services. Here are some examples.

- Resilinc provides a dedicated team member to help with onboarding partners to assure they meet all of your expectations.

- Supplyshift surveys suppliers for financial and non-financial compliance.
- Assent Compliance provides team members that can help users with navigating regulatory reporting, compliance planning/policies/reporting and manufacturing data analysis.
- Avetta provides consulting services that help guide suppliers on how to reach or maintain compliance standards.
- Riskmethods provides risk management services that help guide users on best practices on managing supply chain risk.
- Algo provides a variety of consulting services to help users understand how to use their platform and understand data insights.

Certification

This section highlights startups that provide compliance certifications. Here are some examples.

- Avetta provides certification for new and existing suppliers. They also provide ongoing maintenance service and provide proactive support to ensure suppliers' accounts are always up-to-date. They even go as far as to provide employee-level supplier prequalification and learning management systems to ensure contracted employees are qualified and properly trained.
- Supplyshift provides certification for suppliers that complete their assessments.

Marketplace

This section highlights startups that provide marketplaces. Here are some examples.

- Avetta provides a marketplace for suppliers to access discounts on safety services/products and insurance.
- Resilinc provides a marketplace for health products. Healthcare stakeholders can list, loan and request medical devices.
- Macropoint provides capacity matching for carriers and LSPs.

Media

This section highlights startups that create their own media content. Here are some examples.

- Freightwaves creates a content platform to discuss freight data. This includes articles, podcasts, webinars, radio, videos and more.

Education

This section highlights startups that provide education products/services. Here are some examples.

- Assent Compliance created online courses that provide compliance education to companies and suppliers around the world.
- Inspectorio provides an online education program that trains users on their platform and industry best practices.

Use Case

This section highlights who are the target customers of startups in this category. Majority of startups are building products that cater to the industries below. There are a handful of specific use cases that exist but are not worth mentioning.

Suppliers/Retailers/Manufacturers

Many startups in this category focus on providing tools that help retailers/manufacturers/suppliers accomplish two different things- monitor their performance/costs of their supply chain or understand/monitor their supply chain for compliance. There seems to be a number of government regulations that require, and customers that demand, companies to monitor their product sources. The complexity of global commerce also makes it challenging to monitor goods shipped around the world. These startups are focused on meeting those demands:

- Assent Compliance, Portcast, Xeneta, FreightWaves, SupplyShift, Noodle Analytics, Transmetrics, Inspectorio, Avetta, Resilinc, [Interos](#), [Algo](#), [Kavida.ai](#)

Shippers/Carriers

There are a handful of startups that are helping shippers benchmark their performance and manage prices. You'll see more companies offer similar solutions in the transportation management category. Here are some examples of startups that cater to these users:

- Portcast, Xeneta and FreightWaves provide services to vessel shipping companies
- Transmetrics, FreightWaves and [Expedock](#) provide services generally to all types of shippers.

Non Supply Chain Users

There are a few companies that cater to non-supply chain customers. These are typically government, security or financial organizations. This section overlaps with climate analytics in the agriculture report. Here are some examples of startups that cater to these users:

- [Altana AI](#)

Fulfillment

Category Definition: The inventory/fulfillment category highlights the top startups that provide software and services that help companies manage and deliver customer orders. They also help with managing inventory across warehouses. These companies have a lot of overlap with the Marketplace Industry report. The following content will breakdown the function, features and use cases of every startup recognized to showcase how they differentiate.

*Note: This category was completely changed so I did not color code this category as it wouldn't make much sense.

Important Updates:

Fulfillment startups are moving in one primary direction - closer to warehousing services. The startups simply connecting marketplace orders with delivery services are facing a lot of competition from marketplace platforms. There is some innovation with software focused startups utilizing AI to pick the optimal packaging, delivery service and inventory disbursement. Startups that try to compete on the software side are beginning to offer more software modules like warehousing/inventory/vendor/etc management tools.

However, there are a number of startups that provide warehousing services that manage storage of stock and fulfillment for their customers. These companies compete on added services and by providing the fastest delivery or cheapest rates. What's important for many of these companies is assisting their customers with providing a 1-2 day delivery service. Pay attention to robotics logistics and warehousing services categories, as there is a lot of overlap with startups in this category.

Function

This section highlights the primary software function of startups within this section, storage/shipment capabilities, additional logistic software addons and how data is created.

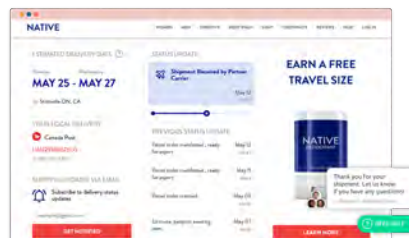
Primary Function

This section highlights the primary software function of startups within this section. Here are some examples.

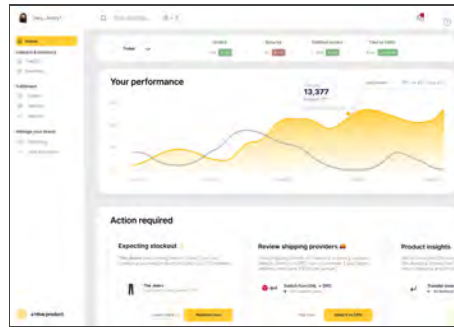
Ecommerce Fulfillment

This section highlights startups that primarily support ecommerce companies fulfill orders. Here are some examples.

- Passport provides international fulfillment for ecommerce brands. Their platform directly integrates with users' shopping cart using a custom built application.



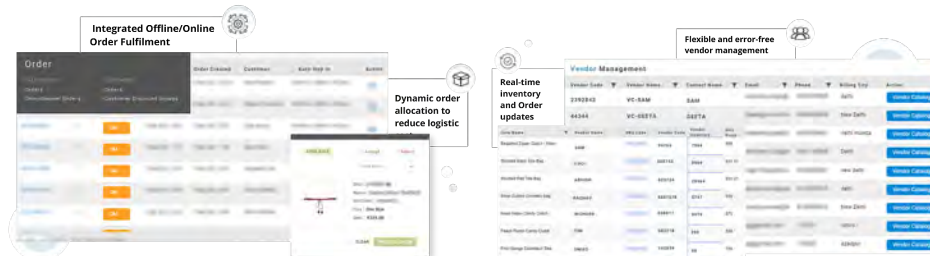
- Hive helps ecommerce companies manage their fulfillment process. Their platform integrates their inventory/order data, users select which SKUs they want fulfilled by Hive, Hive then stores/packs users inventory, and ships it through 3PLs to the end customers. They provide an analytics dashboard to help users monitor trends and generate forecasts.



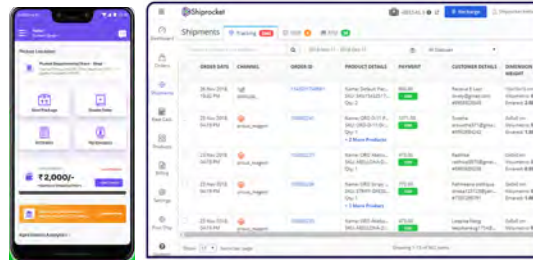
- MyCloudFulfillment provides ecommerce fulfillment and warehousing services. They pick up user packages, review quality, pack goods and deliver items to end users. They also provide a management platform to help users monitor all fulfillment operations.

The screenshot shows the MyCloudFulfillment 'Inventory List' interface. It features a sidebar with navigation options like 'Overview', 'Orders', 'Inventory', 'Analytics', and 'Settings'. The main area displays a table of inventory items with columns for 'Image', 'Product Name', 'Variant', 'Unit Price', 'Category', 'Ship Date', 'Status', 'Quantity', and 'Location'. The table is filtered to show 'All Products' and 'All Variants'.

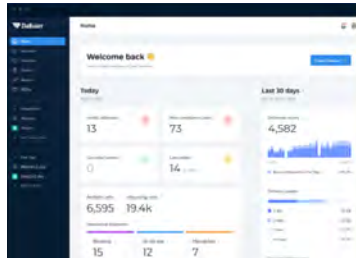
- Unicommerce eSolutions provides a D2C focused ecommerce fulfillment platform. Modules of their platform includes:
 - Warehouse management tools that help users to autonomously manage stock location and level of the goods in a warehouse.
 - Inventory management tools that help users create a centralized view of inventory, reduce labor/stocking/movement costs, streamline scanning/data mgmt, generate trends and more.
 - Vendor management tools that centralize orders/vendors, quickly manage orders/returns, manage vendor lifecycles and generate insights.
 - Ecommerce management tools that help users manage fulfillment, enhance post purchase services, analyze customer segments, manage catalogs and more.
 - Order management tools that help users aggregate orders from offline/online sources, ensure order fulfillment, record payments in accounting integrations and more.
 - Dashboard to visualize performance of sales, fulfillment, returns, inventory and payments.
 - Return management software that supports users with streamlining refunds, replacements and more.



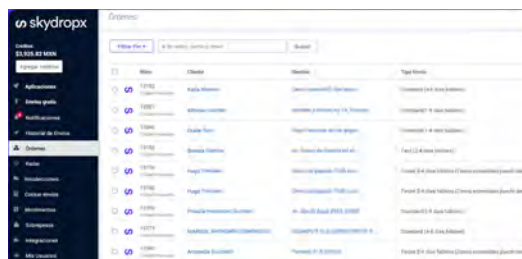
- Shiprocket provides ecommerce fulfillment solutions that support 1-2 day deliveries and international shipments. Users connect their marketplaces, ship their stock to Shiprocket's warehouses, and Shiprocket fulfills orders as they are received. They help recommend the best couriers based on performance, manage returns, generate custom post purchase experiences and more.



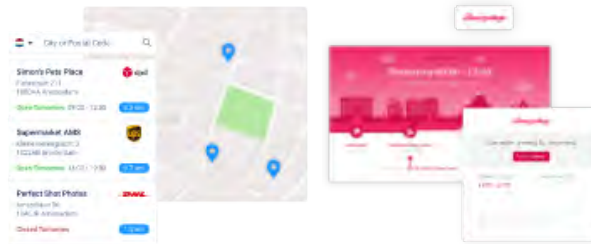
- Deliverr enables ecommerce brands to offer 2 day delivery across multiple social platforms and marketplaces. Users send their inventory to their warehouses and they're team helps them set up 2 day shipping across platforms.



- Bolt provides end-to-end fulfillment service for ecommerce brands. They have their own fleet/warehouses that enables them to pick, pack and ship to customers themselves. They provide an electric fleet to deliver products but they also partner with other couriers for last mile delivery.
- Skydropx provides a platform to centralize ecommerce orders/shipments, determine the best shipping option per parcel, and track shipments that includes post-purchase notifications/experiences for customers.



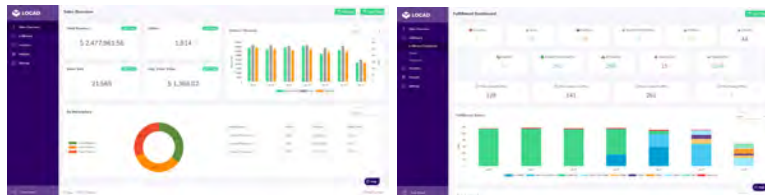
- Huboo provides ecommerce brands with warehousing and fulfillment services. Users ship their stock to Huboo's warehouse, Huboo packages products and ships them using 3PLs. They provide a dashboard to monitor inventory, sales, costs and more. They also utilize a micro-warehouse model to quickly fulfill orders.
- Pandion is building an ecommerce delivery network that utilizes machine learning to optimize on-time delivery and higher asset utilization.
- Sendcloud provides an ecommerce fulfillment solution that connects to 130+ shop systems and carriers. Users connect their marketplaces and preferred carriers, provide shipping selection for customers during checkout, create customizable fulfillment workflows, manage returns and more.



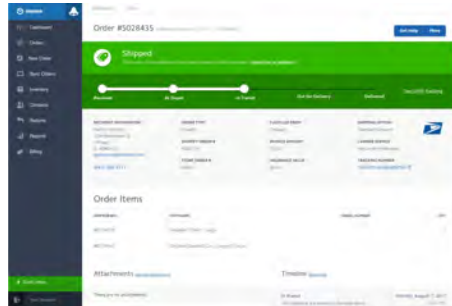
- Pickrr Technologies provides ecommerce shipping solutions. Users easily connect Pickrr Technologies' platform to their marketplace, their platform identifies the best carriers based on a variety of factors utilizing AI, and they provide analytics dashboards and post purchase experiences.
- Istore Isend provides ecommerce fulfillment services that include warehousing, pick/pack, delivery networks, inventory management and more. Modules of their platform includes:
 - Fulfillment services that include bundling, custom packaging, gift management and more.
 - Ecommerce management that helps users set up/operate/design marketplaces, consolidate operations, create/manage campaigns, plan demand and generate insights.
 - 10 fulfillment centers that are equipped with advanced inventory/warehouse management solutions to streamline operations.



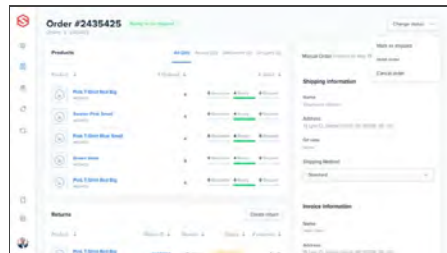
- Locad provides ecommerce fulfillment services. They enable users to connect all their sales channels/marketplace, deliver stock to their warehouses, same day pick/pay, monitor customer shipments and monitor insights on operations.



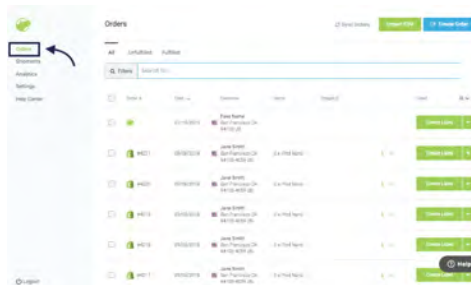
- ShipBob provides a logistic platform for ecommerce fulfillment. Modules of their platform includes:
 - Integration tools that enable users to connect major ecommerce platforms to centralize all orders and inventory. They also integrate with carriers that offer all modes of transport and identify the optimal delivery partner per order.
 - Warehouse services that manage user stock and strategically place inventory to optimize costs and fast shipping.
 - Order management tools that help users monitor/manage all orders and visualize their status.
 - Inventory management tools that help users manage inventory across fulfillment locations, replenish/bundle inventory and more.
 - Analytics dashboard to visualize all operations.



- ShipHero provides fulfillment software and warehousing for ecommerce brands. Users connect their marketplaces and then ship their inventory to ShipHero's warehouses. ShipHero intelligently distributes user inventory across different warehouses to make fast deliveries. They then pick, pack and ship products while also including an analytics dashboard.



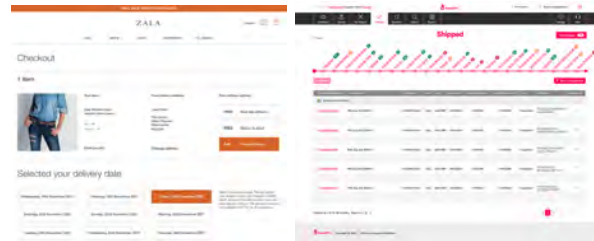
- Shippo provides ecommerce shipping fulfillment software. Users simply connect their marketplace to Shippo's platform. Shippo fulfills orders utilizing the best carriers based on performance and product specifications. Users can also compare carrier rates, generate labels, manage returns, schedule pickups, manage customers for international shipments, create branded tracking pages and more.



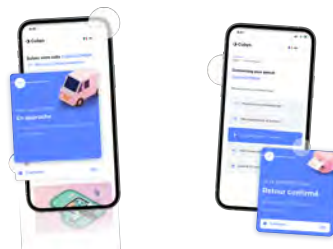
- Airhouse provides fulfillment software and warehousing services for ecommerce brands. They provide pick, pack, custom packaging and shipping. Users simply connect their marketplaces/sales channels, ship their inventory to Airhouse, and they complete the rest.
- Selery provides personalized packaging, multi-channel order fulfillment, subscription box fulfillment and warehousing. Users simply connect their sales channels, ship their stock to their warehouses and their team manages the rest. This includes storage, picking, kitting, packaging, and shipping.
- FlavorCloud provides international fulfillment software for ecommerce brands. Customers can view the best carriers at checkout, all duties/taxes are included and customers can track orders as they are delivered.
- AfterShip provides fulfillment software and post purchase experiences. Users connect their marketplace, they offer a branded tracking page, shipment visibility/notifications, order analytics, issue management tools, return management and more. They also provide a variety of commerce management and marketing/advertising solutions.



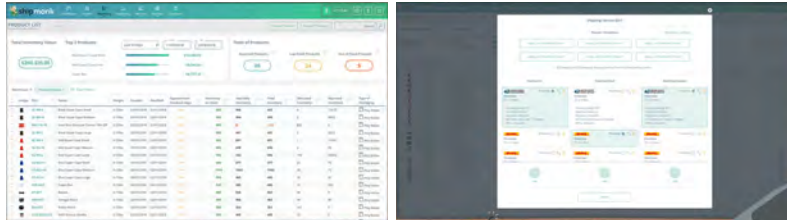
- Sorted Group provides ecommerce fulfillment software that helps users manage carriers and post-purchase experiences. Modules of their platform includes:
 - Carrier/order management dashboard that enables users to monitor shipment progress, generate carrier labels, track costs/performance, manage issues, benchmark carriers and more.
 - Customizable post purchase experiences that include return management, customer communication tools, shipment tracking, personalization of delivery options and more.



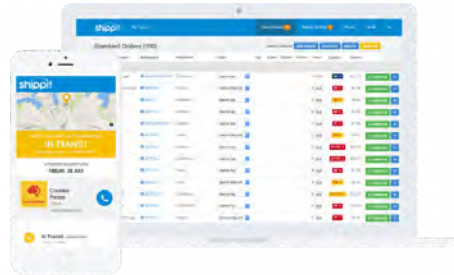
- Swyft provides a fulfillment solution that enables ecommerce brands to offer 2 day shipping. Users simply connect their marketplace to their platform, create/manage labels, their solution automatically load balances/routes parcels, provides tracking tools and more.
- Cubyn provides fulfillment solutions and warehousing for ecommerce brands. They provide real time tracking, delivery guarantees, warehouse automation tools and more.



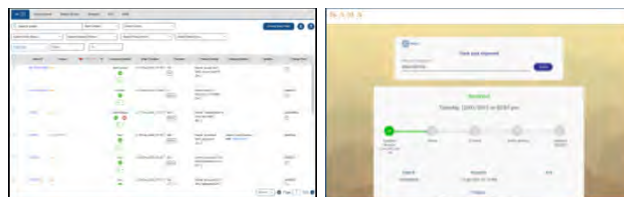
- ShipMonk provides fulfillment software and warehousing services. Modules of their platform includes:
 - Inventory management tools that centralize inventory, identify best selling SKUs, monitor stock levels and more.
 - Order management solutions that syncs with all sales channels and tracks the status of orders as they're placed.
 - Shipping management tools that help users view best carriers, monitor shipments and more.
 - Warehouse management tools that help users manage inventory across multiple warehouses, create special requests, customize fulfillment and more.
 - Post purchase experience solutions that include branded tracking pages, claims management, insurance products and more.



