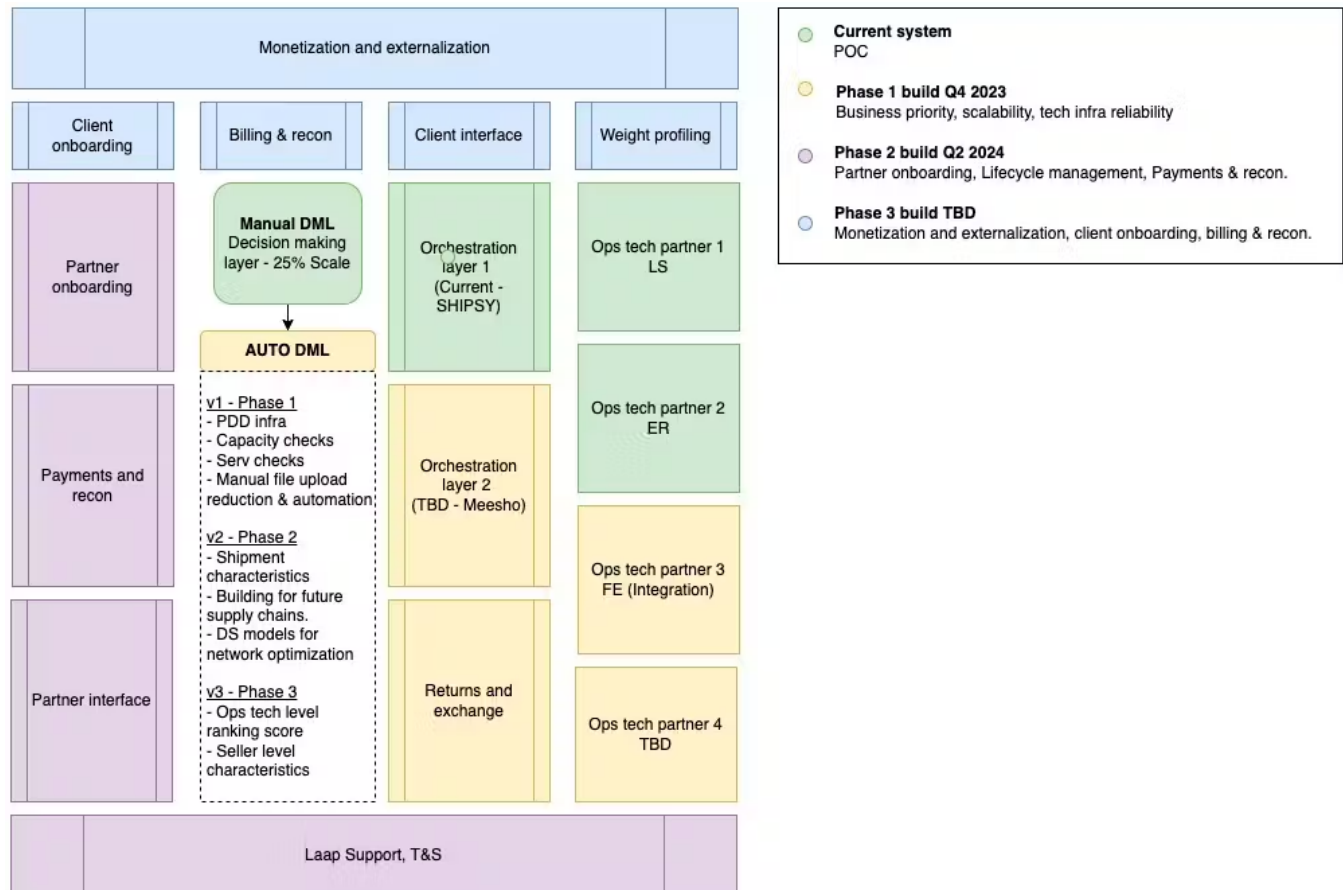


Modular Layers

Layers in the end state

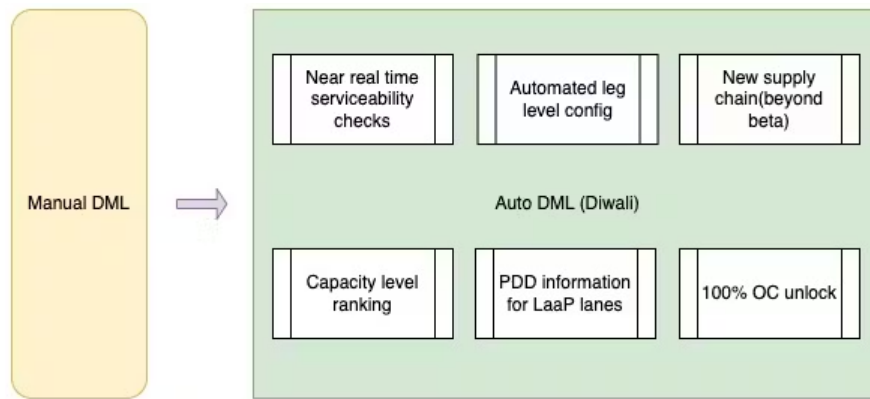


Understanding key layers

1. Automated Decision Making Layer (DML)

One of the core end-state visions for LaaP is to have it's own intelligent decision making layer (DML) which can decide the most efficient, lowest cost supply chain to be selected basis an order persona. The approach taken here is to consider multiple input parameters like serviceability, weight profile, SSCAT level nuances, seller size, location, LaaP network design i.e ops tech presence in a region, lane level pricing, lane level TAT etc. to decide the best supply chain for the given order. Given this, building the DML will be a complex & long term effort both from a product and tech perspective. Also, since the ceiling on the current manual DML is 15-20%, it is paramount that we start investing and moving towards building Auto DML now.

The problems we intend to solve with the Auto DML include -



- Building a serviceability infra - The current infra for DML does not take into account the real time serviceability changes happening at the ops layer on ground hence sometimes resulting in downstream manifestation errors post order creation. This would be critical to be solved at scale.
- Unlock 100% OC scalability - The current DML has a ceiling of 15-20% OC owing to large number of configuration entries at every seller ID level leading to high computation time and possibly timeouts. Since we had initially kept "Speed over perfection" as a mantra while building the DML, it would now be critical to build a more scalable infra for LaaP DML, one which doesn't have to depend on manual file uploads for estimating the right lane configuration for a LaaP order but is in turn able to intelligently compute the final output based on inputs + characteristics/features given by the system. This will enable us to scale to 100% OC on LaaP.
- Lane level capacity control on 3PLs - Every lane operates on a capacity governed by the 3PL on ground. More often than not, this capacity is breached and needs to be restricted by the ground ops to reduce overload on operations. This check currently resides on the orchestration layer which results in post facto corrections(after order has been created and pushed to laap) hence leading to errors post order creation. To choke such scenarios, it would be pivotal to build a lane x 3PL level capacity ranking layer which would inhibit an order being pushed to a certain 3PL once the capacity has been breached.
- PDD information for LaaP Lanes
Currently the LaaP infrastructure doesn't support entering PDD values. For LaaP orders, the best serviceable e2e 3PLs PDD value is taken which creates higher breach as in certain new lanes, LaaP is slower than non-laap. This affect breach% and increases RTO% as well. With the auto DML infrastructure, we intend to develop an additional input layer to account for this as well.
