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WEAVE SERVICES LIMITED PRESENTS:

FMCG DISTRIBUTION

Is your last mile optimized?

Practical outlook on how to make the most of your resources in last mile delivery

Last mile fulfillment is 11% of CPG gross sales

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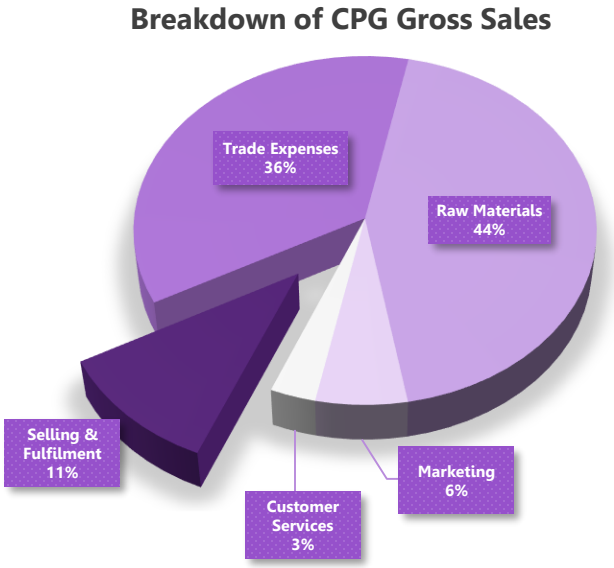
Last Mile

The term "last mile" has taken on a different meaning in the last 10 years with the emergence of ecommerce. While an FMCG last mile was all about getting the right product to the right store, nowadays, the term is being used for getting that product to the "right" customer home as well. This whitepaper will be analysing the traditional last mile delivery in the FMCG and CPG industries, where distribution margins are hit heavier due to these companies not being able to do differential charging unlike the ecommerce companies who can recover the last mile costs.

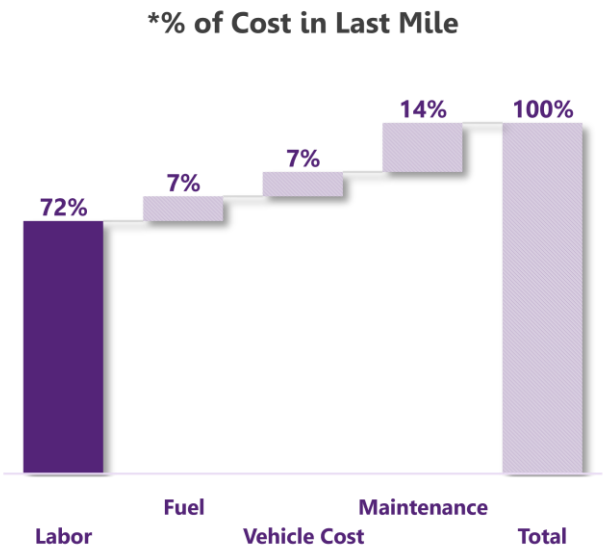


The Faster Mile

Today, last mile has taken on more importance than ever before for CPG and FMCG industries. Products have to get to the shelves instantly as data from all channels feed in at lightning speed, and business decisions have to be made in an agile manner. This puts a heavy burden on traditional distribution channels. As read-and-react cycles get shorter, last mile has to match this speed with its ability to fulfil and deliver the orders.

The not-so-hidden costs

Last mile is still a heavily labour dominant part of the fast moving consumer goods supply chain. From picking the product to delivering it, multiple touch points add into this labour cost. While some may not consider stocking the shelves as a part of last mile, how the product is handled up to this point can make the stocking and shelving process significantly inefficient and arduous as well. Often times, cost associated with last mile are attributed to equipment such as vehicle, or order picking and delivering tools. However, to uncover the unproductive labour time, one can trace every step of a driver's day to see the bottlenecks and non value add activities that add on to the day.



Routing software is not the silver bullet

Due to the "on the road" nature of last mile operations, one of the most common tools to be deployed in last mile delivery is a routing software that can compute the most efficient route based on the time windows, drop sizes and fleet capacity. While the perceived benefit is directly taking out the mileage off the road, it does come with a hefty price tag and a need to constantly update attributes to the system. An organization can do a multitude of improvements before getting into this commitment.

The focus is driver's utilization

Driver's time is valuable...