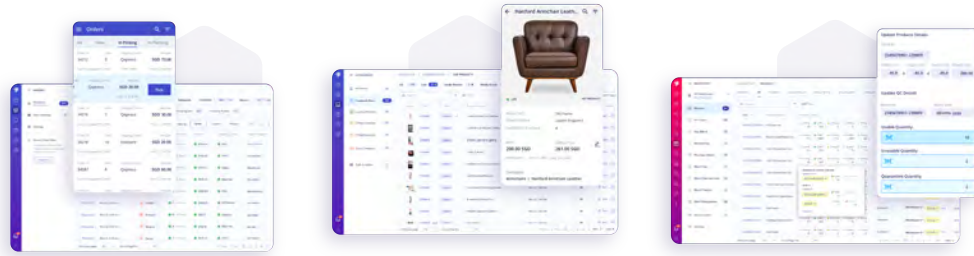
- Shipit provides fulfillment software for retailers of any size. Their platform can coordinate/optimize orders/shipments from multiple carriers/stores/warehouses/users. Their solution also recommends the best way to pack orders, print labels, customize shipping rules, manage returns, analyze carrier performance and more.



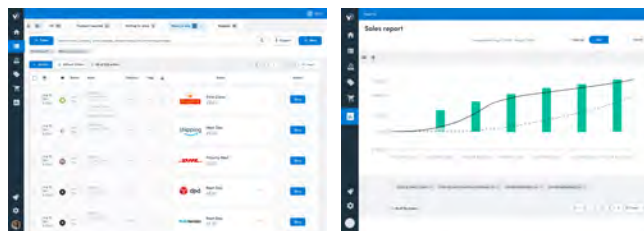
- EasyPost provides fulfillment software. Users integrate their API to their marketplace, create shipping labels, track packages and insure shipments.
- WareIQ provides an ecommerce fulfillment platform and warehousing services that offer same day delivery. Their platform recommends the best way to disburse inventory, stores their products in their hubs and pick/packs/ships products to end users. Modules of their platform includes:
 - Shipping management tools that help users manage delivery partners, shipments, issues and fraud.
 - Order management tools that help users centralize orders across sales channels, find/create shipping labels and more.
 - Inventory management tools that help users track stock levels, costs, transfers, bundles/promos and more.
 - Warehouse management tools that help users manage multiple warehouses, sync inventory, reconcile invoices and more.



- Anchanto provides inventory, order and warehouse management solutions to support ecommerce fulfillment. Modules of their platform includes:
 - Order management tools that centralize orders/inventory from all sales channels, track stock levels, route orders to closet inventory, manage catalogus/PIM and pricing.
 - Warehouse management tools that include automated/customizable pick/pack workflows, monitor inventory flow, customer onboard tools, labor management, bundling/kitting management and more.



- Floship provides international fulfillment services and warehousing for ecommerce brands. Users can connect their marketplace, send their stock to Floship's warehouse and Floship will pick/pack/kit/ship products. Modules of their platform includes:
 - Logistic consulting services to support users with international shipments.
 - Inventory management that allows users to track their stock levels across Floship's warehouses. They also provide fulfillment automation that includes carrier selection, packaging selection, order routing, label printing and address verification.
- Emiza provides fulfillment services and warehousing for ecommerce brands. Users can connect their marketplace, send their stock to Emiza's warehouse and Emiza will pick/pack/kit/ship products.
- Easyship provides a shipping management solution that enables users to integrate delivery services to their marketplace, customers can select ideal carriers, and they help print labels for shipment.
- Veeqo provides fulfillment and inventory management solutions for ecommerce companies. Modules of their platform includes:
 - Inventory management tools that help users track/forecast inventory, centralize inventory across all sales channels, create workflows, manage product bundling and more.
 - Order management tools that help users track order across sales channels, manage returns, generate sales reports and more.
 - Shipping management tools that include carrier integration/selection, customizable shipping workflows, shipment tracking, custom invoices, label printing and more.
 - Analytics tools that include audit, picking, inventory, sales and customer service insights/reports
 - Warehouse management software that includes inventory allocation across multiple locations, automated picking, stocking workflows, product bundling management and more.



What's Important

Most companies are very similar in this section. They easily integrate with a variety of marketplaces, can connect customers/orders to the best carrier, provide label printing and post purchase customer interface.

Startups differentiate on the software or services side. For the software angle, startups layer additional tools that make it easier for companies to manage their supply chain. This includes inventory, warehouse, commerce, vendor management, etc. More examples can be seen below in the enterprise add-on section.

Startups also provide more fulfillment workflow flexibility. Some allow users to create custom workflows, while others automate certain processes for them - like picking the best carrier, assigning the best packaging based on order, etc.

From the services side, you see a handful of startups launch their own warehouses to store, pack and ship user's inventory. More examples are shown below in additional services. Startups focus on helping companies completely outsource fulfillment work and try to enable brands to offer faster shipping services. This is important for receiving 1-2 day delivery marks on third-party marketplaces (Amazon).

General Fulfillment

This section highlights startups that help omnichannel businesses fulfill orders. These companies don't specifically focus only on ecommerce companies, which is why they are in a separate section. Here are some examples.

- Everstox platform helps companies automate distribution logistics operations and order delivery. Modules of their platform includes:
 - 3PL fulfillment matching that enables companies to upload order data and automatically match them with storage, pick & pack and shipping.
 - Dashboard that helps users visualize supply chain, order sources, warehouses, stock movement and more.

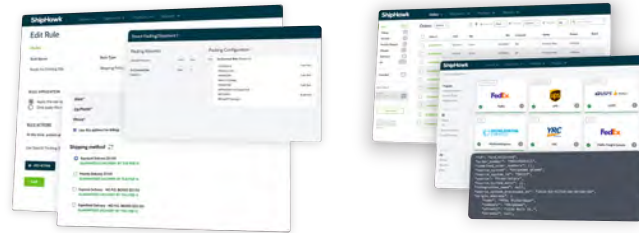


- OneRail provides a last mile fulfillment platform. Their platform matches deliveries with their massive carrier network that delivers across all modes. They also provide fleet management solutions to optimize delivery routes, real time delivery tracking tools, analytics dashboards and 24/7 services to help customers manage any issues with their delivery.

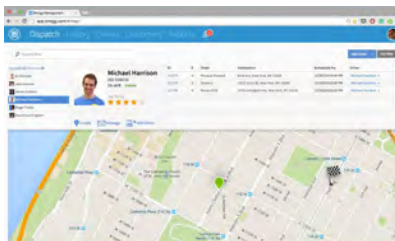


- Outerspace provides warehousing, picking, packing, kitting and shipping. They also provide a number of unique services including manufacturing, onsite offices, content production and last mile delivery services.
- ShipHawk provides advanced packing and shipping software for high volume retail, wholesale, and eCommerce companies using an ERP. Modules of their platform includes:
 - Shipping software that utilizes packing and shipping algorithms to automate order fulfillment. Their platform identifies/rates the best carrier per order (parcel or LTL), optimizes packing decisions and more.

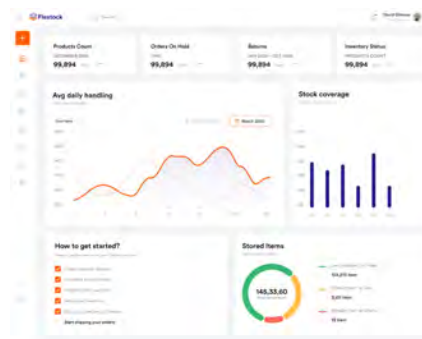
- Packing tools that selects the optimal carton/box/pallet based on product dimensions and delivery costs.
- Configuration tools that enable users to create rules engines to customize carrier/service selections.
- Dashboard to visualize warehouse, shipment, delivery and financial trends.



- Bringg's platform unifies delivery/fulfillment by connecting supply chain systems with internal and third party fleets. Modules of their platform includes:
 - Order management tools that syncs with inventory/retail systems to determine pickup availability, and to present the optimal pickup options at checkout. This includes customer location tracking, pickup IDs, JIT order prep/pickup and business intelligence.
 - Delivery management tools that enable users to select delivery providers, manage delivery process/payments/routes, measure performance and more - for both internal and external delivery services.
 - Fleet management solutions that help users dispatch/route drivers, includes a driver app for task/scheduling/payments management and a dashboard to visualize fleet performance.
 - Analytics dashboard that helps users centralize all operations.

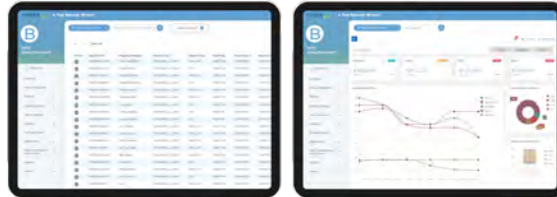


- Flexstock provides fulfillment software and warehousing services for SMBs. They store user inventory, process orders and ship them through carriers.



- aCommerce provides a variety of marketing, commerce management, fulfillment, warehousing, shipment and analytics software/services. Modules of their platform includes:
 - Market intelligence analytics on Southeast Asia based marketplaces. Their platform provides insights on strategy, assortment, pricing, content, reviews, ratings and more.

- Commerce management tools that include managing listings on multiple sales channels, product information management tools, price/promotion management tools, product assortment and more.
- Fulfillment tools that centralizes orders, manages different fulfillment modes and handles returns.
- Inventory management tools that include demand/supply forecasting, promotion planning and more inventory analytics.
- Shipping management tools that includes coordinating carriers, matching orders with shipping needs, manages cash on delivery and helps users track shipments.
- Tools that enable users to set up private marketplaces.



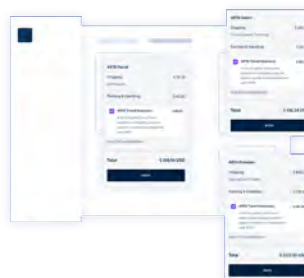
What's Important

This section follows many of the same characteristics as the ecommerce fulfillment section. However, these companies tend to be more active with fleet and transportation management services and software.

Unique Fulfillment Services

This section highlights companies that provide unique fulfillment services. Here are some examples.

- ARTA provides post-sale and fulfillment solutions for collectibles. Their platform provides a dashboard where users can get quotes, book, track, and manage shipments. They are able to help users find multiple transport modes to ensure safe delivery of every item based on type, medium, and value.



- Perishable Shipping Solutions provides full service fulfillment services including receiving, frozen & cold storage, pick & pack, shipping and tracking for perishable goods. Users connect their stores, send their products for storage, users place orders that are fulfilled by PSS.

Inventory/Warehouse Management

This section highlights startups that provide inventory and warehouse management software. These companies don't necessarily focus on fulfillment but there is a large overlap. Here are some examples.

- Fuse Inventory provides an inventory management platform that pulls data from the user's supply chain and utilizes AI to forecast/plan for demand. Modules of their platform includes:
 - Inventory analytics that help users analyze the inventory lifecycle, examples include analyzing inventory turnover, track costs/profitability, plan for stockouts and more.
 - Inventory management that helps users manage shipments, orders, vendors and more.

- Inventory demand planning that analyzes sales trends, predicts product performance, identifies the rationale for changes and more.
- Fountain9 provides predictive inventory planning solutions. Modules of their platform includes:
 - Tools to forecast demand.
 - Pricing and promotion tools that can make inventory plans in real time based on impact of events/pricing.
 - Purchase/replenishment planning tools that help users avoid stock outs and when to reorder.
 - Sales/operations planning tools that help marketing, sales and operations teams coordinate.



- Logiwa provides warehouse management and fulfillment solutions. Modules of their platform includes:
 - Warehouse management tools that dictate putaway, picking, walking optimization, multi-warehouse management and more.
 - Inventory tools that synchronize marketplaces with their system, route orders and track inventory trends.
 - Fulfillment tools that help generate labels, identify the best carrier based on shipment, packaging recommendations and more.



Services

This section highlights additional storage, delivery and packaging services offered by startups in this category. Here are some examples.

Delivery

This section highlights how startups in this category deliver orders to customers. Here are some examples.

- aCommerce, Veeqo, Emiza, Floship, WareIQ, Shippit, ShipMonk, Cubyn, Swyft, Sorted Group, AfterShip, FlavorCloud, Flexstock, ARTA, Airhouse, Shippo, Shiphero, ShipHawk, ShipBob, Locad, Istore Isend, Pickrr Technologies, OneRail, Sendcloud, Huboo, Skydropx ,Bolt, Shiprocket, MyCloudFulfillment, Hive, Everstox, Passport, Floship, Deliverr, Shippi, Anchanto, Selery, EasyShip partners with 3PLs to offer a variety of delivery options including on demand delivery, next day delivery, standard delivery, bulk delivery, LTL freight as well as worldwide parcel and bulk delivery.
- Bolt has their own fleet of electric delivery vehicles to make deliveries.
- Outerspace provides last mile delivery services using their own fleet.

- Bringg helps users coordinate 3PLs and their own fleet for deliveries.

Storage:

Most fulfillment tools also help with storage, whether that is virtually or they offer storage services themselves. How much competition on storage is by price.

- aCommerce, Emiza, Floship, Passport, WareIQ, ShipMonk, Cubyn, Flextock, Selery, Airhouse, Shiphero, ShipBob, Locad, Istore Isend, Pickrr Technologies, Outerspace, Huboo, Bolt, Deliverr, Shiprocket, MyCloudFulfillment and Hive stores users' stock within their facility, package them if needed and ship them through 3PLs.
- Everstox helps users source the best warehousing providers.
- ShipHawk helps users manage shipments/orders from a variety of warehouse locations internal/external.

Packaging:

Many tools offer packaging, especially if they offer outsourced storage services. Almost all tools provide package labeling for shipment. A handful of services provide kitting as well.

- aCommerce, Emiza, Floship, WareIQ, ShipMonk, Selery, Airhouse, Shiphero, ShipBob, Locad, Istore Isend, Outerspace, Huboo, Bolt, Deliverr, Shiprocket and MyCloudFulfillment provide labeling, packaging, and checks products for defects.
- Shippo, Veeqo, Swyft, Sorted Group, AfterShip and Passport help users print labels.
- Skydropx and Everstox help users find fulfillment providers that can provide pack and ship.
- Hive helps users create custom packaging.

What's Important

All fulfillment solutions utilize third party delivery services to deliver packages. Very rare to see companies also have their own fleet. There are however a number of startups that provide their own warehouses. Users can ship their stock to their warehouse and they will manage everything from packaging, promotion, storage and delivery. This seems to be a rising trend for startups in this category.

Software Add-ons

This section highlights the type of modules/software startups in this section include with their fulfillment software/services. Here are some examples.

- Inventory & Order Management:
 - aCommerce, Veeqo, Emiza, Floship, Anchanto, WareIQ, Shippit, ShipMonk, Logiwa, Sorted Group, Flextock, Selery, Airhouse, Shippo, Bringg, Shiphero, ShipHawk, ShipBob, Locad, Istore Isend, Pickrr Technologies, Outerspace, Sendcloud, Huboo, Skydropx, Bolt, Deliverr, Shiprocket, Everstox, MyCloudFulfillment, Unicommerce eSolutions
- Returns Management:
 - aCommerce, Veeqo, Emiza, Floship, Anchanto, WareIQ, Shippit, ShipMonk, Sorted Group, AfterShip, Selery, Bringg, Shiphero, Istore Isend, Sendcloud, Huboo, Skydropx, Shiprocket, Everstox, Unicommerce eSolutions, Hive, Optoro
- Warehouse Management:
 - aCommerce, Veeqo, Floship, WareIQ, ShipMonk, Cubyn, Logiwa, Shiphero, ShipHawk, Istore Isend, Unicommerce eSolutions, Anchanto
- Post-Purchase Branding
 - aCommerce, Veeqo, WareIQ, Shippit, ShipMonk, Sorted Group, AfterShip, Shippo, Sendcloud and Shiprocket
- eCommerce Management:

- aCommerce, Anchanto, Istore Isend, Unicommerce eSolutions
- Product Management:
 - aCommerce, Anchanto
- Logistics/Fleet Management:
 - Bringg, OneRail, Bolt
- Vendor Management
 - Unicommerce eSolutions

What's Important

Many startups in this section provide inventory, order and returns management tools that help businesses monitor/manage fulfillment operations. There are a handful of companies that are providing additional software tools. This provides a more holistic experience for different types of customers - mostly larger SME.

Data Creation

This section looks at how data is created/collected by startups in this category. Here are some examples.

Internal

This section highlights startups that collect data from internal systems of the user. Here are some examples.

- Everything: aCommerce, Veeqo, Floship, Anchanto, ShipMonk, Bringg, ShipHawk, Unicommerce eSolutions, Everstox and Fuse Inventory integrate with eCommerce storefront, ERP and accounting software, warehouses, 3PL, wholesalers, and more.
- TMS: Passport, OneRail
- ERP: MyCloudFulfillment, Outerspace, Pickrr Technologies, Istore Isend, ShipBob, Logiwa
- Inventory Mgmt: Deliverr

Ecommerce

This section highlights startups that integrate with marketplaces to collect order information. Almost all startups in this section integrate with marketplaces. Here are some examples.

- aCommerce, Veeqo, Easyship, Emiza, Floship, Anchanto, WareIQ, Cubyn, Logiwa, Sorted Group, Flexstock, Selery, Airhouse, Shippo, Bringg, Shiphero, ShipBob, ShipMonk, Locad, Istore Isend, Pickrr Technologies, Outerspace, OneRail, Sendcloud, Huboo, Skydropx, Bolt, Deliverr, Shiprocket, Unicommerce eSolutions, MyCloudFulfillment, Hive and Everstox integrate with multiple marketplace platforms.
- Passport's platform directly integrates with users' shopping cart with a custom built application.

Partners

This section highlights startups that integrate with delivery/storage service providers. Many startups in this category have integrations with delivery partners. Here are some examples.

- OneRail, Sendcloud, Deliverr, Shiprocket and MyCloudFulfillment partner with 3PLs.
- Unicommerce eSolutions and Everstox partner with 3PLs and warehousing providers.

Mobile/IoT

This section highlights startups that utilize mobile and IoT devices to collect information. Here are some examples.

- Logiwa and Shiphero provide a mobile application that helps warehouse employees with pick and pack tasks.
- Veeqo, Logiwa and Unicommerce eSolutions provide handheld devices that make it easy to manage inventory.

Business Model

This section highlights different business models of fulfillment services. Most startups, delivery fee is charged separately. Here are some examples:

Per Order

- Hive charges user per order
- Sendcloud charges a monthly subscription fee based on the number of shipments per month.
- EasyPost enables users to ship for free up to 120k shipments per year. They only charge fees after that.

