

Bright or blight?

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The year 2019, when the valuations of various freight transport-related start-ups were sky high, and every little innovation was hailed as a revolutionary change, felt so “century ago” by March 2020, all because of the coronavirus pandemic (COVID-19). To understand what will be valuable in freight tech space, it is necessary to speculate on what will be happening with the economies and the trade. Here are a few guesses.

Each country undertook different strategies around the lockouts and introduced restrictions on the movement of cargo as well as people transporting the freight at different times. Easing of those restrictions will also happen at varying speeds, with no synchronization between states when it comes to which restrictions will be eased at any given time. Lockouts have dampened and reconfigured demand for goods, making transport and warehouse

capacity forecasting complicated due to the lack of similar history from which to learn. Compliance will become more complex with the addition of new health and freight handling certificates alternating from nation to nation – and in some cases, between administrative regions of the same country. Networked services cancelled by transport companies over the last couple of months will not be restored all at once, and some A-B or loop services may not even come back

at all. Physical contact will be frowned upon in professional environments. There will be many other changes, but let's just take only the above into consideration.

Rather than dissecting current and future value of specific technologies, I've focused on key problems faced by start-ups and assessed the future of a few distinct segments of freight management, so that companies thinking of engaging start-ups in these challenging times can make better selection decisions.

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Financing

According to various surveys, early-stage funding for start-ups is drying up, shrinking by about 20%, even if there is still cash available to be invested. The investors are clearly edgy and choosier, but most freight-tech start-ups don't have enough cash from ongoing sales to stay afloat and invest in growth, so significant injections of new funds are vital. The pandemic quickly sifted those start-ups into "worth keeping alive" and those "not worth additional

investment." Anything vaguely related to the virus pandemic response is still getting investors' attention, but "non-essential" innovation ends up in the "next day" pile. To understand it, think about essential freight services where people would normally be working in close proximity or frequently contacting each other. Among the freight-tech start-ups, not many will be able to hitch their story to the virus and essential service criteria. To my mind, autonomous delivery,

autonomous warehousing/distribution, and robotic process automation remain in contention. Product source assurance and tracing are hot, too, as thanks to unscrupulous suppliers of medical supplies and equipment in exporting countries, sub-standard and fake parts keep entering the essential supply chains. Knowledge about freight handlers and their health status at the time of specific interactions with specific freight will gain urgent importance.

Staffing

When the start-up universe booms, skilled hi-tech workers choose the sides quickly as greater freedoms and promise of cashing in on an IPO riches easily win against slaving for larger, stodgier tech companies. In the world affected

by lockouts and exclusions, the situation reverses, as working for cashed-up companies like Amazon, Alibaba, Microsoft, or Apple is decidedly more comforting than working for a start-up running out of cash at a frightening rate. The

uncertainty enveloping the immediate needs, and the fuzzy future over the next 12-18 months give well-capitalized tech-companies a chance to selectively poach skilled workers uncertain of their day-to-day existence at grounded small plays.

Scoping

The scope of the problem tackled by a typical freight-tech start-up is driven by a simple philosophy – find a defined market that seems to be behind on digitalizing, and then define a hole in that market that could be filled by a technology with which the founders are familiar. Some of those holes may not be as critical, so find one friendly company that promises to use it, then relentlessly knock on potential investors' doors

using that key early prospect as a proof point of the overwhelming need for a solution, or more specifically, your start-up's solution. Sustaining industry's interest in the solution is possible, as long as new prospects keep signing up to give your solution a test run.

In the fully globalized world of trade full of companies interested in getting ahead of the competitors, hitting a potential prospect is like shooting a fish in the barrel. In the

pandemic response-driven world of closed borders, physical and soft restrictions on cargo movements and people moving that freight, and wholesale shutdown of services serving the freight economy, that agile model of throwing something together and seeing what works and what doesn't is fraught with failure at every step. Appetite for risk among the testers and the buyers may remain low over the next 12 to 24 months. The urgency

of immediate and noticeable results will get prioritized ahead of long-term uncertainty of outcome, even if theoretically

delivering bigger payout to the buyer and the investors. Let's sum up by saying that anything long-term offering a cosmic leap

is out, and anything short-term with the immediate benefit of delivering rapid, tangible benefit is in, in this uncertain world.