Drivers are generally paid at a higher rate than others in the last mile value chain. Therefore, their time should be used for the value their expertise brings. The work of a driver on a regular day can be as diverse as follows:

Soft Skills

- Dealing with store employees at the backrooms of the stores, build and keep these relationships
- Ability to make quick decisions based on traffic and load conditions to adhere to the agreed delivery windows

Technical Skills

- Driving a specialized truck that requires a different class of license than passenger vehicles
- Knowledge of FMCG / Food product handling especially if they are multi-temperature controlled

Labour Intensive

- Operation of customer's equipment at the drop points
- Heavy lifting / labour intensive work on a time pressure at the customer location

Considering the value proposition of a driver is important in optimizing their time in the last mile logistics. The time saved can then be invested on value added activities such as better handling of the products that would improve the delivery conditions and reduce damages.

A day in the life of a driver is stretched over three sections

1 Delivery planning

A milk-run style last mile delivery is best optimized by a flower petal delivery route. Maximizing the drop per mile, the time it takes the driver to reach the destination could also be further improved by dynamic routing software (DRS). DRS can have a multidimensional attribute system, such as load balance, fleet size and time windows. More recently, technology and Google has enabled us to have real time road conditions, closures and traffic information that would create a route in the most optimized way real time.

2 Pick Up Operations

The goal of the pick up process, whether it's the early morning or night shift, should be getting in and out of the warehouse area, grab the keys, sign on and drive away as quickly as possible. Their valuable time should be used for the expertise they are being paid for. The rule of thumb to make this section of the day efficient would be to keep all equipment and necessary items at a standardized location for the drivers to come in and find. Clearing the way of the driver physically and procedural wise is a must.

3 On the road and delivery

Collecting data on the daily route can uncover a lot of factors that affect the driver's routine and bottlenecks. Analysing stop variations on a daily and type-of-stop basis, would show inefficiencies on how drivers deal with different delivery types. Measuring the delays at the customer locations on a daily and hourly basis would give valuable insights to the planning team on the daily delivery planning. This would then create the basis for working with customers to systemically remove inefficiencies. Partnering with customers is the key to making the at-stop procedures productive. A number of obstacles can be eliminated through contract negotiations, waiting for proof of delivery, manual box counting and adjusting the time windows.

Case Study

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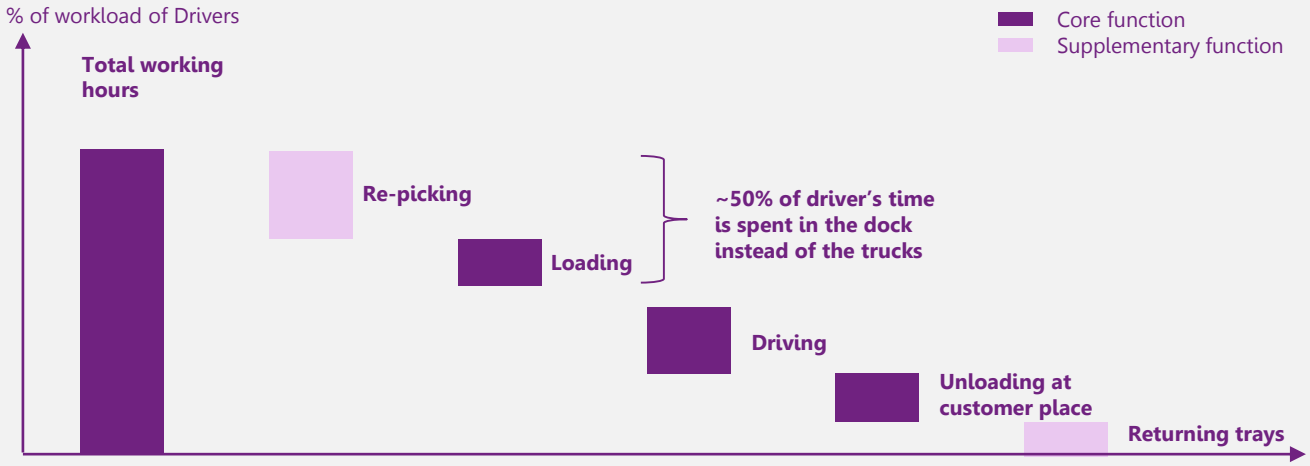
By following the logic from above and following the daily routine of the drivers, Weave recently carried out a diagnostic with one of the largest food manufacturers in Asia. Within a one day diagnostic, we were able to find the following opportunities:



1 At the high level: delivery planning

Issue 1: No MOQ set. Potential very **high cost to serve** and inefficient ($) deliveries

Issue 2: Manual drivers scheduling leading to **workload imbalance** between drivers

Issue 3: Delivery routing is not optimized according to distance / # of stops

2 At dock: Pick Up operations

Issue 1: **Mismatch** of roles & responsibilities between drivers and warehouse operations

Issue 2: Inefficient processes in the pick up location due to layout

Issue 3: Inefficient **picking process** at the front end

3 On the road and delivery

Issue 1: Lack of visibility and high variation of **drivers' processes**

Issue 2: Productivity loss due to **customers** (No proper parking, No presence of reception)

Issue 3: Lack of **performance management** of drivers

Key improvement is within the dock operations

Analysis showed us that the core functions that the drivers are paid amounted to less than half of their day. They are actually doing picking processes.