Per Product

- MyCloudFulfillment charges area, picking and ordering handling fees per product, order or per cubic meter.

Per Storage Needs

- MyCloudFulfillment charges area, picking and ordering handling fees per product, order or per cubic meter.
- Deliverr condenses all fulfillment costs into a flat fulfillment fee per unit based on the marketplace it's listed on and storage costs based on package size/weight.
- Locad only charges users based on the storage they use.
- ShipBob charges total fulfillment cost per item based on storage, packing/picking and delivery.
- ShipMonk charges based on picking fee, promotional inserts, returns per package. They also charge a monthly fee for storage space.

Per Volume/Weight

- Shiprocket charges users based on volumetric weight of products. This includes inbound/outbound and packaging costs.
- Deliverr condenses all fulfillment costs into a flat fulfillment fee per unit based on the marketplace it's listed on and storage costs based on package size/weight.
- Huboo charges an all inclusive cost per parcel based on weight/size. This includes inbound, receiving, picking and courier costs.
- Shiphero charges total fulfillment cost per item based on size and how fast it can be delivered.
- Cubyn charges based on size, number, weight of packages and speed of delivery.

Licensing Fee

- Shiphero charges a monthly subscription for their warehousing software.
- Shippit charges a monthly subscription for their software. They also charge extra for features on a per item basis.

Feature

This section highlights the software and service features of startups within this category. Below is the breakdown.

Software Features

This section highlights the only software features of startups in this category. Here are some examples.

Unique Software Features

This section highlights the unique software features of startups in this category. Here are some examples.

- Sendcloud, Veeqo, Sorted Group and Airhouse provide an RPA solution that enables users to create/manage complex order/inventory/shipping processes.
- Passport provides a whitelabel delivery tracking tools.
- ShipBob optimizes inventory disbursement across regional warehouses to ensure lowest storage costs and 2 day shipments to users.
- ShipHawk utilizes AI to optimize packaging and delivery of products.

- Shippo provides a delivery local rating system. Their system is able to operate even when carrier APIs are down.

Services Features

This section highlights the only service features of startups in this category. Here are some examples.

Unique Service Features

This section highlights the unique service features of startups in this category. Here are some examples.

- Huboo utilizes micro-warehouses to quickly fulfill orders.
- Outerspace provides light manufacturing/customization services, office spaces for users and photography/content production services.
- Cubyn provides a delivery guarantee where users are refunded if deliveries aren't on time or are damaged.
- Emiza provides refurbishing services for customer products.
- aCommerce provides a variety of consulting services including strategy consulting, outsourced store operations and more.
- aCommerce and MyCloudFulfillment provides outsourced customer service operations.

Marketplace

This section highlights startups that provide marketplaces. Here are some examples.

- AfterShip enables users to start their own dropshipping business on Shopify. Users can select from a variety of dropshipping products, set prices, edit listings and more. They also provide an ecommerce platform that enables users to build their own marketplace.
- aCommerce helps users set up their own marketplaces.

Marketing/Advertising Services

This section highlights startups that provide marketing and advertising services. Here are some examples.

- AfterShip provides advertising/marketing solutions for Shopify, this includes mobile/email marketing, website pop ups/banners, coupon management, ads management, customizable ad campaigns, referral marketing tools, customer review management and more.
- aCommerce provides marketing/branding consulting including website development.
- ShipMonk takes pictures of products as they're packed and if it's a new SKU.

Finance Services

This section highlights startups that provide financial services. Here are some examples.

- ShipMonk, Shiprocket, Shippit and Floship provide shipping insurance.

Use Case

This section highlights who are the target customers of startups in this category. Majority of startups are building products that cater to the industries below. There are a handful of specific use cases that exist but are not worth mentioning.

Ecommerce

This section highlights all the startups that focus on ecommerce brands. Majority of fulfillment startups focus on catering to big and small ecommerce companies.

- Anchanto, Shippo, Skydropx, Passport, Fuse Inventory, Everstox, Hive, MyCloudFulfillment, Unicommerce eSolutions, Shiprocket, Deliverr, Bolt, Huboo, Pandion, Sendcloud, OneRail, Outerspace, Pickrr Technologies, Istore Isend, Locad, ShipBob, ShipHero, Bringg, Airhouse, Selery, FlavorCloud, AfterShip, Sorted Group, Logiwa, Swyft, Cubyn, ShipMonk, ShipMonk, Shippit, EasyPost, WareIQ, Floship, Emiza, Easyship, Veeqo, aCommerce

SMB

This section highlights startups that focus on smaller businesses and have an omnichannel fulfillment approach. These companies aren't looking specifically to support only ecommerce. Many are simply helping smaller companies outsource their delivery and inventory management.

- Fuse Inventory, Everstox, OneRail, Outerspace, Pickrr Technologies, Bringg, Flextock, Fountain9, AfterShip, Logiwa, aCommerce

Enterprise

This section highlights startups that focus more on larger scale enterprises. They have built the system necessary to manage large complex operations in many regions.

- Everstox, OneRail, ShipHawk, Fountain9, aCommerce

Specialty

This section highlights startups that provide fulfillment services to speciality industries. This includes food, perishables, healthcare, industrial, etc.

- OneRail, ARTA, Perishable Shipping Solutions

Logistic Companies

This section highlights startups that focus on catering to logistic companies. Most of these startups are providing inventory and warehousing software.

- OneRail, Bringg, Logiwa

Transportation Management System

Category Definition: The TMS category highlights the top startups that provide software that help companies manage the end-to-end delivery process. These startups provide many of the same software products as startups do in the fulfillment, analytics, delivery marketplace and fleet management categories. The following content will breakdown the function, features and use cases of every startup recognized to showcase how they differentiate.

*Note: This category was completely changed so I did not color code this category as it wouldn't make much sense.

Important Updates:

Startups in this category offer many software modules that replicate software offered by startups from the other categories within this report. The primary customers are either shippers or delivery providers, of which startups try to offer all the necessary tools to manage the end-to-end delivery process for both customers. Most of these companies are able to aggregate a variety of data feeds and services to help users optimize delivery/orders.

A noticeable feature in this category in comparison to the rest of the categories in this report, is that many provide customizable workflows and process automation tools. As seen in the feature section below, there are a number of processes startups utilize AI to optimize and there are multiple ways companies help customize/build workflow (templates, RPA, drag and drop, etc). Another noticeable feature is the number of financial tools provided by startups in this category, also seen in the feature section.

Function

This section highlights the primary software function of startups within this category, additional logistic software addons and how data is created.

Primary Function

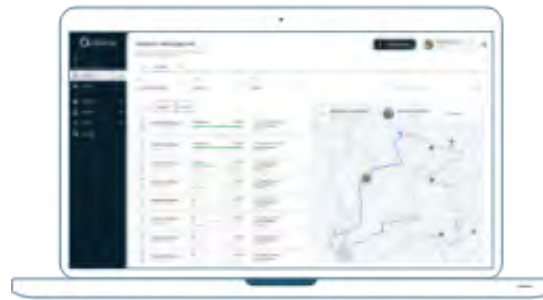
This section highlights the primary software function of startups within this category. Here are some examples.

General Transportation Management

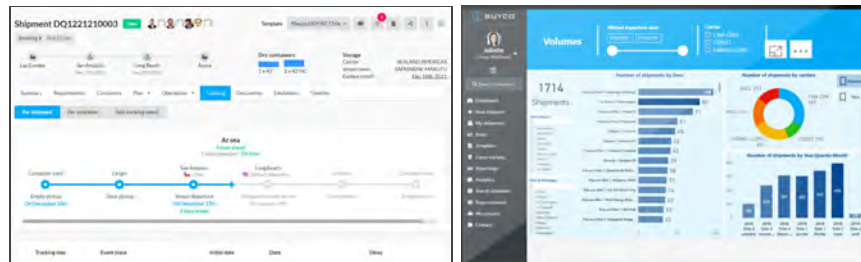
This section highlights startups that provide a variety of tools that help many different types of companies manage their transportation/shipping needs. Here are some examples.

- Quincus provides a centralized platform that helps users manage all supply chain operations. Modules of their platform includes:
 - Admin tools that enable users to set user access, create templates/workflows and more.
 - Dispatch management that automates/optimizes multiple shipments, service levels, driver schedules, vehicles, and sorting schedules.
 - Order management that enables users to manage orders via API, Bulk Upload, Individual Upload, OCR or through payment provider integration.

- Driver tools that can correct, verify, and validate addresses automatically. They provide drivers with an app to manage route, notifications, capture delivery information, scan labels and more.
- Fleet management tools that can optimize schedules, routes, and multi-mile allocations of trucks, trains, and aircrafts using point-to-point or mixed models.
- Pricing management tools that enable users to change commissions, discounts, tariffs, rules, etc.
- Shipment tracking that enables users to monitor shipments across the supply chain and manage any events.

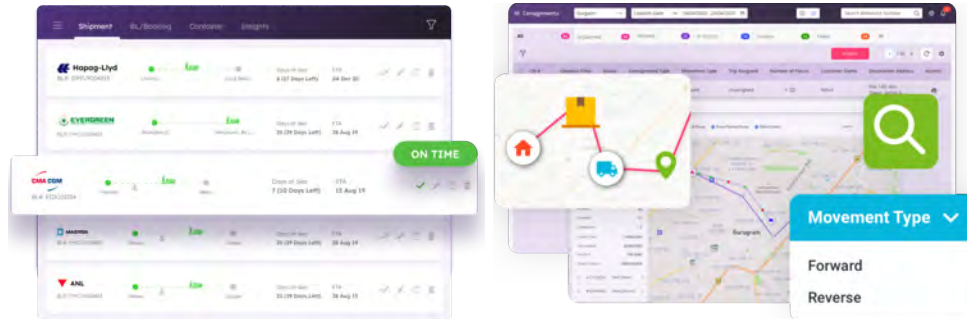


- BuyCo's platform helps users manage ocean freight. Their platform connects 97% of all ocean carriers to simplify, secure, and automate daily shipping tasks. Modules of their platform includes:
 - Container track & trace tools that enable users to monitor container shipments from onsite to delivery.
 - Collaboration tools that enable users to share data/documents, track shipments/insights, assign tasks, communicate with customers and more.
 - Marketplace that enables users to view carrier prices/routes, make bookings, manage instructions and automate the entire process.
 - Document management tools that enable users to send/share/request documents from team/customers/partners. Users can create/automate document workflows.
 - Dashboard to visualize shipment analytics/reports, including shipment lifecycle, partner/team performance, tasks/KPIs and more.

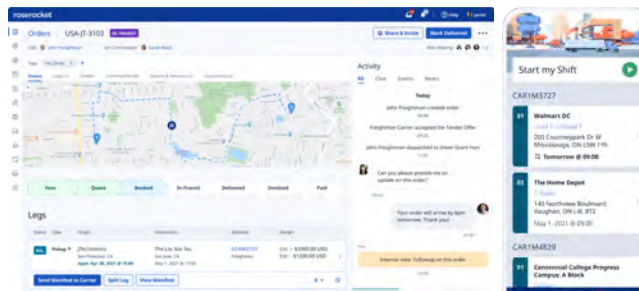


- Shippy provides a platform that enables users to optimize, automate and track end-to-end supply chains. Modules of their platform includes:
 - Freight procurement platform that enables users to create RFQ plans, compare rates, send RFQ to multiple vendors, manage negotiation, analyze process/market rates and more.
 - Shipment tracking solutions that enable users to track all container movements, share reports with multiple partners/clients, analyze shipment trends/performance, and more.
 - Delivery & fleet management tools that enable users to optimize capacity of fleet, plan routes, upload trip information, update customers with shipment status, allocate orders, generate labels and more.

- Inventory management tools that enable users to sort shipments based on destination, create bags, identify missing shipments, manage loading/unloading, mobile app to scan shipments, identify issues in delivery and more.
- Last mile delivery tools that include driver/consumer app, payment acceptance, cash reconciliation, driver gamification features, customer communication and more.

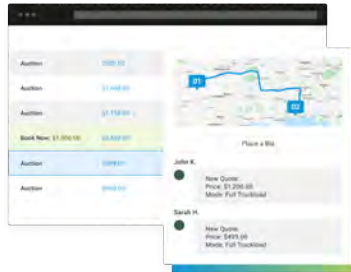


- Rose Rocket provides a transportation management solution that supports the trucking business. Modules of their platform includes:
 - Booking platform that enables customers to generate delivery orders themselves. This includes a quoting engine and freight marketplace.
 - Dispatch solutions that include automatically assigning drivers and creating tasks. They also provide a mobile app for drivers to review tasks, schedules and be reimbursed for fuel.
 - Shipment tracking through ELD, driver mobile app or other means that can be viewed by customers and partners.
 - Document management tools that enable all stakeholders to upload/track documents related to all shipments.
 - Analytics dashboard to view shipment financial trends, driver schedules/costs, and operation performance



- Pando provides a freight automation platform. Modules of their solution includes:
 - Shipment visibility tools that enable users to manage shipments and notify stakeholders. Their platform tracks products from an SKU level, provides 3D visualization of materials, and provides shipment analytics.
 - Transportation management tools that provide dispatch/load planning, route/coste/SLA/load optimization and collaboration tools to communicate and share documents.
 - Audit/payment tools that include proof-of-delivery, customer feedback tools, digitize invoices, reconcile invoices/documents, audit payments and more.
 - Dashboard to view all operations, create autonomous workflows, view insights/trends, and more.
- Shipwell provides a transportation management platform, visibility solutions and a carrier network. Modules of their ecosystem includes:

- Shipment planning tools that enable users to aggregate orders, allow suppliers/customers to generate orders directly on their platform, tools to automate load/mode plans, tools to monitor carrier/lane performance, tools to predict prices and more.
- Automation tools that enable users to create workflows for tendering/billing/invoicing/settlement, create/optimize routes, manage alerts/triggers/communication and more.
- Dashboard that provides real-time shipment data for customers. This includes shipment alerts and tracing links for other stakeholders.



- Turvo provides an end-to-end supply chain management solution. Modules of their platform includes:
 - Inventory management tools that aggregate data across all systems for a unified view of inventory. Users can analyze SKU levels across regions, manage costs, monitor expiring lots, manage product catalog/quantities, share data with suppliers and more.
 - Order management tools that enable users to configure shipment phases, lock orders, adjust orders remotely for exceptions, review/select carriers, track/trace orders, share data to partners and more.
 - Shipment tracking that includes order tracking, partner data/document sharing, messaging/collaboration tools and more.
 - Appointment scheduling that includes all data for each shipment, truck status, arrival/departure status, self-service appointment booking, tools to share schedules with partners, and more.
 - Analytics dashboard that helps users generate insights on entire operations and partners.
 - Driver applications that provide drivers with updates, tasks, document management, routes, track status and more.



What's Important

Most companies provide software modules that overlap with many of the categories within this report including fleet management, fulfillment, analytics, asset tracking, delivery marketplaces and more. Some startups seem focused on supporting logistics companies with their operations, while others focus on helping shippers coordinate/manage all of their shipments. Startups focused on the later typically include additional modules like booking capabilities, document/data management, last mile delivery management and more.

A primary feature offered by most startups in this section includes providing templates or workflow building tools that enable users to customize different software modules. A handful of companies build automation within different processes.

Delivery Management

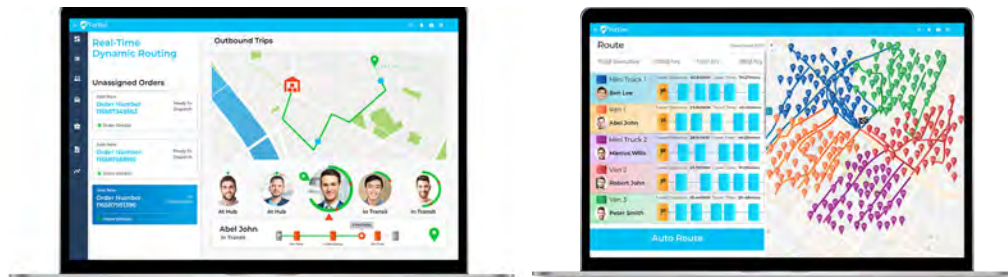
This section primarily focuses on startups that help businesses deliver products. This section combines fleet management with fulfillment. Here are some examples.

- Project44 provides an advanced shipment visibility platform that enables users to track inventory through its entire journey, automate processes throughout shipment lifecycle, generate insights about processes, and collaborate with supply chain stakeholders. Modules of their platform includes:
 - Multiple methods to track inventory for truckload, LTL, volume LTL and groupage, ocean, rail, air, parcel, and final mile.
 - Multiple API services that automate different parts of the shipment lifecycle including rating/booking, routing/transit time/scheduling, tender/dispatch, event management and more.
 - Tools that enable users to integrate data, analytics and workflow automations to other applications.

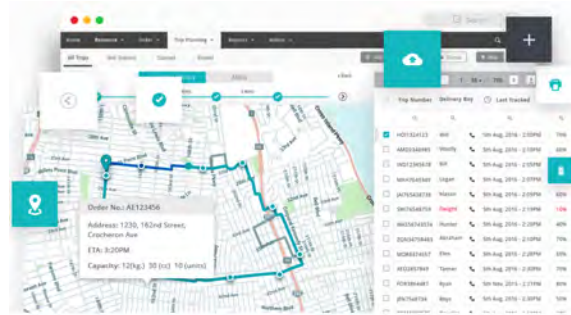


- 7bridges provides an AI logistics platform that integrates various users data inputs, utilizes AI to identify areas of improvement across the inventory life cycle and can automate recommendations that will improve operations. Modules of their platform includes:
 - Fulfillment solutions that enable customers to select from a variety of shipment options based on availability and stock location.
 - Order management that automatically selects the best dispatch site, route and carrier for the shipment. Their solution can automate selecting a carrier, generating labels and completing cross-border documentation. Their platform can also notify warehouse teams the appropriate packing process.
 - Dispatch management that enables users to visualize dispatch performance metrics across different sites and suppliers.
 - Ordering tracking across carriers through branded tracking pages.
 - Return module that automatically selects the optimum carrier, route and destination, and generates all the required documentation.
 - Invoice management and monitoring.
 - Dashboard to view performance and insights across all modules.
 - Carrier network to identify carriers that provide the best services.

- Beacon provides an end-to-end shipment visibility platform, freight forwarding service and supplier payments platform. Modules of their platform includes:
 - Dashboard to visualize all shipments including order status/alerts, benchmark vendor performance, generate order predictions and more.
 - Marketplace to select freight services in all modes of transport and the ability to track shipments.
 - Payment and lending tools that help users pay their suppliers.
- Clockwork Logistics Systems provides a delivery management platform. Modules of their solution includes:
 - Delivery tools that automates driver selection, optimizes routes/loads, provides driver apps and more.
 - Dashboard to visualize carrier network and orchestrate delivery needs.
 - Customer portal to request shipments.
 - Financial tools to pay for services, benchmark carriers, audit invoices and more.
- FarEye provides a low/no code delivery management platform. Users can visually create delivery workflows and their platform will optimize routes/scheduling. Modules of their platform includes:
 - Last mile delivery tools that include automatic order allocation/dispatching/routing, customer chat support, delivery tracking and more.
 - Logistic visibility solutions that enable users to track inventory anywhere, predict ETA, receive chat bot updates, customize alerts and more.
 - Fulfillment solution for ecommerce platforms. Users can book deliveries, track orders, communicate with drivers, and more.