Selling model

Every start-up experienced the "let-us-try-before-we-decide" attitudes and the endless pilots requiring an extraordinary amount of attention committed to making the prospect satisfied and willing to spend their money. Working jointly with the customer, frequently at the same

physical location, is often required to ensure a smooth path to internal acceptance of the proposed innovation. Social distancing, domestic and international restrictions on the movement of people, and cancellation of travel options that will last throughout 2020 have put a stop to activities requiring

personal contacts. Selling, demonstrating, piloting, implementing, and supporting over video calls and remote computing is not the strong suit of every start-up, so lack of flexible selling model will doom companies that were not prepared for operating in such a challenging environment.

Investors pushing further R&D

The most interesting start-up groups discussed herewith may not be perfect, yet informative enough to give a good

sense of their viability to attract new cash injections pushing further research and development, rather than the

capability of any individual start-up within the group to attract new rounds of funding.

Freight e-commerce

This group includes marketplaces matching shippers and transporters, transport management platforms, and "digital forwarders." This category seems to hold the interest of investors and attract funding on the basis of thinking that where there is an overcapacity of supply, technology is better at finding deals on cargo routings. The shippers don't waste time searching themselves and are fine with the service fees collected by the digital middlemen. The problem for those businesses is that there is not enough money in matchmaking alone. With low barriers to enter and big expectations of fast riches, expect start-ups continuing to enter the marketplace space in road transport and to a lesser extent in sea transport. Just like in the case of Convoy or Uber Freight, investors will be looking at the size of the network (number of drivers) and network growth rate without the start-up giving out much in driver sign-up promotions and customer sales promotions. The pandemic has also brought to light needs to certify and assure the health of the workers travelling with and touching the freight, as well as certification of safety of the cargo itself. Capacity matchmaker platforms with the capability of collecting, maintaining, and presenting on-demand those assurances

in a digital format would be much more valuable, as long as fear of pandemic re-occurrence remains high. There will be decent exit strategies for these investments, as larger companies will also try to grow by acquiring smaller companies with solid regional networks. However, valuations vary greatly, and head-to-head competitive differentiations will be important (e.g. Convoy vs Transfix or Sennder vs FreightHub) in mapping out investor's exit strategies.

Above the matchmakers are supply chain orchestrators. That was always a much harder gig, as newcomers like, e.g., Haven, FLEXE, and various incumbent transportation management systems have experienced. Since responses to pandemic varied so much from country to country and from week to week, orchestration of supply chain decisions based on analysis of history made less sense. It became apparent that supply chain orchestration solutions have to provide capabilities meeting two competing objectives: supporting real-time reactions, which can have myriad of long term unpredictable consequences, while using the same algorithms to maintain performance in slow-moving supply chains that are not as affected by logistics roadblocks put up overnight. Learning and

acting without sufficient or certain data is not the forte of current orchestration solutions, so I would expect some start-ups wanting to give it a go, but the time required to prove it works may discourage investors looking for a faster pay-off on their investments. Still, good investor exit strategies exist in this space, as demonstrated by transactions of INTTRA (sold to E2Open) or Kuebix (sold to Trimble).

Last but not least, there's the layer of a "digital forwarder" pioneered by Softbank's investment Flexport. Thus far, being "better" by virtue of their better use of data and significantly higher profit margins than the less digitalized peers has not proven to be a great advantage in the days of upheaval across supply and demand. Having solid relationships, rather than fast application programming interfaces, has proven as efficient and as important in obtaining scarce capacity, preferential routings, and preferable transit times. With incumbents remaining unperturbed by the presence of Flexport, and not really pushing dramatic innovations on their own, I would not expect investors willing to give it another go at this scale of funding until a more convincing case for a different type of freight forwarder materializes.

Visibility (cargo and equipment)

Workforce and factory lockouts have exacerbated imbalances in equipment (container, tank, pallet) and the need to find it quickly and close by to where it is needed. Since laden equipment becomes empty and available at some point, start-ups capable of tracking both and offering services in finding

specialized equipment as it is moving around are doing good trade and will keep attracting investors and new entrants trying to disrupt earlier entrants and captive innovations. Predicting when a particular piece of equipment becomes empty and available is as important as picking up and scheduling

transport to demand location. In times of restrictions on movement, facilitating the transaction as well as physical repositioning should produce a spike in revenues and margins, something that keeps investors interested. Start-ups doing only one side of the trade (finding empty container but not offering

tracking laden) will progressively lose value.