Firstly, by switching some of these functions to a lower paid team would immediately reduce costs and improve margins. Furthermore picking process knowledge is not in the drivers' primary competency domain, which resulted in low efficiency.

✓ Saving via using a cheaper labor force **~400K USD**

✓ Saving via improving the picking process to industry standard **~1.2M USD**

* Analysis: Weave diagnostic of one of the largest food companies in Asia

What does a roadmap to excellence look like?

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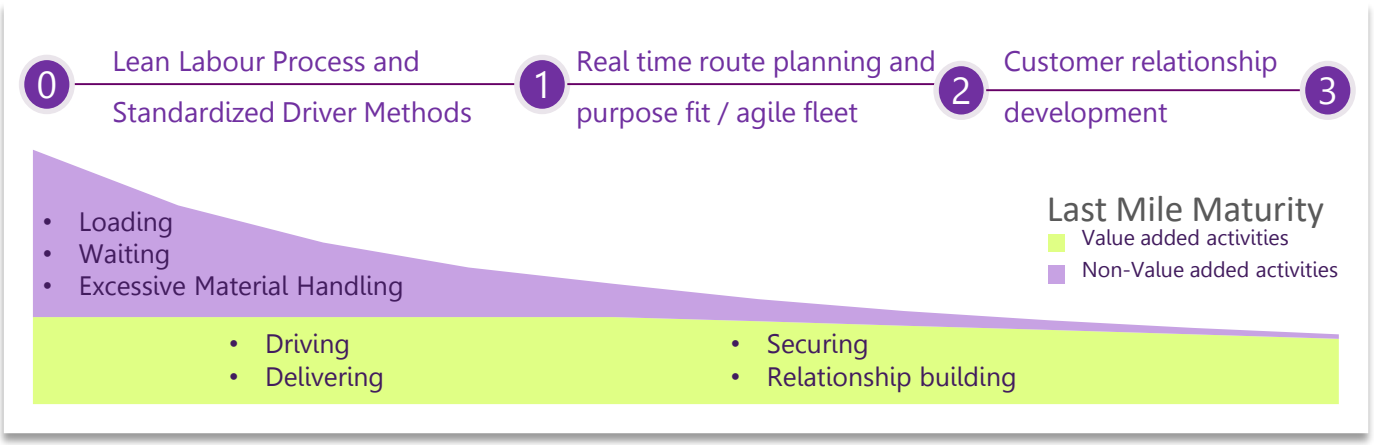
We can divide the different parts of the driver's day, and come up with some practical applications of what an excellence would look like utilizing the lean methodology. However there are always potential challenges and issues with large scale improvements that need to be aware of.

Stage	Delivery Planning	Pick Up	On the road and Delivery
Good	• Quarterly route analysis per local knowledge • Daily route planning per local knowledge	• Optimized picking and loading logic to minimize shuffling products • Minimal Product handling	• Purpose fit equipment for delivery handling • Minimal equipment handling
Better	• Daily routing • Flexible time window adjustment between stops	• No truck moves • Trust preparation and safety checks standardized	• Time Window optimization • Guaranteed delivery
Best	• Dynamic real time routing on truck GPS • Manual truck safety checks eliminated	• No product handling • No equipment / truck handling	• Purpose fit equipment for delivery handling • 100% Guaranteed delivery
Challenges	• Local and historical experience dependent individuals • High cost of GPS and automated safety devices	• Warehouse and parking space constraints • Aging fleet • High cost of GPS and automated safety devices	• Lack of central resources and systems to track customer process enhancements • Noncompliance by drivers to communicating delivery problems

As the non-value added activities are filtered out of the system, organizations will have to partner up internally with their planners, manufacturing teams and externally with their customer to make sure there are no bottlenecks that lead to non-value added situations like waiting, driving and excessive moving.



Right analysis and models needed for improvement

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Many industry leading companies are already well ahead in investing in their last mile.

Predictive data and autonomous machines have been implemented in the last mile picking

Target acquired Shipt, a last mile delivery start-up for 550M USD.