- LogiNext provides a logistic and field service management solution. Modules of their platform includes:
 - Last mile delivery solutions that automates route planning/optimization, resource allocation, cash/proof of delivery tools, delivery associate manager and real time tracking.
 - Field management tools that optimizes tasks by priority, provides alerts/heat maps, automates invoicing/reimbursements, provides POS tools and more.
 - Fleet management tools that monitors fleets/shipments, optimizes routes/capacity/costs, automates assignments and more. This includes warehouse management tools to manage hub loads for drivers.
 - On-demand delivery services that support bottlenecks in users' SLAs.
 - Return management tools that automates routing, capacity, delivery destinations for all return items.



What's Important

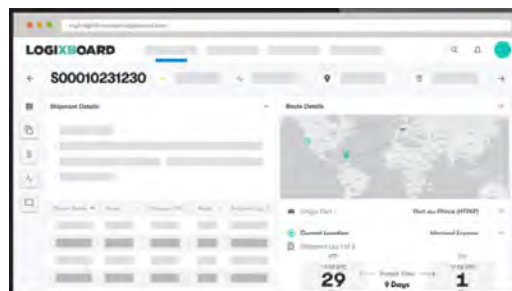
Most companies within this category provide all the necessary tools to manage orders and last mile deliveries. For most companies this includes order/return management and fulfillment tools. Some companies include delivery marketplaces and fleet management tools.

There are some interesting features offered by startups in this section. A handful provide financial tools/services and some provide field management software. We're also seeing similar features mentioned in the section above, template/workflow builders and AI process optimization.

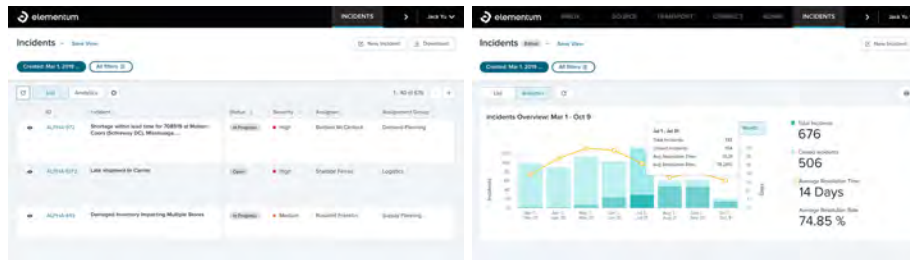
Service Management

This section highlights startups that provide tools that help users manage shipment issues, customer communication and track deliveries. Here are some examples.

- Logixboard provides a white-label logistics service management platform. Modules of their platform includes:
 - Dashboard that provides real-time shipment data for customers. This includes shipment alerts and tracing links for other stakeholders.
 - Central messaging platform that enables users to communicate with customers, answer questions and share shipment updates.
 - Document management tools that enable users/customers to upload documents.
 - Accounting tools that provide audit reports and financial analytics to users.



- Elementum provides a service management solution for supply chains. Modules of their platform includes:
 - Incident management tools that make it simple for a team to link incidents to specific parts of the supply chain, centralize the issue to a single dashboard, tools to collaborate/assign tasks to team members, and analytics tools to identify root cause of issue.
 - Task management tools that enable users to assign individuals tasks, track deadlines and analyze team performance.
 - Analytics dashboard to visualize team performance, root cause and recurring gaps.

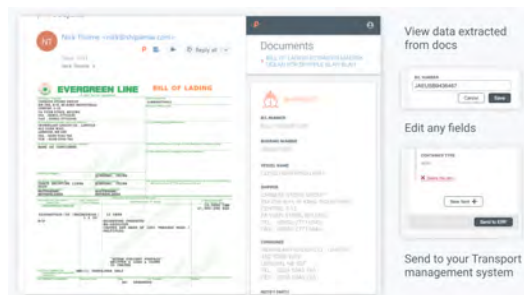


- Tracelink's platform helps users capture, analyze, resolve and prevent supply chain issues. Modules of their platform includes:
 - Logistics analytics tools that consolidates, analyzes, and optimizes overall global transportation transactions to orchestrate logistic processes, track status, and monitor environmental conditions.
 - Variety of compliance applications that help users meet track/trace compliance requirements across a variety of countries, industries, etc.
 - Issue management dashboard that enables to drill down individual incidents, assign team members, utilize incident templates, create performance score cards, perform root cause analysis and more.

Document Management

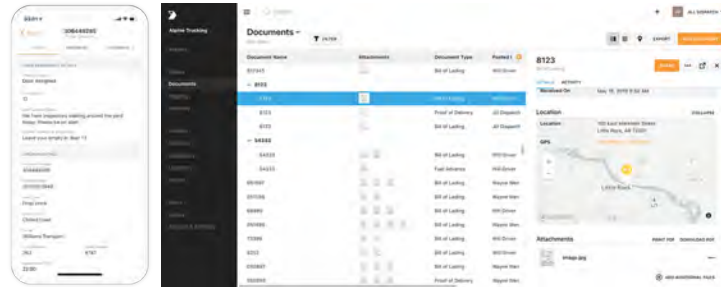
This section highlights startups that help companies share documents and tasks among each other. Here are some examples.

- Vector.ai analyzes document and email data to generate insights and digitize/automate tasks. Their platform automatically analyzes Ocean Bills of Lading, Master Bills, invoices, etc to generate insights, highlight need to know information, identify errors, match payments, and create shipments/payables.
- Shipamax analyzes documents to generate insights and digitize/automate tasks. With their platform users can automate invoice reconciliation, populate customs declarations, create import jobs and triage master bill management for exports.



- Vector provides contactless pickup/delivery document management and workflow tools for truckers. Modules of their platform includes:
 - Electronic bill of lading that allows drivers to check into facility with their phone/ID, automatically ingest BOL after trailer is full, driver then checks out and completes any additional shipment workflows.
 - Mobile app that enables users to take pictures and digitize all shipment paperwork. This paperwork can be geotagged, routed to specific stakeholders, access/search documents offline and more.
 - Driver payment tools that enable simple inspection, workflows to manage exceptions, tools to report accidents, track unplanned pickups, log detention, refer new drivers, reimburse drivers and more.

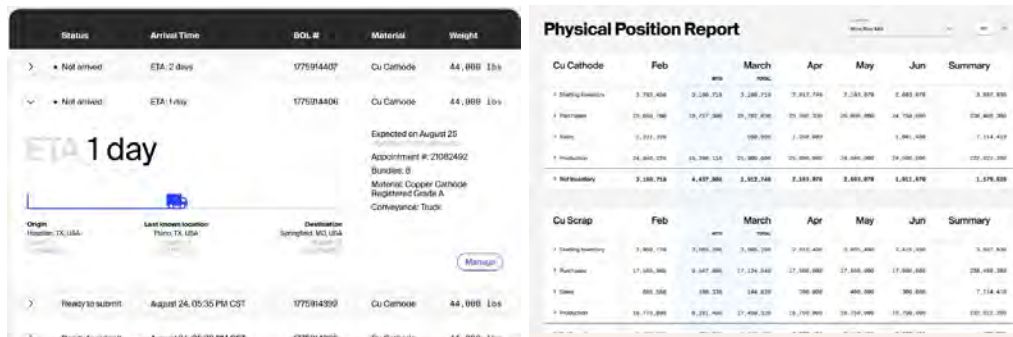
- Additional tools include tools to turn on/off workflows, scan barcodes, auto-calculate costs and more.



Product Management

This section highlights startups that help businesses manage product shipments. Here are some examples.

- Waybridge's platform helps users manage and monitor raw material delivery/location across their supply chain. Modules include digital contracting, delivery scheduling, shipment tracking, position management and more.



Data Platform

This section highlights startups that provide tools to connect supply chain data to different stakeholders or systems. Here are some examples.

- Chain.io's platform enables users to integrate different supply chain data systems together. Their platform is able to decipher supply chain information like issuing purchase orders, sending shipment notifications, or receiving at a warehouse. They then can push the appropriate data formats to different legacy/enterprise/software systems.



Software Add-ons

This section highlights the type of modules/software startups in this section include with their software/services. Here are some examples.

- Inventory/Warehouse Management
 - Project44 enables users to monitor inventory at SKU level, track shipments and monitor stock levels.

- 7bridges provides an interface that guides warehouse staff through the packing process. They also help users monitor inventory levels to identify ideal fulfillment locations and predict/monitor stock outs.
- Beacon helps users refine order quantities based on insights generated from route, carrier, and supplier.
- Waybridge helps users build reports on inventory position.
- Shippy provides inventory management tools that enable users to sort shipments based on destination, create bags, identify missing shipments, manage loading/unloading, mobile app to scan shipments, identify issues in delivery and more.
- LogiNext helps users prepare/allocate inventory within hub locations for drivers.
- Pando provides 3D visualizations of how materials are placed within vehicles/containers in shipments.
- Turvo provides inventory management tools that aggregate data across all systems for a unified view of inventory. Users can analyze SKU levels across regions, manage costs, monitor expiring lots, manage product catalog/quantities, share data with suppliers and more.
- Financial/Accounting Management
 - 7bridges aggregates invoice data, monitors for unexplained charges and manages disputes.
 - Beacon provides a variety of payment solutions including tools to make payments globally, invoice factoring and supplier financial audits.
 - Quincus provides a pricing dashboard that enables users to manage all delivery prices, taxes, destinations, currency exchanges, etc.
 - Vector.ai analyzes invoices/bills to manage payments, shipments, post invoice processes, errors and more.
 - Pando and Clockwork Logistics Systems provide payment solutions and help users audit invoices.
 - Logixboard provides accounting tools that enable users to audit and analyze finances.
 - Fareye provides mobile wallet integration to help operate cash for drivers.
 - Loginext provides financing, payments, POS and cash on delivery solutions for field service workforce.
 - Kuebix and Turvo help manage/record/audit invoices, inquiries/contract negotiation, reconciliation and accounting.
 - Kuebix helps users manage insurance and insurance claims.
- Freight Marketplace
 - Project44 provides a quoting/booking platform that enables users to invite their own 3PLs/carriers. Shippers can integrate their capacity/rates into the system, shippers can select the best price/transit time/service that meets their needs, and users can monitor shipments through their platform.
 - 7bridges provides a carrier marketplace that enables users to identify the best carriers for their jobs. They also help users renegotiate existing carrier rates.
 - BuyCo provides a freight marketplace that covers 97% of carriers. Users can make bookings directly from their platform and automate the booking process.
 - Shippy provides a freight procurement marketplace that enables users to identify rates and send RFQs.
 - FarEye and Clockwork Logistics Systems provide a white label solution that enables their users to request delivery services from a variety of carriers.
 - Turvo and Shipwell provide a marketplace that enables users to broadcast their shipping needs to a trusted network of carriers.
- Fleet Management

- Turvo, Shipwell, LogiNext, Rose Rocket, Shipy and FarEye provide route optimization, scheduling, address verification, and driver application.
- Fareye optimizes fleet allocation. Some create driver expense/pay reports and live tracking.
- Project44 enables 3PLs to upload their own truck data and receive insights on their performance relative to peers, how to book better rates/capacity and more.
- Quincus provides a logistic engine that optimizes routes, transportation modes, cost, etc. They also provide drivers with an app that routes them to proper locations, verifies addresses, manage notifications, capture delivery information, scan labels and more.
- Vendor/Supplier Management
 - Project44 provides supplier visibility solutions that enables both buyers/suppliers to share data on inventory movement. This enables them to manage prepaid freight, manage suppliers, track shipments related to suppliers, manage resources and more.
 - Kuebix tracks suppliers and manages procurement.
- Compliance
 - Tracelink provides financial risk assessment, user requirements specification, certification, country specific compliance and more.
 - Kuebix helps with compliance and customs management.
- Fulfillment
 - LogiNext, FarEye and 7bridges enable users to offer their customers multiple fulfillment options based on the real-time availability and the location of their stock.
 - Shipy provides inventory sorting solutions based on delivery locations and fleet capacity.
- Yard Management
 - Project44 provides a yard management platform that includes enterprise slot booking, predictive ETA, prescriptive analytics, real time location tracking, gate and loading dock management, task management, driver management and more.
 - Turvo provides dock scheduling management solutions that automate appointment booking and management.
 - Kuebix helps you manage trailers in the yard to support warehouse operations.
- Asset Tracking
 - Project44 integrates with 700+ ELD/telematic providers. They also provide CO2 and temperature monitoring.
 - BuyCo provides container track and trace solutions.
- Analytics
 - Turvo, Shipwell, Pando, Rose Rocket, BuyCo, FarEye and Quincus provide a dashboard that enables users to track shipments through the supply chain.
 - Project44 provides a dashboard that enables users to visualize inventory life cycle through the supply chain. They provide insights on carrier performance, identify risks/trends, and more.
 - 7bridges provides a dashboard that helps users gather insights from across their logistics network, standardize the data and offers an overview of supplier performance.
- Return Management
 - 7bridges provides solutions that enable customers to process and track returns. They also help retailers identify best locations for returned items.
 - LogiNext provides return management software that helps automate routing, planning, delivery, tasks for returns.

What's Important

As mentioned above, many of the startups in this category offer software products that overlap with many of the industry categories within this report. What's interesting is seeing the number of financial software products provided by startups within this space. Most are to manage payments or to audit finances.

Data Creation

This section looks at how data is created/collected by startups in this category. Here are some examples.

Internal

- TraceLink, Turvo, Shipwell, Chain.io, Pando, LogiNext, Shipamax, Rose Rocket, Shipy, BuyCo, Logixboard, Quincus, Beacon and 7bridges utilize connections to various internal enterprise systems to manage/monitor shipment data.
- Project44 integrations with more than 57 TMS, OMS, WMS, and ERP systems to aggregate system data.
- Vector.ai collects data from internal documents and emails.
- Fareye connect their own assets and partnerships into their control tower. They provide a driver application to map your own operations and issue tasks. In addition, you can connect your customer support, operations, IT and various other data sources.
- Turvo pulls data from shipment documentation, email/messaging and any other internal documentation to keep track of flow.
- Elementum pulls data from ERP solutions, including inventory and billing.
- Carriers
 - TraceLink, Turvo, Shipwell, Shipy, BuyCo, FarEye, 7bridges and Beacon connect to a large variety of logistic service providers to access services/data.
 - Project44 built partnerships with over 4M drivers and 3M assets. They also utilize historical shipment data from almost 3M shipments. Carriers can also upload data about their capacity, prices, routes and more.
- App
 - Turvo, Vector, Shipwell, LogiNext, Rose Rocket and Shipy provide a mobile application for drivers to upload information of delivery, track their progress, manage tasks and interface with customers.
 - Project44 provides a mobile application for drivers that enables shippers to monitor their shipments.
 - BuyCo provides a mobile application that enables users to record events and status of containers on site.
- User Input
 - Turvo, LogiNext, Rose Rocket and 7bridges provide white-label applications that enable user's customers to select delivery options for their orders/returns.
 - Chain.io enables users to email documents/data to their company email and it can extract the appropriate data.
- Partners
 - Elementum unifies suppliers and manufacturers.
 - Project44 integrates directly with 700+ ELD/telematic providers.
 - Shipwell partners with ELD, brokers and financial software companies.
- External
 - Project44 utilizes local weather and road regulations, driver hours of service, dock hours, and more.

What's Important

It's pretty straightforward how these companies collect data. Most of them provide the ability to connect to any system, internal and external, and carriers. This allows their platform to coordinate with all stakeholders and optimize delivery processes. There are a handful of companies that provide driver applications that enable drivers to manage tasks/upload data.

Feature

This section highlights the software and service features of startups within this category. Below is the breakdown.

Software Features

This section highlights the only software features of startups in this category. Here are some examples.

Process Control

This section highlights how startups enable users to customize/edit/manage workflows. Here are some examples.

- Fareye helps create custom logistics/supply chain processes with drag and drop features. The platform gives the utility to write a program on individual steps as a process to take decisions, define the step and run the script as part of the process.
- Shipwell lets you customize your pricing for every shipper and carrier.
- Project44 aggregates data from internal/external resources and carriers, provides a dashboard to visualize inventory flow and provides a number of APIs and applications users can select to automate different workflows across their supply chain.
- 7bridges aggregates data from various sources and helps automate/optimize shipment processes by balancing numerous variables in real-time, such as business constraints, operational capacity, available inventory by site, carrier prices and performance, estimated shipment times, the risk of external disruptions and environmental impact.
- Quincus provides an admin panel that enables users to build templates, create rules and manage users.
- BuyCo enables users to automate the booking process and document management workflows.
- Pando and Shipy enable users to create automated workflows across their applications to streamline specific tasks.
- Shipwell enables users to create automated workflows across their applications to streamline specific tasks. Users can configure business rules and thresholds to manage processes by exception.
- TraceLink's platform enables users to create business rules, workflows, and API integrations to manage interactions across multiple applications, processes, and stakeholders. They also create an ecosystem where users can share workflows/applications with other users.

What's Important

The biggest software feature we've noticed in this category are startups providing RPA tools, templates and ways to easily create/customize different workflows - based on data integrated from a variety of locations. This is a common trend we're seeing across most enterprise management software.

Automation

This section highlights the different types of processes startups provide automation for. Here are some examples.

- ETA/Performance:

- Project44, 7bridges, FarEye, Waybridge, BuyCo, Shipy, Rose Rocket, LogiNext, Pando, Shipwell, Turvo
- Dispatch/Routing:
 - Project44, 7bridges, Quincus, Clockwork Logistics Systems, FarEye, Shipy, Turvo, Rose Rocket, LogiNext, Pando, Shipwell
- Carrier Matching:
 - Project44, 7bridges, Clockwork Logistics Systems, FarEye, BuyCo, Shipy, Shipwell, Turvo
- Event Management:
 - Project44, Quincus, FarEye, BuyCo, Shipy, Elementum, LogiNext, Pando, Shipwell, Turvo
- Pricing/Quoting:
 - Project44, 7bridges, Vector.ai, Shipwell, BuyCo, Shipy
- Document Management:
 - Project44, 7bridges, Vector.ai, Shipamax, LogiNext, Pando, Turvo
- Sorting/Packaging:
 - 7bridges, Shipy, LogiNext, Pando, Turvo
- Inventory Management:
 - Project44, 7bridges, Elementum, Shipy, Turvo
- Returns:
 - 7bridges, LogiNext

What's Important

Another big trend among startups in this category is their use of automation across a variety of processes. Most of them focus on delivery management, while there are a handful of companies that provide tools for unique applications like packaging and document management.