When it comes to cargo tracking, the pandemic delivered perfect proof points for medical and personal protective equipment supply chains needing the same protection

and backward traceability as food supply chains, but whether the interest in having solid solutions for this last long enough for specialized start-ups and their investors to enter is less clear. At this moment, any

healthcare provider is happy to receive donations of protective masks and hardly anybody checks if they are good enough for the quality standards required. Once peak demands go down, so might the interest of innovators.

Sensors/Internet of Things

This category was hot for a while with Traxens, Identec, and Impinj at the front of the pack. Sensors alone are not

sufficient to make freight-related decisions, so it will be interesting to see data analytics/machine learning specialists

trying to acquire sensors builders and create better mousetrap for investors and potential buyers.

Automated/autonomous warehousing

Warehousing has already been on its way to becoming a robot-land. Predictions of 25% of warehouses globally being entirely or partly operated by robots within the next few years could be adjusted upwards thanks to the pandemic. Warehouse robotics is a crowded, fragmented field that will not be easy to consolidate due to proprietary technology making the robots to operate and communicate.

This field seems to be big enough to keep the large players like ABB, Knapp, or Siemens busy, but there are also exciting start-ups. Seegrid and Locus Robotics got off to a good start on autonomous warehouse robotics equipment, but turnkey lights-out mini-fulfilment centres pitched by Fabric or Intelligranted would be of equal interest to investors given the explosive increase in e-commerce volumes, which

will persist long after the lockdowns end.

Also, look out for software-only plays pitching Artificial Intelligence this-or-that, making the robotic hardware more skilled at tasks requiring human hand agility. The interesting work in this area done by Rutgers University-New Brunswick – using a Kuka robotic arm to tightly pack objects from a bin into a shipping order box – will be of interest to commercial developers.

“Not so automated” last mile delivery

The e-commerce volumes are skyrocketing. It may be that people are buying more things on the web out of sheer boredom. Browsing virtual stores is painless, and the credit card payment is not due until the 1st of the month. Delivering all these packages takes an army of people, not machines. That swarm is now cheaper than ever thanks to many other less skill demanding jobs being mothballed.

Investments in Doordash, Postmates, Loggi, Bringg, and thousands of others in this category appear promising if you solely look at the volumes, but competition is fierce, so profits could be minimal and shrinking – if there ever were any profits in the first place. Amazon offering people to leave with \$20k to start their own local delivery business did a great job increasing the number of competitors

and lowering the fees that those businesses can negotiate.

Start-ups pitch delivery optimization algorithms as a differentiator, but math is open to all, and any advantage can be wiped out in a matter of weeks if the competition is determined enough. This is the business of racing to the bottom on fees, so serious investors may want to collect returns quickly and exit for greener pastures.

Automated/autonomous last mile delivery

Breaking the chain of infections requires humans to stay apart. That is, however, hard in the process of delivery of goods. Touching the stylus of the handheld terminal to sign for the package is fraught with the danger of virus transmission as well as handling any form of cash on delivery payment at the door. Unattended delivery left farther away from the buyer's door attracts thieves. Acrosting a slow, ambling delivery robot seems like a child's play. Drone delivery in dense urban environments remains a challenge, but

that is exactly where the virus fear is the greatest, the number of infections the highest, enforcement of people's movement the strictest, and e-commerce order deliveries most popular.

I am afraid that with the massive unemployment on the way, the door-to-door delivery services will attract enough desperate drivers, bikers, and walkers to keep the deliveries cheaper than the cost of developing autonomous drones and robots fulfilling the same task. Can companies like Starship or Matternet

continue attracting new investments in the light of little economic sense to develop sophisticated computing and sensing on a vehicle that delivers a single parcel? Does it make more sense to invest in a company like udely, which is trying to do the same in van-sized units? Fear of touching something that was touched by someone unknown before may persist in some societies for months, so investors and companies experimenting with those delivery technologies should think hard about how much they are willing to invest.



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