China based Global Logistics Properties, which serves as logistics and last mile provider for Amazon, Walmart, Unilever and Carrefour was recently bought out by a PE firm for 12B USD. Shows China's commitment to last mile delivery.

Last mile excellence is a journey, not a project. There will be number of short-term improvements that will come out after an end-to-end diagnostic is completed. However, the larger piece of the success will come when a holistic approach is integrated to the company's distribution efforts. Companies need to factor in their long-term strategy such as future product mix and packaging, renewal of fleet and how digitization can be integrated across their supply chain.

Defined

- Revamped picking logic with support of rack system
- ABC – XYZ product classification for better picking and loading allocation
- Waste analysis of the motion and transport within the Pick Up Area
- Maturity assessment of the logistics operations and planning and upskilling of supervisors
- Pick to Store / Pick to Stop product analysis

Refined

- GPS data analysis to analyze stop variation and root cause analysis
- Waste Analysis during delivery to improve driver methods
- Reduction of customer requirements (chop, case count, proof of delivery, etc.)
- MOQ Analysis per customer/stop and improved drop size MOQ
- Delivery window analysis
- Fleet make up analysis and optimization

Mastered

- A playbook for drivers' processes that lists most efficient daily routine
- RF Handguns for fast delivery and time tracking of drivers
- Owned/Leased fleet optimization
- Utilization of shared logistics providers (outsource models)
- Customer relationship team to reduce requirements on delivery to make deliveries faster
- ROI Analysis on:
  - Dynamic routing software
  - GPS navigation on trucks
  - Automated vehicle safety check to reduce time

0 — 1-3 months

Realize the need to improve operations and call on help

1 — 6 months

Build upon the analysis in the diagnostic phase

2 — 12 months

Internal and external stakeholder alignment and sustain improvements

3

Value / Non Value add activities as a result of processes and planning

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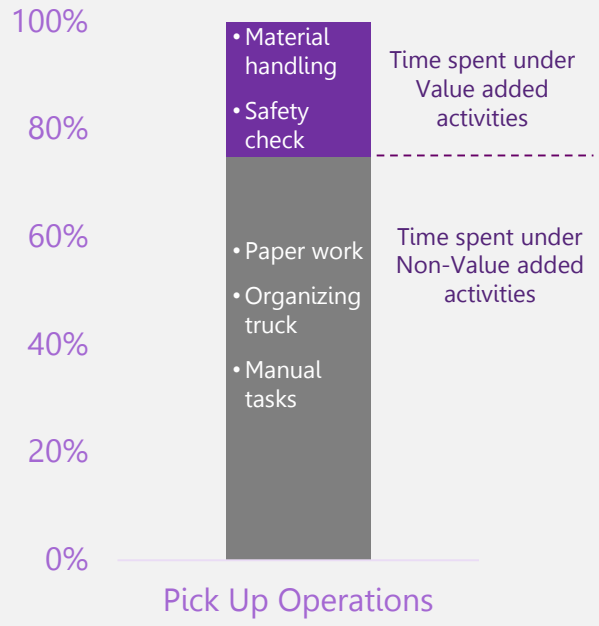
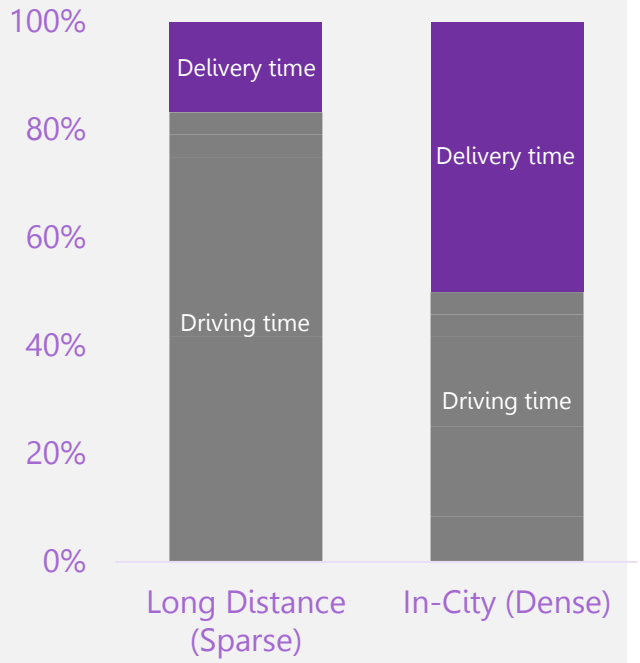
During the pick up and end of day operation most of the time can be taken up by manual tasks



Even if the material handling parts are minimized in a lean pick up operation, safety checks and paper work can lengthen the pick up process. Smart fleet solution providers minimize manual checks and paperwork as well as give advance notifications about truck health before breakdowns happen.