Unique Software Features

This section highlights the unique software features of startups in this category. Here are some examples.

- BuyCo, FarEye, 7bridges and Beacon calculate environmental impact into all shipment predictions and recommendations.
- Chain.io's platform can horizontally scale infrastructure to handle any data load.
- Shipy provides a machine learning geocoding engine that helps users create precise/accurate latitude/longitude coordinates for addresses.
- Pando provides 3D visualizations of materials within containers/vehicles over different modes of transport.

Benchmark

This section highlights startups that help users benchmark delivery service provider performance. Here are some examples.

- Turvo, BuyCo, Project44 and Shipwell provide carrier performance analytics.
- 7bridges helps users monitor carrier performance and prices to benchmark/renege rates.

White-Label

This section highlights startups that white-label their application. Here are some examples.

- 7bridges and FarEye provide white label interface that enables users to make delivery orders, monitor shipments, process returns and more.
- Rose Rocket and Shipwell offer a whitelabel customer booking and tracking application.

- Shippy and Logixboard provide a white-label platform for users to share shipment data to customers.

Service Features:

This section highlights the only service features of startups in this category. Here are some examples.

Unique Services

This section highlights the unique service features of startups in this category. Here are some examples.

- Project44 provides a money back guarantee if less than 90% of shippers contracted carriers aren't operating in the first 30 days. They also have a preferred carrier/telematics program that highlights shippers that provide visibility/data of their trucks and has high performance. They send these shippers more business and perks.
- LogiNext provides on-demand shipment services that can fulfill orders for platforms if delivery companies are unable to fulfill orders that meet their SLAs.
- TraceLink provides an online university that trains users on compliance issues and their platform.
- Chain.io provides a variety of optional services including mapping business processes, identifying technology requirements, and monitoring data quality.
- Beacon provides financial services that enable users to make payments to suppliers globally. They also provide lending services to users.

Use Case

This section highlights who are the target customers of startups in this category. Majority of startups are building products that cater to the industries below. There are a handful of specific use cases that exist but are not worth mentioning.

For Retailers/Shippers

This section highlights all the startups that focus on supporting shippers delivery needs. These typically tend to be retailers or large brands. Software is more focused on last mile delivery, order management and inventory fulfillment.

- Project44, 7bridges, Beacon, Clockwork Logistics Systems, FarEye, Shippy, LogiNext, Shipwell, Turvo, Elementum, Chain.io

For Carriers

This section highlights all the startups that focus on supporting delivery providers. These companies tend to provide more fleet management and driver applications.

- 7bridges, Project44, Beacon, Clockwork Logistics Systems, FarEye, Waybridge, Shippy, Shipwell - mostly integration for jobs.
- Turvo, Quincus, Vector.ai, Logixboard, Chain.io
- Vector, Rose Rocket focused on trucking
- BuyCo for vessels

Industrial/Manufacturing

This section highlights a select few startups whose platform is built for industrial companies. Different modules of their platform and network of delivery services tend to help users manage industrial related shipments.

- Waybridge
- TraceLink pharma

Robotics Logistics

Category Definition: This category looks at logistics startups that are automating supply chain processes with robotics. These are startups using hardware solutions to automate physical processes. The following content will breakdown the function, features and use cases of every startup recognized to showcase how they differentiate.

Important Updates:

We previously mentioned that humans are gradually being pushed to sorting stations - and still are. But we are also seeing a rising trend of completely autonomous fulfillment centers. A select few companies in the US, Asia and Europe have raised a significant amount of financing. You can expect these companies to continue to grow as they acquire more warehouse space.

We are still seeing robotic arms enhance or replace humans in sorting stations. Although, not many companies utilize advanced conveyor belts.

What has continued to improve are startups deployment time and versatility of robotics.

Finally, we're seeing mixed signals from outdoor robotics. Sidewalk startups seem to be finding success, while some have closed. Those making deliveries directly on roads have limited/no commercial deployments. You may have to wait for tech in the automotive industry to improve before it can be applied to last mile deliveries.

Function

This section highlights the primary robotic function of startups within this category and their business models. Here are some examples.

Warehouse Robotics

This section highlights startups that provide robotics that typically move stock around a warehouse. Here are some examples.

- Geek+ created various autonomous robots that can pick up shelves and guide them to sorting stations or just to move shelves around the warehouses. Different robots include:
 - Multiple-model moving/picking robots, with maximum load of 1200kg.
 - Sorting robots that can move containers around shelves. They have other models that can sort multiple containers at the same time.
 - Picking robots that can help workers easily find and pick products from shelves.
 - Forklift robots that can lift larger pallets and move them around the warehouse.
 - All robots have multi-sensors (camera, lidar, safety sensors, etc) for perception, localization and navigation.



- GreyOrange provides a variety of floor robots that can pick up shelves and move parcels around the warehouse (up to 1000kg). They also provide a robot that has a conveyor belt on top to easily pick up and move packages themselves. Each of their robots have different attachments to easily handle different types of packages.



- Invia Robotics provides an autonomous floor robot that can grab/put away small compartments on shelves or bring them to sorting stations. They also provide an AI powered warehouse management solution that directs people/robots and orchestrates workflows. They provide a subscription service that includes robots, management software and 24/7 support.



- Locus Robotics provides an autonomous floor robot that is made to support workers within warehouses. Their platform can help workers locate, pick, transport and more. Other modules of their platform includes:
 - Mobile app that helps workers interface with their robots.
 - Dashboard to view warehouse operations.
 - Server that interfaces with robotics and existing enterprise systems.



- Otto Motors provides floor robots that can scale in size to carry small to large loads (up to 1900kg). Their robots include addons to carry shelves/carts/crates, a conveyor belt and lift. They also include a fleet management system to optimize robot/material movements and robot care services.



- IAM Robotics is an autonomous floor robot that can move a range of light to heavy materials (300kg). They also can install standard/custom modules on top of their mobile robot.



- Scallog built a floor robot that can lift and transport shelves (up to 600kg) of products from their storage location to the order picking stations. They also provide warehouse management, picking stations and shelves that their robots can pick up.



- ForwardX Robotics provides a variety of modular, autonomous robots that can help users move products around their warehouse. Their robots range in their ability to manage payload capacity (2645lbs). Their robots include a number of attachments to easily move different products and some include a tablet interface. They also provide fleet management software that helps users manage robot operations around the warehouse.



- HAI Robotics provides a variety of floor robots that offer picking/handling, autonomous navigation, active obstacle avoidance, and autonomous charging. This robot has the ability to pull/place packages directly from shelves around the warehouse.



- Syrius Robotics provides a variety of autonomous, modular, warehouse robotics as a service.



- Gideon Brothers provides autonomous robots equipped with accessories including a pallet stand and handling station. Their robot can lift up to 1000kg.



- Fetch Robotics built floor robots that can carry small products, shelves and even large pallets. They have added attachments like shelves and conveyor belts. They also provide a scanner that can track inventory.



- 6 Rivers provides a floor robot that can be configured in many ways to hold large, small or medium boxes, this includes hangers and multiple shelves.



- Canvas Technology built a robotic industrial cart.



What's Important

This was the biggest section within the robotics industry. Most companies provide a variety of ground robots that increasingly provide more ways to pick and move packages around warehouses. Many of these companies offer warehouse management solutions in addition to their robot control tower. You're starting to see a handful of companies based out of China that have a large line up of robot solutions.

Sorting Stations

This section highlights startups that provide pack and pick stations that are typically managed by humans. Here are some examples.

- Geek+ provides a robotic picking station that provides a multi-purpose workstation or guided picking, putaway, audit and returns operations station. Their floor robots carry shelves over to/and back from the pick/sort stations. They also have an automated package retrieval system that can lift containers off shelves for sorting stations.



- Scallog provides a station that supports picking, replenishment, inventory reallocation, audit and inventory counting. The station includes a computer station, spotlight and order rack. They also provide warehouse management software, floor robots that can move shelves to picking stations and they provide modular shelves.



- HAI Robotics provides customized workstation solutions, including on-robot picking workstation, on-conveyor picking workstation and on-shelving picking workstation. Their solutions utilize their floor robotics and warehouse management software.



- 6 Rivers provides a multi-purpose workstation or guided picking, putaway, audit and returns operations station. Employees are typically guided by light to sort products.



What's Important

Pick stations were the add on to ground warehouse robotics above. Many are built so that they can receive packages from ground robotics, and a human sorts packages that are assisted with computer vision/light systems. What's interesting to see is the flexibility of how picking stations can be built.

Robotic Arm

This section highlights startups that utilize robotic arms for mostly pick and pack needs. Here are some examples.

- GreyOrange built an automated picking system to replace human work in sorting stations. This robotic picking can pick, process, consolidate, and prepare orders in warehouses.



- Righthand Robotics provides a robotic arm that can be used for picking up products, sorting, kitting, packaging and more. Their picking system combines an intelligent gripper, a vision system, and control software.



- Plus One Robotics provides vision software for robotic arms, robot management software and a robot starter kit that includes a robotic arm equipped with their vision software.
 - Their vision software can understand 2D images, geometric surfaces, includes a simple guide for setup, can connect to any major OEM and more.
 - Robot management software that enables workers to execute robot work virtually.



- Exotec provides a robotic arm able to move solid objects weighing up to 4.4lbs and with a minimum surface of 0.8 x 0.8 inches at a speed of 4.5mph. This solution is a part of their complete warehouse fulfillment solution.



- Dexterity provides full stack robotics and services to help warehouses set up automated robotic arms across their facilities. Their robotic arms can pick, move, pack and collaborate with workers for use cases like singulation, palletization, depalletization and fulfillment. Their robotic software can support any robotic hardware available.



- Osaro provides software that enables industry standard robotic arms to automate the process of accurately seeing, picking, and placing objects.



- Pickle Robot provides robotic arm solutions that unload up to 800 packages per hour and sort up to 500 packages per hour.



- Nimble Robotics provides robotic arms that can pick and pack anything. Their robot can automate picking from goods-to-person systems. Their solution can also sort items from a tote/chute and scan them.



What's Important

This section is unique as there are a handful of robotic arms that are taking a couple different strategic angles. Some are simply building software that is compatible with any robotic arm hardware provider. Others are building their own advanced robotic arms with different perks. For all companies, they focus on providing speed and advanced dexterity. Some robotics are focused on picking/kitting fragile items while others have the ability to lift pallets.

Fulfillment Center

This section highlights startups that are building shelving systems to manage inventory. Here are a few examples.

- Fabric provides full service robotic micro-fulfillment centers. These are operated by a robotics shelving system, ground robotics and people pick and sorting stations. They automatically distribute customer's products across their fulfillment network based on inventory/sales data. They integrate directly to customers' websites and manage the entire fulfillment to delivery process.



- Takeoff provides an automated grocery fulfillment solution. Their end-to-end solution can sit inside retailer stores or dark stores and includes hardware, software, expertise and support to manage all stages of fulfillment: customer UI, assortment, fulfillment, spoke routing, pickup/delivery, and replenishment.



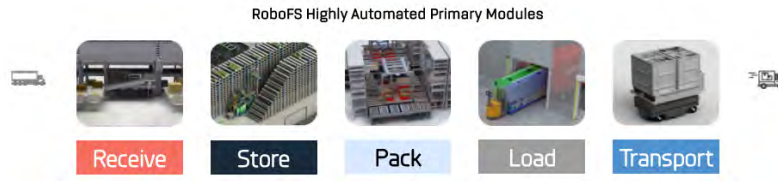
- Exotec provides an end-to-end retail order picking solution. This includes bins, shelving, complete robotic system, picking/sorting stations, robotic arms, floor robots and management solution.

Modules of their platform includes:

- Modular bins and racks that interface with their system.
- Fleets of floor robots that can carry up to 30kg and manage movement of shelves/bins.
- Robotic arm that can move solid objects weighing up to 4.4lbs and with a minimum surface of 0.8 x 0.8 inches at a speed of 4.5mph.
- Order optimization software that manages task planning and tracks and records the positions of bins and robots in real time.
- Picking stations for workers that can move 400 lines per hour. This includes a multi-order bin solution that enables workers to sort/pick bins simultaneously.
- Stock entry/removal solution can move 320 bins per hour.



- Home Delivery Service provides a touchless fulfillment center that automates the end-to-end workflow and even automates pick and pack of items of all shapes and sizes. Their solution is modular and configurable to a wide range of fulfillment center requirements. Features include container tracking, trayset making, tray stacking, tray transport, storage, auto pick and loading.



What's Important

This section highlights the next evolution of warehouse robotics. We've background warehouse robotics combined with pick and pack stations. These companies are taking an even bigger step by removing humans completely from warehouses and providing a completely automated fulfillment process. These startups are raising a significant amount of capital.

Automated Forklift

This section highlights startups that provide robotic forklifts. Here are some examples.

- Seegrid provides a variety of autonomous mobile robots (AMRs) that can perform different tasks. Examples include:
 - Autonomous robot that can lift goods vertically up to six feet for material movement to and from storage, staging areas, and workcells.
 - Autonomous robot that can detect and pick up pallets and bulk containers up to 8,000 lbs.
 - Autonomous robot that can tow multiple payloads up to 10,000 lbs. in one trip for efficient material movement.



- Geek+ created various autonomous robots that can pick up shelves and guide them to sorting stations or just to move shelves around the warehouses. Different robots include:
 - Forklift robots that can lift larger pallets and move them around the warehouse.



- Vecna Robotics provides a variety of autonomous forklifts. Their robots includes:
 - Counterbalanced fork trucks that can move a wider range of payloads and pallet types, lift up to 72", and hand-off goods to conveyor belts, wrappers, and carts.
 - Tow tractor that supports long-distance hauls and heavy payloads.
 - Pallet truck that improves put-away efficiencies for lift operators.



What's Important

This section highlights the next evolution of warehouse robotics. We've background warehouse robotics combined with pick and pack stations. These companies are taking an even bigger step by removing humans completely from warehouses and providing a completely automated fulfillment process. These startups are raising a significant amount of capital.

Outdoor Robotics

This section highlights startups that provide robotic vehicles that move goods outside on city streets. Here are some examples.

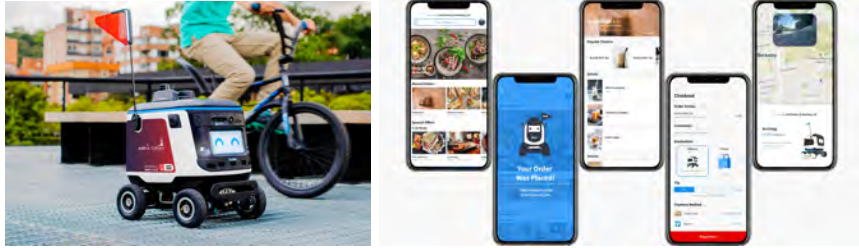
- Nuro built a small, electric, self-driving vehicle that can transport goods. Their robot comes with 360 degree cameras, short/long range radar, Lidar and ultrasonic sensors. Customers can place orders from one of their delivery partners and products are delivered to their location using Nuro robots.



- Starship Technologies provides small, self-driving robots for last mile food and package deliveries. They provide a mobile app that allows users to purchase food from local restaurants.



- Kiwibot provides small, semi-assisted driving robots for last mile food deliveries. Their robot includes cameras, full range lidar and proximity/cliff sensors. They assign supervisors to the kiwibots to provide a high level of driving assistance. They provide a mobile app that allows users to purchase food from local restaurants.



- Serve Robotics provides level 4 self-driving robots for last mile delivery services around cities.



- StreetDrone built self-driving technology for near-term applications on slow-moving vehicles. They are also creating autonomous robots for last mile delivery services. Their robots are equipped with teleoperation and building to be fully autonomous. They also provide their software and robotics as testing platforms for research and development projects.



- Coco provides remotely-piloted delivery service that partners with restaurants to deliver their food.



- Refraction AI provides a last mile delivery robot that can work in all weather, safe for on the road/bike lanes and can stop within 5 feet.



- Robby Technologies built a self-driving robot for last mile delivery.

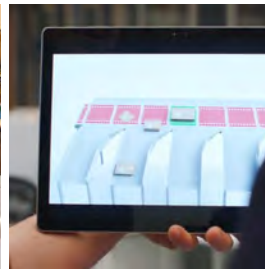
What's Important

This section showcases startups that are providing robotics that can either drive on roads or on sidewalks. Smaller robotics for sidewalks seem to be gaining momentum but are mostly remotely operated by humans. Very few companies are ready for operating on the street and seem like they have a long way to go before commercial deployment. You may want to watch startups within the automotive industry report.

Other Robotics

This section highlights all other robotic products. Here are some examples.

- Grabit utilizes electroadhesion within their robots to be able to pick up very fragile objects. Their robots include:
 - Auto layering robot that can utilize an electroadhesive gripper that can stack materials like leathers, meshes and composite fibers.
 - Gravity-fed conveyors with an electro adhesive film that can guide packages to specific locations.
 - Software that helps manage conveyor belt operations.



Business Model

This section highlights the business model of startups in this category. Here are some examples.

- Geek+, Righthand Robotics and Invia Robotics charge a subscription fee for their robotics, software and services.
- Fabric provides outsourced fulfillment services with zero capital expenditures. They manage the entire fulfillment and delivery process for customers.
- Locus Robotics enables users to rent robots when they need them.

Feature

This section showcases the unique features of these startups from device, software and service perspective.

Device Features

This section highlights the only hardware features of startups in this category. Here are some examples.

Addons

This section highlights unique tools that can be attached to robots. Here are some examples.

- Sorting:
 - Geek+ and Otto Motors have a robot with a small conveyor belt on top to push products towards destinations they should go.
 - GreyOrange has conveyor belt attachments to their floor robots.
 - Geek+ also has a top that flips up to slide products off the robot towards other directions.
 - HAI Robotics' robots have packaging grabbing functionality on top of their floor moving robots.
 - Fetch Robotics provides a robotic arm attachment for sorting products.

- Shelves:
 - Scallog provides storage modular storage shelves their robots can pick up and move.
 - Otto Motors and **Fetch Robotics** provide shelves or carts that can be easily lifted by their robot.
 - **ForwardX Robotics** and **Locus Robotics** enable users to customize shelves/packing units on robotics.
 - **HAI Robotics** provides storage units that work with their robots.
 - **Exotec** provides shelves and bins for their system.
- Scanners:
 - Locus Robotics and Otto Motors have a tablet that scans products that help with pick and put support.
 - **Fetch Robotics** and **Geek+** provide sensors that can scan products in warehouses to track inventory.
- Other:
 - Locus Robotics allows users to add label printers, RFID scanners and environmental sensors.
 - Invia Robotics provides a wearable device that helps workers get directions, manage workflow, and interface with robots.

What's Important

Most floor robotics have different attachments that make it easier to grab products from shelves. Some companies even provide their own shelves that are built to be lifted/moved by their robots.