- New supply chains - In the current DML infrastructure , we are able to choose 3 different vendors to operate FM, MM and LM legs of operations. However, with increasing network design complexities, more operational nodes will be needed (Currently, each shipment touches 4 operations hubs - this can go up to 6-7 hubs for 30% OC). To enable this via tech, we need to increase count of nodes in DML, which will be solved via auto DML.

Additionally we also intend to keep the following design principles in check -

- Modular to incorporate any new supply chain in the network design.
- Limit manual file uploads to reduce human errors.
- Capability to work with multiple orchestration layers.
- Develop experience score for 3PLs on their output metrics.

The automated DML will not just help us unlock the next 60-70% OC on LaaP but also build the next set of intelligence for future supply chains.

2. Partner onboarding & ancillary layers

As we increase the OC% on LaaP further, the need for developing a scalable process for onboarding new partners/vendors will become more imminent. With increased OC%, we would need partners handling more volume, absorb more change and have increased reachability in terms of serviceability. Additionally, an infrastructure to push out partner payments, handle recons, manage KYC based onboarding will also be required. This entire framework will enable us to manage the LaaP at scale while also giving us more optionality in partners to absorb key man risks and volume fluctuations.

3. Client onboarding and ancillary layers

Developing the client onboarding infrastructure will be key for externalising and monetising LaaP. A website to speak about the services offered in LaaP, an internal sales reach out funnel for the clients interested, client information onboarding infrastructure, trip/shipment creating and tracking APIs + interface are few of the features that would need to get built before LaaP can be externalised. Along with this, a billing and liability management (reconciliation) infrastructure would also be critical to complete the entire offering.

High level timelines

Phase	Description	Start	End date
Phase 1 - Business priority, scalability, tech infra reliability	<ul style="list-style-type: none">• In-house Orchestration layer 2• Ops tech partner 3 - FE integration and launch• Ops tech partner 4 - TBD• Auto DML v1• Return and exchanges.	1/1/2023	12/31/2023
Phase 2 - Partner onboarding, Lifecycle management, Payments & recon.	<ul style="list-style-type: none">• Partner onboarding• Partner interface• Payments and recon• Support, T&S	11/1/2023	6/30/2024
Phase 3 - Monetization and externalization, client onboarding, billing & recon.	<ul style="list-style-type: none">• Client interface• Client onboarding• Billing and recon• Client Support, Success	TBD	TBD
Phase 4 - Building more competition around ops tech layers	<ul style="list-style-type: none">• IEEE kind of framework (guiding framework)• Plug and play ecosystem	TBD	TBD