When on the road, driving and delivery time are main drivers while depending on the density of drops, they may differ



Urban deliveries are more frequent than rural deliveries. Companies who can maximize the drop per stop, will getting better pay for their money. One way to achieve this is to get deliveries of the same location on same days keeping in mind the maximum capacity of the delivery truck.

An integrated delivery planning will ensure the supply chain runs on lean principles, reducing the excess inventory build up, wasteful transportation and handling that comes with it along the value chain. This would require all departments to work together. A Sales and Operations Planning (S&OP) meeting ensures all departments' constraints and capacities are taken into consideration with both production capacity to delivery scheduling are linked. Raw material planning and production departments need to be aligned with daily production schedules that are tied to delivery planning. They have to be flexible to adjust according to the customer orders that would be changing depending on the "order cut off" times.

Urban vs Rural

Rural last mile delivery boasts a much larger mileage footprint than urban deliveries where multiple drop points can be a single stop. While this may feel like more "productive", factors like ease of parking, residential area restrictions, traffic, physical complexities of the buildings and back rooms still pose threat to the overall efficiency. On the flip side, while urban deliveries are more sparse and easier to deliver to a single location, the driving time is extra strain on labour time. Adding to this the equipment amortization makes these two types of deliveries in need for a different strategies.

Countries with large economies and land area, such as China and USA, will have to think of a mixed strategy of vehicles, drivers and helpers in order to eliminate different bottlenecks and meet needs of large-variance routes. In city-states like Hong Kong and Singapore, companies will have to clear out all route obstacles for the drivers to make rapid drops.

State-wide Delivery Route

City Delivery Route

Lock it out

Lock boxes with timed-personalized codes for customers to pick up their deliveries are spreading in urban areas for working households who are not available during normal delivery hours. Temperature-controlled lock boxes will be saving delivery companies substantial amount time in food and FMCG deliveries. Placed conveniently in a central location for multiple drop points, these boxes can be of convenience for both shippers and the stores. The concept can remove delivery windows, and instead create opportunity for the retailers to pick up the shipments during their downtime, improving their own efficiency as well.

The future...

While autonomous (driverless) vehicle deliveries may eliminate much of the labour "on the road", it can also contribute to increase in the capital and ongoing maintenance expenditures of the fleet. This trade-off should be analysed taking into consideration of the labour environment. Where labour is cheap, it may make sense to stick to traditional equipment, while in other places with higher labour cost driverless and labour-less distribution will save more than the capital expenses it incurs.

Companies like DHL already have advanced in their studies in how to move parcels with precision using drones. Drones can do immediate replenishment on higher priced but small volume products such as healthcare basics and gourmet food. In-store inventory trigger points can be set at even lower levels than now thanks to quick replenishment, reducing the burden on traditional delivery. MOQ per drone delivery would be key in ensuring this new approach is feasible. It would also be easier to land due to the large rooftops and parking lots. However, safety takes on even a higher focus as most of the shops would be in dense areas of the city, and high number of pedestrians around the store.

Weave Services is an end to end supply chain consultancy

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1 Locate and Prioritize

- What are the top 5 drivers of your cost structure?
- Are they aligned with your strategic values?
- Is there a gap between your cost base & those of competitors?

2 Design and Refine

- What is your 3-5 year cost transformation vision?
- Do you prioritize resources to exploring all opportunities?
- Does your team leverage data analytics to understand performance gaps?

3 Pilot and scale

- How do you communicate to ensure a consistent level of understanding?
- How do you scale small programs company-wide?
- What mechanisms are used to prevent processes reverting?

Weave use proven proprietary tools to help manufacturers through cost reduction challenges

Financial maturity assessments

Comprehensive assessment of factory from **strategy to operations**

Rapid deployment of concepts

Propriety **advanced analytics** solutions allow for quick deployment of POCs

Proven change management

We believe in practical actions and adopt a **learning-by-doing** approach

Weave drive IMPACT via 3 service offerings

CONSULTING

With **over 70 years** manufacturing experience under parent firm, TAL Group, Weave drive **practical & measurable impact** to operations

REPLENISHMENT & ANALYTICS

Expert data scientists to drive insights and create dashboards to enable effective decision making. A market leader in supply chain planning outsourcing

CAPABILITY BUILDING

Certified APICS trainers, proven change agents and leaders in competency improvement

Contact Weave to start on your journey today

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