Versatility

This section highlights the versatility of robotic startups. Here are some examples:

- Picking Packages:
 - Invia Robotics can pick totes up to 40 pounds, at heights of up to 8 feet.
 - Plus One Robotics's robotic kit equipped with a 3-Mode gripper can pick up 90+ percent of typical ecommerce items.
 - **Gabit electroadhesion** has the ability to handle fragile items like an egg, flimsy soft fabric and a 50 pound box. Their technology provides sub-mm precision in moving products.
 - Righthand Robotics can pick and place thousands of SKUs
 - GreyOrange's robotic arm can identify 100k SKUs and continuously optimizes how it grasps and moves different SKU variations.
 - **Dexterity's** robots can intelligently identify and pick single parcels from messy, overflowing inbound chutes. Their platform is able to sort/pick/organize mixed SKUs, angled boxes and ugly cases.
 - **HAI Robotics** can easily pick/place packages on multiple shelves.
 - **Osaro's** platform can adapt to a variety of use cases utilizing visual intelligence and third party robotic solutions.
 - **Nimble Robotics** provides robotic arms that can pick and pack anything.
 - **6 Rivers** can carry a maximum payload of 160 lbs.
- Speed:
 - Takeoff can assemble an order of 50 items in 5 minutes.
 - Righthand Robotics can move up to 1,200 units per hour.
 - Scallog sorting station and mobile robots can handle a throughput of 600 picks per hour by each picker.
 - Fabric provides 5 min order fulfillment and 1 hour delivery.
 - **Exotec's** system can process 600 items per hour.

- Environment:
 - Geek+'s robotic forklifts can operate in negative 10 to 40 degrees. Their floor robots can operate in temperatures as low as negative 50 degrees.
 - GreyOrange's robotics can operate in very low/high temperatures and also in high humidity.
 - Refraction AI can operate in all weather conditions.
 - Robby Technologies can ride night/day, rain/shine and uphill/downhill.
- Configurability:
 - Locus Robotics flexible design allows it to be configured to meet a wide range of tote and multi-bin picking needs.
 - Scallog's shelves stay on standard adjustable elements and can be adapted to all sorts of boxes or hanging products.
 - Takeoff can fit within grocery stores. They can also allow for unlimited category trees and can optimize assortment.
 - 6 Rivers provides multiple configurations to hold different products from weight, size, and type.
- Movement:
 - Otto Motors utilizes laser-based perception and artificial intelligence to dynamically move through facilities, infrastructure-free.
 - Invia Robotics utilizes AI to determine the optimal paths based on company needs/resources, with workers and robotics.
 - Locus Robotics automatically learns the most efficient travel routes through your warehouse, to dramatically improve worker efficiency and productivity 2x to 3x over traditional cart picking.
 - Fetch Robotics offers a system that can safely find, track, and move anything from parts to pallets in warehouses, factories, and distribution centers.
 - Canvas Technology's cart maps out a room, can roll from point A to point B on its own, and it's smart enough to maneuver around objects in its path.

What's Important

This section highlights ways in which startups are trying to innovate. Most of the focus is on a robot's ability to pick up different types of packages/products.

Battery/Range

This section highlights the battery features of startups in this category. Here are some examples.

- Otto Motors uses state-of-the art lithium battery packs to deliver industry-leading performance.
- IAM Robotics provides a swappable battery.
- Geek+'s robotic forklifts have an average run time of 6-8 hours. Most of their floor robotics can operate for 2-3 hours and can charge in 10 minutes.
- Scallog's robots can last 14 hours on a single charge and require 2.5 hours to recharge.
- Seegrid provides auto-charge charging stations that enable forklifts to autonomously recharge and continue to operate 24/7.
- 6 Rivers robotics runs 24/7 with the latest in battery technology for rapid charging.
- Robby Technologies can operate 20 miles on a single charge.

Software Features:

This section highlights the only service features of startups in this category. Here are some examples.

Deployment

This section highlights how robotic systems can be deployed. Here are some examples.

- Geek+’s full system can be deployed in 3 months. Their picking robots can be deployed in 2 weeks.
- RightHand Robotics can be deployed in one day. Their platform needs no specific training to pick products.
- Seegrid AMRs use Seegrid IQ technology to operate with zero infrastructure; customers are able to train routes in-house while production is running. Employees just drive or walk the vehicle along desired routes.
- Scallog is easy to install, requires no new infrastructure, reduces space by 20-30%, simplifies maintenance, and can be deployed in 2-3 weeks. Scallog floor robots are guided using an optical sensor and floor tape.
- Takeoff can be implemented and launched within months.
- Locus Robotics can be deployed within days.
- Invia Robotics can be deployed within weeks. They run an assessment on the current environment, simulates the ideal robotic system, integrates with existing systems and then can be deployed.
- Exotec can be deployed within months.
- HAI Robotics can be deployed in one month.
- Home Delivery Service’s equipment is factory-built and an installation can be up and running in 120 days.
- 6 Rivers requires no new infrastructure, is able to go live in 2-4 weeks and has a 12-18 month payback.
- Fetch Robotics solution can be deployed in hours.

What’s Important

It is imperative for companies to build a system that can get up and running in a short amount of time. This helps their customers realize the benefits of robotic optimization faster. Startups in this section either set up a system on behalf of users within weeks/months time or their robots can learn on the spot.

Management

This section highlights startups that provide robot management solutions. Here are some examples.

- Gideon Brothers, HAI Robotics, ForwardX Robotics, Scallog, Seegrid and Otto Motors provide a fleet management platform that helps manage robot traffic, jobs/tasks and more. Some also provide a mobile application or onboard interface that enables workers to control the robots.
- Takeoff provides an interface that enables grocery store customers to order deliveries directly from an app. They also provide users with a dashboard and replenishment guides to track machine performance.
- Locus Robotics provides a mobile app that enables workers to manage their workflow and interface with robots. Their app and tablet on the robot provide guidance on where and what products they need to pick. They gamify their app to encourage workers to boost their performance.
- Starship Technologies enables consumers to order food from local restaurants and track their robot as it delivers food.
- GreyOrange provides a fulfillment management operating system that can coordinate/manage/optimize tasks from robots, workers and inventory needs.
- Plus One Robotics allows you to manage robotics from different locations.
- Exotec provides order optimization software that manages task planning and tracks and records the positions of bins and robots in real time.
- Grabbit provides management software for their conveyor belt solution that enables users to automate sorting of packages.

Integration:

This section highlights robotics ability to integrate with other software solutions within users organization for seamless deployment. Here are some examples.

- GreyOrange, Scallog, Otto Motors, Invia Robotics, Locus Robotics, Seegrid, [Fetch Robotics](#) and [6 Rivers](#) can easily integrate with Warehouse Management Systems.
- Plus One Robotics is compatible with all major robot manufacturers including ABB, Denso, Fanuc, Kuka, and Yaskawa Motoman.
- GreyOrange enables users to integrate third party robots into their platform.
- Osaro integrates with third party robotic arms within five seconds.

Analytics

This section highlights analytic features of startups in this category. Here are some examples.

- [Exotec](#), [Vecna Robotics](#), Plus One Robotics, Seegrid, Otto Motors, Righthand Robotics and Invia Robotics provide an operations dashboard that helps users monitor all robot/worker performance. Insights can be used as feedback to improve systems or identify issues.
- Locus Robotics provides an analytics dashboard that monitors UPH, PPH, robot productivity, worker productivity, and more.

Platform

This section highlights startups that allow third parties to build/edit their robotic software system. Here are some examples.

- [StreetDrone](#) provides their software and robotics as testing platforms for research and development projects.
- [Fetch Robotics](#) provides their robotic platform to researchers and developers to build new solutions.

Service Features:

This section highlights the only service features of startups in this category. Here are some examples.

Unique Services

This section highlights unique services offered by startups in this section. Here are some examples.

- Geek+, Otto Motors and Righthand Robotics provide maintenance, service, troubleshooting and updates - all of which are included in their plans.

Delivery

This section highlights startups that provide a marketplace for customers to order product delivery. Most outdoor robotic startups provide this feature. Here are some examples.

- Fabric provides full service fulfillment services including shipment to end customers.
- Nuro can make deliveries for consumer applications.
- Kiwibot and Starship Technologies have their own consumer application where customers can order food from a local restaurant and have it delivered by their robots.
- Takeoff enables grocery stores to offer pickup and delivery options to their customers.
- [Refraction AI and Coco](#) partner with local restaurants to enable local delivery for their food.
- [Serve Robotics](#) is collaborating with UberEats to deliver food to consumers.
- [Marble](#) lets retailers offer deliveries in two hours or less.

Use Case

This section highlights who are the target customers of startups in this category. Majority of startups are building products that cater to the industries below. There are a handful of specific use cases that exist but are not worth mentioning.

Consumer/Restaurant

This section highlights startups that provide services directly to consumers and/or restaurants. Most startups within the outdoor robotic section focus on these types of customers.

- Starship Technologies, Nuro, Kiwibot, [StreetDrone](#), [Serve Robotics](#), [Coco](#), [Refraction AI](#), [Robby Technologies](#)

Retailer/Grocery/Fulfillment

This section highlights startups that enable retailers to have their own micro fulfillment center to quickly fulfill delivery/pickup orders. Most startups in the automated fulfillment section focus on these types of customers.

- Fabric, Takeoff, [Exotec](#), [Dexterity](#), [Osaro](#), [Home Delivery Service](#)

Warehouse

This section highlights startups that provide robotics directly to those who own warehouses. Most startups in this category sell directly to warehouses.

- Locus Robotics, Invia Robotics, Geek+, Otto Motors, Seegrid, Scallog, GreyOrange, IAM Robotics, [ForwardX Robotics](#), [Dexterity](#), [HAI Robotics](#), [Osaro](#), [Pickle Robot](#), [Gideon Brothers](#), [Nimble Robotics](#)

Various Industries

This section highlights startups that focus on a variety of industries outside of logistics, this is typical industrial/manufacturing industry. Most startups in the robotic arm section focus on these types of customers.

- Righthand Robotics, Plus One Robotics, [Exotec](#), [Dexterity](#), [Osaro](#)

Research

This section highlights startups that provide their robotic platform for researchers.

- [StreetDrone](#)

Marketplace Delivery

Category Definition: The Marketplace Delivery category focuses on startups that build a marketplace for shippers and delivery providers to connect. The following content will breakdown the function, features and use cases of every startup recognized to showcase how they differentiate.

Important Updates:

What we previously mentioned still holds true today. In order for marketplaces to build volume on their platform they need to offer services/features that help both carriers and shippers. For shippers, it's important to have seamless booking experience, multiple shipping options and analytics to help them choose the right carrier. For carriers, it's important to offer instant booking while optimizing price and routes. This is done by integrating existing TMS solutions into marketplaces or marketplaces controlling order management solutions for carriers. For smaller fleets, it provides simple to use applications that offer flexibility and provide volume. In any case, marketplaces are reaching to control the capacity of fleets by building their order management tool on their behalf. Competition for this will clash with fleet management and TMS solutions.

If you take an even bigger step back, you'll start to see competition with B2B marketplaces. Many procurement platforms are building TMS applications on top of their platform. Monitor the Marketplace Industry report to see how this industry changes.

Function

This section looks at how these marketplaces recruit shippers and carriers onto their marketplace, the type of marketplaces, how orders are fulfilled and booking methods. Here are some examples.

Marketplace

This section highlights the type of delivery marketplace is offered. Here are some examples.

- General Freight
 - [Trella](#), [MVX](#), [TrackChain](#), [BridgeLinx](#), [Luwjistik](#), [Shippabo](#), [Cogoport](#), [Kargo Technologies](#), [Nowports](#), [Emerge](#), [Andalin](#), [Forto](#), [Flexport](#), [Freightos](#)
- Ground Freight
 - [Vahak](#), [DigiHaul](#), [Ezyhaul](#), [Zuum Transportation](#), [ComFreight](#), [CloudTrucks](#), [Ofload](#), [Blackbuck](#), [4tigo](#), [NEXT Trucking](#), [Kobo360](#), [DrayNow](#), [Transfix](#)
 - [Flock Freight](#) provides a marketplace for shared truckload shipping.
 - [Trucksters](#) provides a freight marketplace that relays loads for faster/cheaper shipping times.
- Air Freight
 - [WebCargo](#) by [Freightos](#) and [Cargo.one](#) help freight forwarders find quotes and book air cargo services.
- Other:
 - [Container xChange](#) helps users find, buy or lease containers.
 - [Dray Alliance](#) provides a marketplace that enables users to access drayage carriers.

Platform

- [Zuum Transportation](#) and [BlueX Trade](#) provide a white-label platform that enables carriers/freight forwarders to manage their own freight marketplace.

What's Important

Most companies in this category focus on freight delivery marketplaces. They either help shippers book any type of transport or specifically trucks for FTL/LTL shipments. Also note, there tends to be regional dominant marketplaces.

Carrier Sourcing

This section highlights how marketplaces source delivery providers onto their platform. Here are some examples.

- Verified Network
 - Vahak, Ezyhaul, Zuum Transportation, ComFreight, Trella, MVX, TrackChain, Luwjistik, Dray Alliance, Blackbuck, Convoy, Freightos, Cogoport, NEXT Trucking, Kobo360, Flexport, Kargo Technologies, DrayNow, Cargo.one, Andalin, Transfix, Nowports, Emerge
 - Container xChange has a verified network of container owners.
- Referral
 - TrackChain, Flexport and Emerge's platform enable shippers to invite their current carriers/brokers into their platform.
 - Kargo Technologies enables users to set up a private marketplace for their partners.
 - CloudTrucks enables users to invite other drivers or team members to their platform.
 - ComFreight enables users to create their own private groups to manage freight.
- Internal
 - BlueX Trade's white-label platform enables carriers/freight forwarders to manage their own freight marketplace.

What's Important

Most marketplaces provide a verified network of delivery providers. This is to ensure service providers can uphold their delivery promises for shippers.

Fulfillment Options

This section highlights how startups fulfill orders with their driver network. Here are some examples.

- Assigned Capacity
 - Ezyhaul, Trucksters, MVX, TrackChain, BridgeLinx, Flock Freight, NEXT Trucking, Blackbuck and DrayNow automatically match drivers with loads that need to be fulfilled.
- Driver Control
 - Vahak, DigiHaul, Zuum Transportation, ComFreight, Trella, Flock Freight, CloudTrucks, Ofload, Dray Alliance, Convoy, 4tigo, Flexport, Kargo Technologies, Kobo360, Blackbuck, DrayNow, Next Trucking
- RFP
 - Vahak, Ezyhaul, Zuum Transportation, Trella, Luwjistik, Shippabo, Flock Freight, Ofload, Convoy, Freightos, Cogoport, Flexport, Kargo Technologies, Cargo.one, Container xChange, Nowports, Emerge

What's Important

How orders are fulfilled are split pretty evenly. There are startups that simply assign orders to specific drivers, while others enable the drivers themselves to choose which deliveries they want to take. Most marketplaces operate by RFP process.

Booking

This section highlights how customers can book for delivery services. Here are some examples.

- Automated Booking
 - **Zuum Transportation, Transfix**, Convoy and Emerge enables shippers and carriers to automate contract booking.
- Instant Booking:
 - **DigiHaul, Ezyhaul, Zuum Transportation, Trucksters, TrackChain, Flock Freight, CloudTrucks, Ofload, Dray Alliance**, Flexport, Cogoport, Freightos, Container xChange, Nowports, Emerge, Cargo.one, Andalin, Convoy, **Transfix**
- Non-Instant Booking:
 - Kargo Technologies bookings are confirmed within hours.
- Future Booking:
 - Kobo360 lets you book two weeks in advance.
 - **Shippabo, Transfix**, Cargo.one, Flexport, Container xChange, Nowports and Emerge enable users to book shipments in advance.
 - **Flock Freight enables shippers to create bids within 24 hours in advance, if they're platform can identify a shared truck load, the shipper gets a discount on shipping.**
- Guarantee:
 - 4tigo provides fulfillment assurance to minimize no shows, delays or damages.
 - Andalin provides guaranteed capacity for shipments to the US.

What's Important

Many marketplaces either provide or are moving towards instant booking. There are a couple that automate the booking process. This is either by automatically assigning drivers, or enabling shippers/drivers to input preferences regarding shipments and if they match they're automatically connected.

Feature

This section highlights the software and service features of startups within this category. Below is the breakdown.

Software Features

This section highlights the only software features of startups in this category. Here are some examples.

Finance Features

This section highlights how marketplaces support transactions on their platform. Here are some examples.

- Payment Timing:
 - **ComFreight, TrackChain**, Kargo Technologies and Emerge distribute payments after the shipment is completed, payments are immediate.
 - 4tigo provides instant remittance for fuel, toll and driver payments.
 - Convoy enables users to be paid up to 48 hours in advance after shipment at no cost.
 - **Dray Alliance provides free next day payments after proof of delivery.**
 - **CloudTrucks provides instant payments to a Visa card, of which funds can be transferred to other accounts for free.**
 - **Transfix can pay users within two days of delivery.**
- Billing:
 - Flexport automatically creates itemized invoices (Includes landed costs, container utilization, carbon emissions, etc) and sends them for a user's review after a supplier submits a request.
 - **Shippabo helps users forecast spending.**

- Pricing:
 - DrayNow helps you set pricing based on marketplace feedback.
 - Cogoport helps users sort prices by vendor, fastest, cheapest, etc.
 - Container xChange helps users forecast prices.
 - **TrackChain**, Convoy and Emerge provide spot rate protection. They help users identify better rates before they select spot rates.
 - **Ezyhaul**, **Zuum Transportation** and **TrackChain** automatically match carriers/shippers based on best prices, capacity, needs and more.
 - **Shippabo** helps users benchmark rates against the market.
 - **Transfix** utilizes AI to identify best prices for both contract and spot prices.
- Bidding
 - Emerge provides transparent bidding. Users can see where their bid is placed within auctions.
 - **Vahak** enables users to issue private or public bids.
- Wallet
 - **Dray Alliance** provides a wallet that enables drivers to track earnings and job history.
 - **BlueX Trade** enables users to make multi-currency payments on their white-label platform.

What's Important

There are a number of companies that provide payment features for both shippers and delivery providers. Most focus on helping each user achieve the best prices or how quickly payments can be made to delivery providers.

Software Addons

This section highlights startups that provide additional supply chain software to complement their marketplaces. Here are some examples.

