WHAT ARE YOU MEASURING IN YOUR WAREHOUSE?

Uncover the expensive habits that are holding your business back

WAREHOUSES ARE CENTRAL TO SUPPLY CHAINS, serving as a mid-mile tether in maintaining a smooth flow of goods—both upstream and downstream. The speed of commerce and skyrocketing customer demand has placed intense pressure on supply chains, and the exponential growth of omnichannel and e-commerce has necessitated diversification in fulfilment methods and has also expedited the digital integration of warehousing.

Businesses need to respond fast to manage costs and more importantly, add value to services offered to the customer. The key challenge here is to keep operating costs predictable while volume increases and varies. A direct relationship between volume and cost is key to identifying operating trends in your operation.

A MADE4NET WHITEPAPER

AT MADE4NET, WE UNDERSTAND the need for efficient warehouse management to improve operational efficiency, and the first step to making improvements is to have access to accurate data on your current operations. Warehouse Key Performance Indicators (KPIs) are critical to the success of any warehouse operation as they allow you to monitor and set benchmarks. They also help in identifying areas that require improvement, especially the ones that have a direct effect on the overall cost of the operation and customer satisfaction.

Identifying KPIs in the various stages in a warehouse operation is vital to managing and improving warehouse performance. KPIs are often unique, and not all metrics apply to all operations. Identify which metrics are important to your operation and track them religiously. Often, the place to start is looking at the factors company management is using to measure your performance, such as overtime, fulfilment speeds and accuracy rates. And vital to this process is having access to performance data that is available in real-time to identify when and where the operation is drifting so adjustments can be made to get back on track.

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You may already be managing key metrics, but:
- Is the data timely?
- Can you act on the data in time to make an impact on what's happening now, as opposed to a report with data that is a week or two old?

This is where the right processes supported by the right technology can make an enormous difference. After all, you can't improve what you can't measure. While different warehouse operation models have different measurement metrics, there are some mandatory warehouse KPI metrics that must be tracked irrespective of the size of the operation.

1. Order fulfilment
2. Inventory Accuracy
3. Overall Throughput

4. Replenishment
5. Shipping / Picking Accuracy
6. Inventory Turns
7. Dead Stock
8. Supplier KPI
9. Customer Satisfaction

INBOUND

Any warehouse operation starts with the receiving of goods and taking them into stock. While this may seem to be a mundane activity, this is a critical stage as it is the beginning of inventory management and the basis on which outbound orders are placed.

Receiving is critical to the operation and must be strictly monitored and recorded. Inbound receiving operations include:

- New stock deliveries
- Customer returns
- Damaged goods
- Any type of inbound order and any other form of goods that have been taken into stock.

It is crucial to identify the correct type of inbound activity so that it can be allocated to the correct measurement metric. Are you measuring receipts per hour, line items per hour, loads per hour? The key point here is to measure the data that is relevant for your operation.

Typical Inbound metrics include:

- **Customer returns** generally form part of the customer service and customer satisfaction metrics, which are critical for future sales activities. Measuring and monitoring the rate of customer returns gives the company a chance to review their product quality, specifications, and gives them a chance to identify why the goods are being returned.

- **Dock to Stock** - The inbound measurement metric, which is also referred to as the Dock-to-stock metric, is used to measure the operational efficiency of the inbound team and the efficiency of the technology, such as scanners, that is used in the inbound process.

Often an acceptable dock-to-stock timeframe is between 8-15 hours. Anything above that could be considered a disadvantage to the company, especially for fast-moving goods. A three-hour time frame from receipt to put away is said to be best in class in the industry.

OUTBOUND

Outbound begins with order placement and culminates in the dispatch of the goods for distribution to the customer. A pick /pack operation is a key process in the outbound stage and is a KPI that needs to be measured effectively and regularly. The pick/pack operation is often the key metric of overall performance. A successful pick / pack operation is dependent on several dynamics, such as labor availability, equipment availability, operational space,

checking, tallying, and stacking. A pick/pack operation can succeed only if all the above dynamics are monitored and tracked accurately.

Outbound activity has a few metrics to be measured:

- **Order Fill Rate** - A successful pick/pack operation is reflected in the order fill rate, which is the measurement of the percentage of the order that has been filled. A typically acceptable order fill rate is between 97-98% of the total order. Anything below 94% is probably due to inefficiencies in the warehouse operation and replenishment processes. An order fill rate of 100% is said to be the best in class in the industry.