- Shipment Management
 - **Vahak**, **Ezyhaul**, **Zuum Transportation**, **TrackChain**, **Luwjistik**, **Shippabo**, **Ofload**, **Dray Alliance**, **NEXT Trucking**, **Kargo Technologies**, **Convoy**, **DrayNow**, **Emerge**, **Kobo360**, **Freightos**, **Forto**, **Nowports**, **Andalin**, **Flexport**, **Transfix**, **Blackbuck**
- Fleet Management:
 - **Vahak**, **DigiHaul**, **Ezyhaul**, **Zuum Transportation**, **Trucksters**, **CloudTrucks**, **Ofload**, **Kobo360**, **Kargo Technologies**, **Dray Alliance**, **Convoy**, **NEXT Trucking**, **4tigo**, **Blackbuck** and **Visopt**, **Transfix**
- Transportation Management Solution
 - **Zuum Transportation**, **Transfix**, **Kargo Technologies**, **Flexport**
- Contract Management
 - **Emerge**, **Nowports**, **Flexport**
- Asset Tracking
 - **Nowports**, **Flexport**
- Warehouse Management
 - **Kargo Technologies**
- Fulfillment/Inventory
 - **Flexport**

What's Important

There is a lot of overlap with other categories within this report. Marketplaces are a great tool to attract shippers and delivery providers and upsell them on supply chain software that makes their order process seamless. You'll see the marketplace category collide/compete with other categories in this report.

Analytics

This section highlights analytic tools offered by startups in this category. Here are some examples.

- Tracking:
 - [Transfix](#), [Blackbuck](#), [Zuum Transportation](#), [ComFreight](#), [Trella](#), [Trucksters](#), [MVX](#), [TrackChain](#), [Shippabo](#), [Ofload](#), [Dray Alliance](#), [Convoy](#), [Kobo360](#), [Freightos](#), [Andalin](#), [Flexport](#), [Kargo Technologies](#), [Nowports](#), [Cogoport](#), [Forto](#), [Container xChange](#), [Emerge](#) and [4tigo](#) provide real time tracking of shipments.
- Market Index:
 - [Cogoport](#) and [Freightos](#) provide a freight rate index.
 - [Zuum Transportation](#), [ComFreight](#), [Shippabo](#), [Cargo.one](#) and [Nowports](#) provide insights on market prices.
- Other
 - [Cargo.one](#) provides an analytics dashboard that helps users measure their performance, sales, revenue, pricing, benchmarks and more.
 - [Kargo Technologies](#) provide performance analytics.
 - [Flexport](#) provides performance, compliance, duty and trade analytics.
 - [Convoy](#) provides advanced analytics that can identify trends and anomalies across users' supply chain.
- Reviews
 - [Emerge](#) chooses carriers based on system generated scorecards.
 - [Container xChange](#) enables users to create public profiles on their platform where their customers can leave reviews.
 - [Vahak](#) and [Luwjistik](#) enable users to peer review logistic partners.

Service Features

This section highlights the only service features of startups in this category. Here are some examples.

Unique Services

Some marketplaces are offering delivery services themselves to assure seamless movement of goods, especially when moving shipments to and from transportation hubs. Here are some examples:

Customs

- [MVX](#), [Cogoport](#), [Andalin](#), [Flexport](#) and [Forto](#) have reps to help users with customs clearance.
- [Nowports](#) provides expert agents that can assist with the customs process.

Fulfillment

- [Shippabo](#) and [Freightos](#) supports Amazon FBA imports by helping users find great shipping rates for FBA centers, manage palletization/labeling, and more.
- [Picup](#) allows their customers to utilize their unused floor space as a picup hub partner.

Delivery Services

- [Convoy](#) provides trailers if necessary for drivers.

Financial Services

This section highlights financial products offered to users. Here are some examples.

- Insurance:

- **Trucksters**, Kargo Technologies, Kobo360, Flexport, Forto and Convoy can provide insurance for freight or cargo.
- Nowports provide merchandise insurance.
- Container xChange includes insurance, repair and cleaning for every container.
- Financing:
 - Flexport provides trade financing that can be used to purchase inventory, finance freight and duty charges.
 - **MVX**, Nowports, Kargo Technologies, Kobo360 and Andalin provide various forms of financing.
 - **CloudTrucks** can help finance trucks for drivers.
 - **TrackChain** provides invoice factoring.
 - **BlueX Trade** enables users to offer financing options to their customers.

Driver Perks

This section highlights startups that provide unique perks for drivers. Here are some examples.

- Blackbuck provides facilities for drivers in major locations, fuel cards, toll tags and cash cards.
- 4tigo provides free parking, resting facilities, and roadside assistance and incident management. They also provide discounts/cashbacks when using their fuel card.
- Convoy provides a number of discounts and rewards to drivers including access to trailers, maintenance and other services.
- **TrackChain** and **Emerge** provide rewards program for carriers on their platform
- **CloudTrucks** helps users lease or purchase trucks. They provide fuel and maintenance discounts.
- **Transfix** enables drivers to earn reserved loads based on their performance.

Unique Services

This section highlights the unique service features of startups in this category. Here are some examples.

- Convoy and Flexport provide a sustainability platform that enables users to calculate and reduce their carbon emissions.
- Flexport helps users claim and apply for duty refunds. They also provide a variety of training services/certifications.
- Nowports helps guide users through their platform.
- Container xChange can help users manage their account and negotiate with partners on their behalf.
- Andalin partnered with Alibaba to help users list their products on Alibaba's website.
- **Flock Freight** is offsetting their carbon emissions by supporting projects that offset emissions.
- **Vahak** provides a transportation directory.

Use Case

This section highlights who are the target customers of startups in this category. Majority of startups are building products that cater to the industries below. There are a handful of specific use cases that exist but are not worth mentioning.

All Shippers

This section highlights all the startups that focus on supporting shippers of all types. All marketplaces are trying to connect shippers with delivery providers, most of which offer freight services.

- **DigiHaul**, **Ezyhaul**, **Zuum Transportation**, **ComFreight**, **Trella**, **Trucksters**, **MVX**, **TrackChain**, **BridgeLinx**, **Luwjistik**, **Shippabo**, **Flock Freight**, **CloudTrucks**, **Ofload**, **Flexport**, **Emerge**, **Nowports**, **Andalin**, **Container xChange**, **Cargo.one**, **DrayNow**, **Kargo Technologies**, **Kobo360**, **Forto**, **Cogoport**, **Freightos**, **4tigo**, **Convoy**, **Blackbuck**

All Carriers

This section highlights all the startups that focus on supporting delivery providers of all types. All marketplaces are trying to connect shippers with delivery providers, most of which offer freight services.

- [Zuum Transportation](#), [Trella](#), [MVX](#), [TrackChain](#), [BridgeLinx](#), [Shippabo](#), Flexport, Emerge, Nowports, Andalin, Container xChange, Kargo Technologies, Forto, Cogoport, Freightos, Convoy

Specific Carriers

This section highlights startups that provide specific or specialized delivery services. This can be perishable products, industrial, refrigerated delivery or more.

- [DigiHaul](#), [Ezyhaul](#), [ComFreight](#), [BlueX Trade](#), [Trucksters](#), [Luwjistik](#), [Flock Freight](#), [CloudTrucks](#), [Ofload](#), Cargo.one, DrayNow, Kobo360, NEXT Trucking, 4tigo, Blackbuck

Agents/Brokers

This section highlights all the startups that support agents/brokers. All marketplaces are trying to connect shippers with delivery providers, many support agents/brokers as well.

- [Zuum Transportation](#), [Trella](#), [BlueX Trade](#), [BridgeLinx](#), [Shippabo](#), [Ofload](#), Flexport, Emerge, Nowports, Andalin, Container xChange, DrayNow, Kargo Technologies, Cogoport, Kobo360, Forto, Freightos, 4tigo, Convoy, Blackbuck

Specific Use

This section highlights startups that focus on very specific use cases.

- [Dray Alliance](#) focused on drayage
- Container xChange is focused on container owners

Service Delivery

Category Definition: The Service Delivery category focuses on companies that are providing shipping services themselves, not through a marketplace. Some act like marketplaces but it's their brand that manages all deliveries. Think of Uber, they may not own their fleet but when you book a ride, it's always under their brand. The following content will breakdown the function, features and use cases of every startup recognized to showcase how they differentiate.

Important Updates:

We saw some big exits from startups based in China. Similar to the marketplace delivery category, you see the rise of dominant players across different regions/countries. We shared before that the closer delivery companies can control the process of purchasing goods, the faster they can scale. You're seeing many grocery/restaurant delivery platforms as well as B2B procurement marketplaces create their own marketplace and leverage their fleet to provide superior delivery services. We will watch to see how much these industries blend - so far this model minted multiple unicorns.

Function

This section highlights how fleets are sourced and the type of delivery services companies offer. Below is the breakdown.

Fleet Ownership:

This section highlights how vehicles/drivers sourced by startups in this category. Here are some examples.

- Crowdsourced:
 - Liftit, Rivigo, Loggi, GoGoX, Tiramizoo, Lalamove, LetsTransport, LYNK Logistics, TrueNorth, Uber Freight, Lori Systems, Veho, pickupp, Zypp Electric, Blowhorn, RaRa Delivery, Uello, Trukkin, Curri, Loggi, Shadowfax
- Owned:
 - Hive Box, Deliverer Logistics, Ninja Van, AxleHire, Fetch Package, Ecom Express, Dropoff, Speedaf Express, Stellar Value Chain Solutions, Paack, ShipBlu, Zypp Electric, Gatik, Flash Express, Poxel.co, Sicepat Express, URB-E, Instabox, iVoy, Paperfly, Shanghai ANE Logistics, Dada-JD, TruckEasy
- Owned/Crowdsourced:
 - Loadshare Networks, Janio, Delhivery, JD Logistics
- Partner/Broker:
 - TVS Supply Chain Solutions, AxleHire, Xpressbees, Rivigo, Ladingo, Nuvocargo, Arrive Logistics, Torch, Airspace, DASH Systems, FR8, Inteluck, Sendle, Trukkin, EV Cargo
- Franchise:
 - Shadowfax

What's Important

Many companies tend to have their own fleet, especially related to freight shipments. Most of the crowdsourced fleet ownership tends to be last mile/parcel deliveries.

Shipment Type

This section highlights the type of delivery services startups provide. Here are some examples.

- Parcel:
 - Openlogi, Ninja Van, GoGoX, Ecom Express, Loggi, Lalamove, Liftit, LetsTransport, LYNK Logistics, Dropoff, [Airspace](#), [Stellar Value Chain Solutions](#), [Paack](#), [Veho](#), [pickupp](#), [ShipBlu](#), [Gatik](#), [Blowhorn](#), [Sendle](#), [Uello](#), [Trukkin](#), [Flash Express](#), [Paxel.co](#), [Sicepat Express](#), [URB-E](#), [Loggi](#), [iVoy](#), [Paperfly](#), [Delhivery](#), [Shanghai ANE Logistics](#)
- LTL/FTL:
 - Rivigo, Loadshare Networks, AxleHire, Liftit, LetsTransport, Deliverer Logistics, LYNK Logistics, [Nuvocargo](#), [TrueNorth](#), [Uber Freight](#), [Arrive Logistics](#), [Torch](#), [Lori Systems](#), [Stellar Value Chain Solutions](#), [FR8](#), [Inteluck](#), [Trukkin](#), [Curri](#), [Shanghai ANE Logistics](#), [Delhivery](#)
- Ondemand/Last-Mile:
 - Lalamove, Deliv, AxleHire, Fetchr, LetsTransport, Fetch Package, Loadshare Networks, GoGoX, Ecom Express, LetsTransport, LYNK Logistics, [Stellar Value Chain Solutions](#), [Paack](#), [pickupp](#), [Zypp Electric](#), [Blowhorn](#), [RaRa Delivery](#), [Uello](#), [Paxel.co](#), [Sicepat Express](#), [Budbee](#), [Shadowfax](#), [Delhivery](#)
- All Modes:
 - TVS Supply Chain Solutions, Xpressbees, [Janio](#), [Speedaf Express](#), [Paps](#), [EV Cargo](#), [JD Logistics](#)
- Reefer:
 - LetsTransport
- Air:
 - YW56, [Airspace](#), [DASH Systems](#), [Inteluck](#)
- Ocean:
 - Ladingo, [Inteluck](#)
- Specialized:
 - [Curri](#)
- Lockers:
 - Hive Box, [Paxel.co](#), [Instabox](#)

What's Important

Majority of the companies in this category focus on last mile/on demand or parcel delivery services. Freight services mostly have a truck fleet.

Feature

This section highlights the software and service features of startups within this category. Below is the breakdown.

Software Features

This section highlights the only software features of startups in this category. Here are some examples.

Software Addons

This section highlights startups that have supply chain software. This is typically users by themselves or customers. Here are some examples.

- Fulfillment:
 - TVS Supply Chain Solutions, Ecom Express, Lalamove, Xpressbees, Openlogi, Fetchr, [Janio](#), [Stellar Value Chain Solutions](#), [Paack](#), [Uello](#), [Sicepat Express](#), [Instabox](#), [Paperfly](#), [Shadowfax](#), [Delhivery](#), [Blowhorn](#)
- Fleet Management:

- Rivigo, Liftit, Dropoff, TrueNorth, Uber Freight, Arrive Logistics, Zypp Electric, Blowhorn, Curri
- Order Management:
 - TVS Supply Chain Solutions, Ecom Express, Uber Freight, Janio, Airspace, RaRa Delivery, Uello, Trukkin, Curri, Shadowfax, Blowhorn
- TMS:
 - Stellar Value Chain Solutions, Inteluck, EV Cargo, Yunmanman, Blowhorn
- Return Mgmt:
 - TVS Supply Chain Solutions, Ecom Express, Veho, Budbee, Paperfly, Shadowfax
- Warehouse/Inventory Management:
 - Openlogi, TVS Supply Chain Solutions, Xpressbees, Blowhorn
- Supplier Management:
 - TVS Supply Chain Solutions, EV Cargo
- Asset Tracking:
 - TVS Supply Chain Solutions, Airspace, Blowhorn, Innostic
- Analytics:
 - TVS Supply Chain Solutions, Fetchr, Nuvocargo, RaRa Delivery, EV Cargo
- Yard Management:
 - TVS Supply Chain Solutions

Unique Software Features

This section highlights the unique software features of startups in this category. Here are some examples.

- Rivigo installed several sensors in their fleet to track GPS, fuel, driver, theft and more.
- Ecom Express provides a mobile app that can facilitate eKYC verification and document collection at delivery.
- Rivigo provides freight index movement statistics and analysis.
- Uber Freight enables drivers to rate facilities they visit.

Service Features:

This section highlights the only service features of startups in this category. Here are some examples.

Shipment Services

This section highlights unique delivery services offered by startups in this category. Here are some examples.

- Customs Management:
 - Ladingo, TVS Supply Chain Solutions, Ninja Van, Xpressbees, Nuvocargo, Janio, Speedaf Express, EV Cargo
- Warehousing:
 - Ecom Express, Openlogi, TVS Supply Chain Solutions, Guangzhou CK1, Loadshare Networks, Ninja Van, Xpressbees, Speedaf Express, Stellar Value Chain Solutions, Paack, Inteluck, Blowhorn, Uello, Paperfly, EV Cargo, Delhivery, JD Logistics, Innostic
- Packaging:
 - Openlogi, Lalamove, Ninja Van, EV Cargo, Shanghai ANE Logistics, JD Logistics
- Return Management:
 - Xpressbees, Shadowfax, Delhivery, JD Logistics, Blowhorn
- Quality Inspection:
 - Openlogi, Shadowfax, JD Logistics, Blowhorn
- Maintenance:
 - TVS Supply Chain Solutions
- Asset Recovery:

- TVS Supply Chain Solutions
- Movement Services (Furniture)
 - GoGoX, Lalamove, LYNK Logistics
- Destruction
 - Openlogi
- Product Regeneration/Resale:
 - JD Logistics

Unique Modes of Transport:

This section highlights unique types of delivery vehicles offered by startups in this category. Here are some examples.

- TVS Supply Chain Solutions can transport dangerous goods.
- **Budbee** and Fetch Package allows consumers to deliver packages to their warehouse. Residents can schedule when it's convenient for their packages to be delivered to their house.
- **Torch** is exclusively focused on short haul deliveries and only partners with fleets with less than 50 vehicles.
- **Airspace** can transport dangerous goods and provide an onboard courier service.
- **DASH Systems** provides unique hardware that allows aircrafts to drop packages from their air. They provide hardware that automates cargo drop and guidance tools to direct their flight path.
- **Zypp Electric's** entire motorcycle fleet is electric and supported by their charging infrastructure.
- **Gatik** is building autonomous middle mile delivery vehicles.
- **Curri's** fleet can be equipped with a variety of specialized transport tools that make transport easier.
- **URB-E** provides electric-powered, collapsible containers and bicycles that can replace delivery vans in urban environments.
- **JD Logistics** provides drone and robot delivery.

Unique Services

This section highlights the unique service features of startups in this category. Here are some examples.

- TVS Supply Chain Solutions provides repair workshops/services that help users repair, refurbishment and remarketing of electronic and electro-mechanical equipment. They also provide a variety of consulting services including equipment utilization, material flow, warehouse design, project management, supply chain optimization and more.
- **Hive Box** lockers can be equipped with storage, advertisement, lottery machines and more.
- **Fetchr** provides a chatbot that manages inbound customer questions about shipments.
- **Hivebox** offers advertising on their lockboxes or terminals.
- **Uber Freight** provides drivers access to drop freight routes.
- **ShipBlu** and **Paack** enable customers to pick their delivery time.
- **Zypp Electric** enables users to buy motorcycles and lease them out to individuals interested in shipping their bikes.
- **Paxel.co** provides recycling services.

Financial Services

This section highlights startups that provide financial services. Here are some examples.

- Insurance:
 - **Blowhorn**, **Deliv**, **GoGoX**, **LYNK Logistics**, **JD Logistics**, **Shanghai ANE Logistics**, **Glovo**
 - **GoGoX**, **Arrive Logistics** and **Nuvocargo** provide cargo insurance
- Financing:
 - **Loadshare Networks** provides working capital for partners.
 - **Nuvocargo** provides import/export financing, invoice factoring and inventory loans.
 - **Blowhorn** provides payday loans for drivers.

- JD Logistics provides supplier financing, invoice factoring and truck leasing.

Driver Perks

This section highlights the perks these delivery services offer to their drivers, regardless if they're crowdsourced or their own fleet. Here are some examples.

- Loggi provides discounts to buy equipment, take courses and more.
- Lalamove provides drivers fuel and maintenance discounts. They also provide rewards to highly rated drivers.
- LetsTransport provides drivers with insurance, training, fuel perks, loans/financing and more.
- TrueNorth provides trailer leases and advanced payment for fuel cards.
- Blowhorn and Uber Freight provide a variety of rewards and discounts for a number of services including fuel, inspections, tires, education and more.
- Trukkin provides education and a variety of events/networking sessions for truckers.
- Yunmanman application allows drivers to check violations, visit malls, buy a new car and more.

Marketplace

This section highlights startups that provide marketplaces. Here are some examples.

- TVS Supply Chain Solutions provides a B2B procurement marketplace with over 5k suppliers.
- Fetchr provides a marketplace that enables users to sell their products to other users.
- Pickup provides a marketplace that enables users to buy and sell goods.
- Poxel.co provides a marketplace that enables consumers to purchase a variety of goods.
- Glovo partners with local stores to offer a B2C marketplace.