- **Order Fulfilment Timeliness:** A 100% order fill rate is of no consequence to the customer if the order is not shipped on time. A typically acceptable time frame for order fulfilment is 1-2 days, with best in class being less than 24 hours from the time the order was placed until dispatch from the warehouse.

- **Picks per hour** is the primary outbound metric that needs to be measured to identify and analyze the efficiency of the picking team and daily performance. An average picker is expected to pick between 120-175 pieces/cases per hour, with best-in-class pickers achieving more than 250 picks per hour. Applying advanced technology like Voice Picking can drive pick rates 30% higher under the right conditions.

- **On Time, In Full** – Even if all the above are achieved as best in class, if the goods are not delivered on time, it will negatively affect the business of the warehouse and the customer. Typical on-time shipments should be between 98-99% and anything over this average is considered excellent.

However, it is important to note that different warehouses operate different hours and work with a diverse range of shipments from small items like a toothbrush to large items like air conditioners, and the above-mentioned ranges may vary.

INVENTORY MANAGEMENT

Inventory management is the key to the success of any warehousing operation and is something that can make or break a business. Inaccurate inventory is expensive, whether it is in the form of 'Just in Case' extra stock, misplaced or missing items, damage due to mishandling or loss of productivity because of extra processing and handling. And inventory shrink is a direct hit to profitability in losing not only the margin on the item, but losing the full cost of the item.

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Accurate inventory management is key to ensuring proper pick/pack operations and timely order fulfilment. Inventory accuracy is essential to proper inventory management, as it makes it easier to manage turns and provides insight into customer demand forecasting.

There are several metrics related to inventory that highlight the importance of effective inventory management.

- **Inventory accuracy** is the measure of the variance between system stock and physical / actual stock on hand. Typical and acceptable accuracy levels are between 94-98% for manual systems, and an average of 99.5% using real time mature technology and processes. 100% accuracy levels will fall under best in class in the industry.

TIMELINESS

Timeliness in a warehouse operation is critical for its survival, referring to the time frame in which the various activities within a warehouse need to be accomplished without which the operation will not succeed.

- **Order Turnaround Time:** An example would be the time it takes the warehouse to process an order and deliver it to the client from the time the order is placed. This is connected to order turnaround, which is important to ensure that the maximum number of orders are processed within a set period of time. The higher the number of orders processed in a single day or shift, the higher the efficiency of the warehouse operation. This can be measured by monitoring the internal processing times and productivity reports from the WMS.

- **Dock to Stock:** Another example of the timeliness metric is the dock-to-stock, which measures the time between receipt of the goods until they are put away in a bin location and captured in the WMS. Without this metric being optimized, the entire cycle time will be affected.

REPLENISHMENT

The replenishment metric is the pace at which the stock is replenished within the warehouse environment. Replenishment is the moving of inventory from a central or reserve storage location to the primary storage bins for further movement downstream into pick faces for pick/pack operations. This metric is very important for warehouses that handle multiple products in large volumes, especially omnichannel, retail business, and e-commerce.

The replenishment metric monitors the methods used to carry out this movement and how efficient the process is.

With effective replenishment techniques, warehouses/companies can:
- Avoid overstock and deadstock
- Ensure there are no shortages
- Ensure on-time deliveries
- Ensure proper product rotation
- Maintain adequate safety stock

ORDER ACCURACY

Order accuracy is probably one of the most important, if not the most important metric, that a warehouse must measure daily.

The essence of a warehouse operation is to ensure that the customer gets the goods they ordered within the time frame they wanted it. Best in class warehouse operations target order accuracy between 99.5% to 99.9%. Another component to tracking accuracy is in managing the data available on returns. Why are returns happening? Profiling the reasons customers return goods gives you the ability to adjust processes after identifying the cause and effect.

DEMAND FORECAST

Demand forecasting is the understanding of the customer's requirements in terms of their demand and outbound schedule, and is a key metric in managing inventory and stock levels efficiently. Effective demand forecasting can assist in ensuring lean operations in a warehouse and is linked to cost savings. By analyzing and understanding customer demand, the warehouse can ensure adequate levels of inventory are always maintained in the warehouse.