Use Case

This section highlights who are the target customers of startups in this category. Majority of startups are building products that cater to the industries below. There are a handful of specific use cases that exist but are not worth mentioning.

Industrial Shippers

- TVS Supply Chain Solutions, Xpressbees, Rivigo, Deliveroo Logistics, Nuvocargo, TrueNorth, Uber Freight, Janio, Speedaf Express, Arrive Logistics, Airspace, Lori Systems, Stellar Value Chain Solutions, FR8, Inteluck, Trukkin, Curri, Blowhorn

SMB Shippers (Ecommerce, D2C)

- Loadshare Networks, Ninja Van, AxleHire, GoGoX, Ecom Express, Loggi, Lalamove, Hive Box, Xpressbees, Openlogi, Fetchr, Liftit, LetsTransport, Ladingo, LYNK Logistics, Dropoff, Nuvocargo, TrueNorth, Uber Freight, Janio, Speedaf Express, Arrive Logistics, Torch, Airspace, DASH Systems, Stellar Value Chain Solutions, FR8, Paack, Inteluck, Paps, Zypp Electric, Gatik, Blowhorn, RaRa Delivery, Sendle, Uello, Trukkin, Flash Express, Poxel.co, Sicepat Express, URB-E, Loggi, Instabox, iVoy, Paperfly

Last Mile Shippers (Restaurant)

- Loadshare Networks, GoGoX, Ecom Express, Lalamove, Xpressbees, LYNK Logistics, Veho, pickup, ShipBlu, Zypp Electric, Blowhorn, RaRa Delivery, Flash Express, Poxel.co, Sicepat Express, Shadowfax

Consumers

- Fetch Package, GoGoX, Loggi, Lalamove, Hive Box, Fetchr, LYNK Logistics, Poxel.co, Instabox, Budbee

Drone Logistics

Category Definition: This category highlights startups that utilize drones for delivery use cases. The following content will breakdown the function, features and use cases of every startup recognized to showcase how they differentiate.

*Please note, we did not complete extensive research into the entire drone industry so there will be companies missing from this category.

Important Updates:

We don't necessarily have a full view of the drone industry but from the companies we've tracked we noticed drone delivery is difficult. We have yet to see large commercial uptake of drone delivery services for last mile or cargo delivery, even with backing from the likes of Walmart and UPS. There does seem to be a massive rise in healthcare drone delivery, especially in emerging markets - the biggest being Africa. Cargo drones seem to be carving a niche with military use cases. This category faces competition from delivery robots - who seem to be doing much better at consumer goods delivery - mostly for campuses.

Function

This section highlights the primary delivery services offered by startups in this category. Here are some examples.

Last Mile Delivery

This section highlights startups that are building drones that can deliver small parcels or food. Here are some examples.

- Flytrex provides last mile drone delivery service that enables customers to order food from local restaurants and have them delivered to their house. Their drones can fly around 5 miles, at 32 mph, and their drones fly completely autonomously.



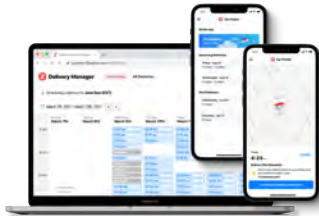
- Matternet provides a delivery drone, station and cloud platform.
 - Their drones are designed to carry payloads of up to 2 kilograms and 4 liters over distances of up to 20 kilometers autonomously.
 - Their station exchanges drone batteries, automates payload fulfillment and operates 24/7.
 - Their software platform manages customer requests, generates routes, monitors, commands and controls all assets.



- Xunyi is building drones, stations and a delivery network.
 - Their drones can fly at 50 km/h, carry 4 kg and operate in medium rain/snow.
 - They provide a station for drone docking, charging and to add packages.
 - They also provide an autonomous ground delivery robot.



- Zipline provides an autonomous last mile delivery service. They provide autonomous electric aircraft, unmanned traffic management systems, recovery systems to catch drones and warehousing/fulfillment services to pack/ship products. They also provide a delivery management application to manage orders, deliveries and more.



- Flirtey (Skydrop) provides autonomous last mile drone delivery services for retailers and healthcare.



- Deuce Drone provides same day drone delivery services for retail/ecommerce companies. Consumers place orders, the package is prepared by the retailer, the package is submitted to the drone station for loading, then the drones fly the package to the end consumer.
 - They provide an automated packaging handling platform that makes it simple to load drones for delivery.



- DroneUp helps enterprises build drone delivery networks for last mile delivery. Their drones can also provide inspection services.



- Manna Drone Delivery provides last mile drone delivery service that enables customers to order food from local restaurants/grocery stores and have them delivered to their house.



- Wingcopter provides an all-weather delivery drone that can withstand strong winds and rain. Their drone can deliver up to 6kg, has 110km of range and can travel at 100 km/h. They also provide a control station software that enables users to operate 10 drones at the same time.



What's Important

This section has received the most attention and has the most startups. A handful of these companies received funding from big retailers (Walmart) or logistic providers (UPS). Yet we haven't seen big deployments of these drones in consumer settings. Startups that are raising capital are focused on healthcare transport. Others are trying to generate their own interest by creating their own marketplace where consumers can order food/goods by drone.

Freight/Cargo Delivery

This section highlights startups that are building drones that can deliver larger payloads. Here are some examples.

- Elroy Air develops autonomous cargo aircraft systems with vertical take-off and landing. Their drones can carry 300–500lbs of cargo over a 300-mile range. Their drone can also land, deposit cargo, pick up another load, and take-off again without an operator.



- Natilus is building an autonomous blended-wing, autonomous global air freight system. Their vehicles can transport between 5-210 tons and can fly between 900-5k miles.



- Volansi develops infrastructure-independent drones that can take off and land vertically. Their drones are capable of transporting heavy payloads over long distances.



- MightyFly provides a hybrid-electric vertical take-off and landing aircraft that can perform middle-mile, mid-range deliveries. Their drones can carry up to 500 pounds, travel 600 miles at 150 mph.



- Camp Six Labs is developing an aerial freight transportation network. Powered by unmanned aircraft designed to deliver 500 lb. of payload 500 miles away.

What's Important

This section seems to have a rising interest from the military. Drones in this category tend to raise a lot more capital but we've yet to see large commercial deployments from a handful of these companies after a couple years. This highlights the complexity of building such products.

Other

This section highlights startups that utilize drones for other logistic applications. Here are some examples.

- Ware provides an autonomous drone that can fly around users' warehouses and count inventory. Their drones can take pictures of stock and they also provide a dashboard to manage drone operations.



- Gather AI provides an autonomous drone that can map out users' warehouses, count inventory and measure the temperature of packages.



Feature

This section highlights the unique hardware, software and service features of startups within this category. Below is the breakdown.

Device Features

This section highlights unique hardware features of startups in this category. Here are some examples.

- Natilus offers an efficient blended wing body configuration that allows for 60% more volume. The aircraft can hold a large configuration of standard pallets, outsized cargo, and without a contouring requirement.
- Zipline embedded a custom-built navigation system that uses onboard flight components and relative positioning. Every drone can autonomously determine where it is in 3-dimensional space down to a single centimeter.
- Wingcopter can carry and drop multiple packages at the same time.

Software Features

This section highlights unique software features of startups in this category. Here are some examples.

- Wingcopter, Gather AI, Manna Drone Delivery, DroneUp, Deuce Drone, MightyFly, Ware, Flirtey, Natilus, Xunyi, Matternet and Flytrex drones fly completely autonomously to deliver products.
- Elroy Air drones can land, deposit cargo, pick up another load, and take-off again without an operator.
- Zipline drones can predict bad weather and route autonomously around the weather.

Service Features

This section highlights unique services of startups in this category. Here are some examples.

- Manna Drone Delivery and Flytrex provide a marketplace that allows users to order food from their local restaurant.

- Xunyi also provides a ground delivery robot.
- Deuce Drone provides an automated packaging handling platform that makes it simple to load drones for delivery.
- DroneUp's drones can perform building/industrial inspection services.

What's Important

All startups are focused on how to build completely autonomous drones. You'll also notice last mile delivery startups are launching their own marketplaces to bolster delivery usage of their drones.

Use Case

This section highlights who are the target customers of startups in this category. Majority of startups are building products that cater to the industries below. There are a handful of specific use cases that exist but are not worth mentioning.

Healthcare

Many startups seem to focus on healthcare delivery services. There seems to be a market for drone services primarily here.

- [Wingcopter](#), [MightyFly](#), Elroy Air, Matternet, Zipline, Flirtey, Volansi

Logistics

All startups are interested in working with logistic providers. This is for both parcel and cargo delivery drones.

- [Wingcopter](#), [Gather AI](#), [MightyFly](#), [Ware](#), Natilus, Elroy Air, Matternet, Xunyi, Volansi, [Camp Six Labs](#)

Consumer/Retail

Many of the small delivery drones are trying to break into the consumer/retail last mile delivery services.

- Flytrex, Matternet, Xunyi, Zipline, Flirtey, [Deuce Drone](#), [DroneUp](#), [Manna Drone Delivery](#), [Wingcopter](#)

Industrial

Most cargo drones cater to industrial delivery use cases.

- Elroy Air, Volansi, [DroneUp](#), [Camp Six Labs](#)

Military

Most cargo drones cater to military use cases.

- Elroy Air, Volansi, [Camp Six Labs](#)

Blockchain Logistics

Category Definition: The Blockchain Logistics category highlights all startups that utilize blockchain for supply chain applications. The following content will breakdown the function, features and use cases of every startup recognized to showcase how they differentiate.

Important Updates:

We've seen almost 1/3 of blockchain startups close since we first started tracking companies. We've failed to see major applications for blockchain companies within the supply chain outside of traceability. Where we see a product market fit within traceability - but even these companies rely on asset tracking devices or external platforms to collect/store data on the blockchain. A rising application seems to be compliance but blockchain is simply a feature for other categories in this report.

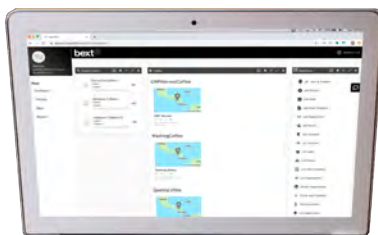
Function

This section highlights the primary function of startups in this category. Below is the breakdown.

Traceability

This section highlights startups that enable consumers/retailers/stakeholders to track products through their lifecycle. Here are some examples.

- Bext360 provides supply chain traceability software that keeps product information/movement on a blockchain record. Users can analyze products, assign quality scores, capture weight of product sold, and pay farmers directly for what is sold.



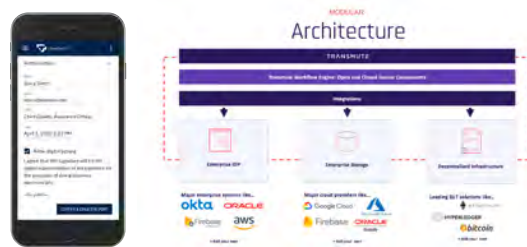
- Provenance's platform provides trustworthy information about origin, journey and impact of products. Modules of their platform includes:
 - Interface for customers that can visualize product journey, verify product claims, share proof/stories/suppliers, and more. They can integrate this information across a variety of channels.
 - Analytics dashboard to help users view customer preferences.



- Lumachain provides a food traceability platform for the meat industry. They use a variety of tools to collect product information including image recognition, NLP and AI. They then store this data on a blockchain as an immutable record.
- Ripe.io provides a food track and trace platform. They provide a mobile application that helps users view and upload data. They also provide a dashboard that enables users to visualize food lifecycle through the supply chain.



- Chainvine provides a digital platform that manages supply chain data across different industries. Their platform can record vital data such as time, location, and geographic borders of products or contracts/documents between parties.
- OpenPort provides a smart contract platform that enables transport management technology to record shipment events in real-time. Users can tender/manage shipments, plan and consolidate loads, configure assets and driver resources, track/report shipment status, and more. Modules of their platform includes:
 - Track and trace tools that provide status updates of shipment events regardless of the data source.
 - Marketplace to send/receive multiple target rates to shippers/transporters.
 - Electronic proof of delivery.
- Transmute integrates with existing systems to verify and trace all people, vendors, devices, and assets in a company's ecosystem. Users connect their existing ecosystem, verifiable credentials are given to individuals/entities/documents/etc and their platform can integrate into business workflows. They store credentials on a variety of blockchain protocols.



- Vechain allows logistic providers and distributors to store relevant data before it reaches its destination. Consumer rights are protected simply by scanning a QR Code or NFC Chip which provides authentic and valuable information to the entire timeline starting from the source, storage, and logistics process at the fingertips.
- ICIX provides a consumer goods traceability platform.

Delivery Marketplace

This section highlights startups that provide a delivery marketplace. Here are some examples.

- LaneAxis is building a brokerless direct freight network. They enable shippers and carriers to create an account and post/accept shipment requests. All business and shipment rules are written into the smart contracts, including agreement terms, record keeping and payment release to Carriers. Other modules include:

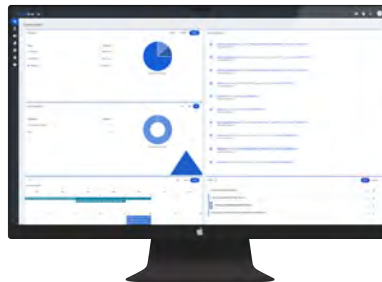
- They created an AXIS Utility token that serves as an API access key for the blockchain ecosystem. It also facilitates transactions and access to data, and is used as a vehicle to run applications. For example, if a carrier wants to check on a proof of pickup he needs to access the database/blockchain, and will submit fractions of an AXIS Token to do so. Similarly, a Shipper would submit fractions of a token to validate documents and deliveries.
- They also utilize NFTs to validate barcodes, QR codes, and RFID chips, among other applications.
- Their marketplace includes load management/tracking, rate negotiation, contract control, fleet management, document management, analytics and more.



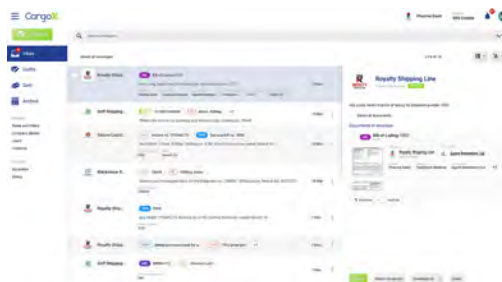
Document Management

This section highlights startups that provide document management tools. Here are some examples.

- Tradeline's platform helps users manage all documents/processes in the physical post-trade life cycle. The platform covers everything from trade entry, contracts, confirmations to logistics, voyage/vessel management and trade finance. Counterparties can add data and upload/share necessary documents to share with other stakeholders.



- CargoX's platform enables users to upload documents to the blockchain and share with relevant parties. Users can upload/create documents and transact them in a trustworthy, decentralized environment with a clear audit trail for all participants involved.

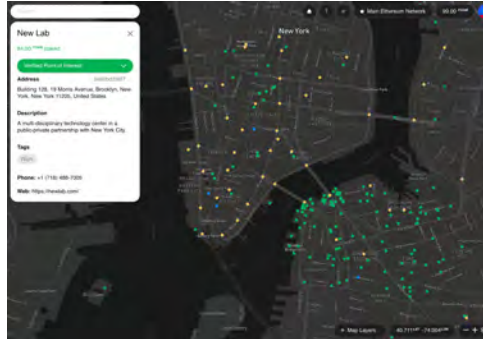


Geolocation

This section highlights startups that provide mapping services. Here are some examples.

- FOAM provides a decentralized map and location services. Modules of their platform includes:
 - A community-verified registry of crowdsourced places

- A permissionless and autonomous network of radios that offer secure location services through time synchronization



Transportation Platform

This section highlights startups that provide transportation platforms. Here are some examples.

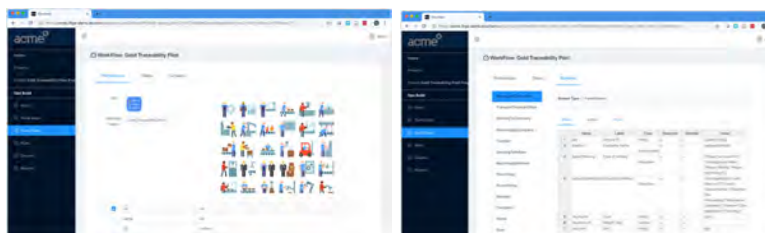
- Dav protocol allows anyone to utilize transportation services or put their own manned or autonomous vehicles on the network, creating a decentralized peer-to-peer transportation ecosystem. They provide a verifiable ledger of historical data for service providers, payment infrastructure, and more.



Project Management

This section highlights startups that provide project management tools. Here are some examples.

- Skuchain's platform enables users to link/manage procurement/contract management, financing arrangements, direct enterprise control of corporate payments and inventory tracking.



Use Case

This section highlights who are the target customers of startups in this category. Majority of startups are building products that cater to the industries below. There are a handful of specific use cases that exist but are not worth mentioning.

Logistic Providers

- **OpenPort**, Dav, Skuchain

Shippers/Carriers

- [LaneAxis](#), [OpenPort](#)

General Supply Chain Stakeholders

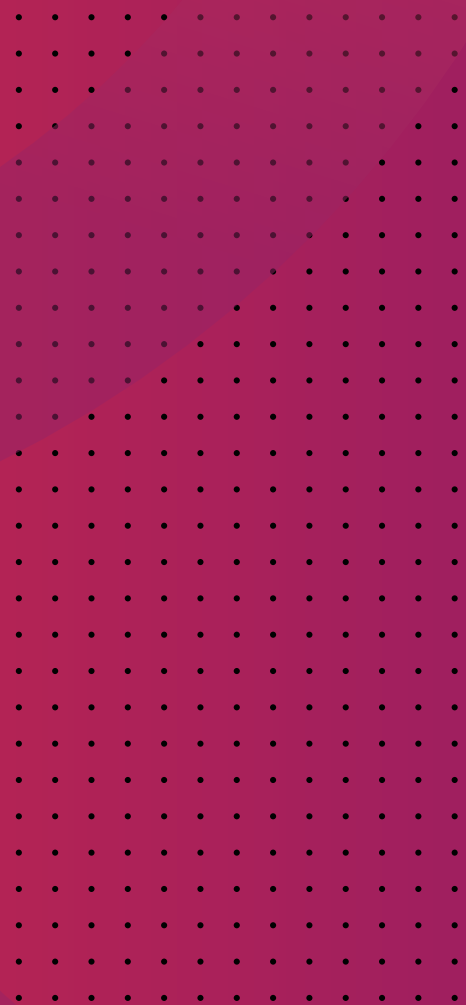
- [Transmute](#), [Tradeline](#), [Chainvine](#), [OpenPort](#), [Bext360](#), [FOAM](#), [Provenance](#), [CargoX](#), [Skuchain](#)

Agriculture

- [Lumachain](#), [Ripe.io](#), [Bext360](#)

Consumer

- [Dav](#), [Provenance](#)



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