STOCK TURNOVER

Stock turnover ratio is a metric used to identify how often and how soon a particular stock item is being received, ordered, processed, and delivered within a time period. The stock turnover ratio metric is an important measure of a company's inventory health and order process. Inventory turns or "speed class" of an item can be maintained in the WMS, which gives you the ability to treat inventory within an operation differently. For example, with inventory cycle counting, you can count the fast movers more often than the slow movers, giving you the ability to apply labor efforts directly where it can have an impact as opposed to treating all inventory items equally within the same inventory management processes.

STORAGE UTILIZATION

Storage utilization is a metric that measures the average space occupied in terms of square meters/ square feet or pallet positions versus the actual storage capacity used on the floor. This also includes measuring and ensuring that the stock is optimized in the bins, as otherwise, the warehouse could be losing space and/or revenue. Best practices here are to have the ability to review current stock levels compared to overall facility capacity. In the slower seasons, you may want to modify how you store goods – such as, if inventory levels drop 20% in the slow season and your warehouse has five-high racking, try to only use the fifth level when absolutely needed. You will be saving both travel time and lift time, which has a direct impact on all inbound and outbound activities.

DEAD STOCK

Dead stock is inventory that is not moving due to lack of demand and is sitting in the warehouse occupying space and eating up capacity. It includes stock that is damaged, expired, or unsellable for any reason. Dead stock metrics are important to monitor, as dead stock creates avoidable inventory costs and blocks up space for other goods that may have better revenue and quicker turnaround times. Best practice here is to track dead stock and provide reports to management to create sales incentives to move these goods out.

SUPPLIER KPIS

Supplier KPIs are important for collaboration, because vendors need to work together following a common strategy for the business to succeed. Supplier KPI measurements such as reliability, performance, compliance, and customer service are essential in ensuring an effective working warehouse, which is required to optimize output, reduce costs, meet the customer's needs, and achieve customer satisfaction.

CUSTOMER SATISFACTION

Customer satisfaction is a metric that encompasses the entire warehouse operation as it involves inbound, outbound, inventory management, cost reduction, and prompt communication. Customer satisfaction can be measured based on the above metrics with a special focus on:

- On-time delivery
- Shipping accuracy
- Stock accuracy
- Inventory turns
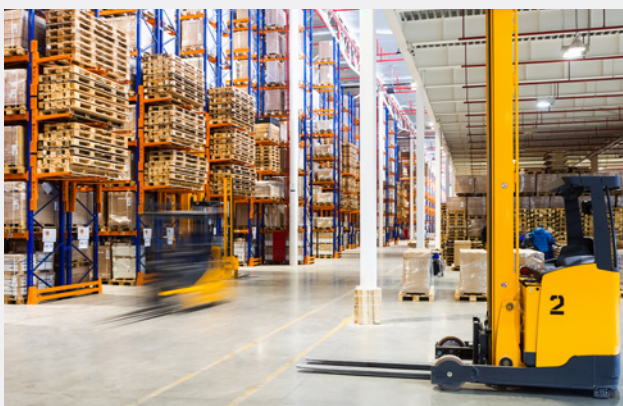- Activity reporting, such as shorts and returns

SUMMARY

It is impossible to improve an operation that is not being measured, therefore it is imperative that the right metrics are chosen based on your operational goals. Once the KPIs that fit your operation are identified, the measurement must be done consistently and managed effectively using the correct technology to achieve customer satisfaction and a profitable business.

Many companies are realizing that their existing technology – including many traditional warehouse management systems – are not capable of handling the agile requirements and demand for real-time, actionable data of the modern-day market. An efficient and effective warehouse management system (WMS) can help streamline warehouse operations through real-time visibility in measuring the above-mentioned metrics.

Once you identify the metrics relevant to your operation, you must put a process in place that will push performance data to the front-line operations team. This timely operational feedback is key to timely corrective action regarding people and processes. This is often achieved with a combination of KPI dashboards tracking your relevant metrics in real-time.

Warehouses come in all shapes and sizes, and might not necessarily warrant using all the metrics mentioned here. The most important point is to identify the metrics that are needed for your operation and to measure them on a consistent basis. The more relevant functions you can measure will give you visibility into your operation in a way that enables you to pivot and adjust processes in a timely manner to improve performance and adapt quickly to new opportunities.