

Complete MES Solutions for Apparel Manufacturing



CONNECT SUITE

VISION CONNECTING THE SUPPLY CHAIN THROUGH TECHNOLOGY

OUR STORY AND DIFFERENCES

We are a digital solutions provider with over 30 years of experience in apparel manufacturing. Our origin and background are what allows us to have an in-depth understanding of the difficulties each factory faces on a daily basis.

Through the challenges we have experienced over the years, it has provided us with valuable knowledge on how to overcome the obstacles on the production floor. We believe that our comprehensive system will be the key to transform and take your business to the next level.



OUR BENEFITS



End to End System

With comprehensive approach, our system facilitates workflow from development to finished goods. Allowing you to seamlessly access your data all in one centralized interface.



Transform your Business

Leverage on our **20+ years** of software development expertise and first-hand manufacturing experience to transform your factory into a digitalized organization.



Effective Decision Making

Essential data points are accurately captured and analyzed to provide you with real-time insights to drive intelligent business decisions.

CONNECT SUITE

LT Labs has developed a sophisticated system by utilizing our expertise in manufacturing combined with innovative digital capabilities to allow your business to capture all the essential data points. We believe a data-driven organization will be able to make smarter business decisions through our Connect Suite System.





LT Labs Connect Suite

An extensive network of manufacturing software products designed to facilitate an end-to-end workflow, from product development to production, providing real-time insights to drive smarter business decisions for your management.



TEAM
connect

Tools focused on managing production to delivery of high-quality products in the shortest lead time and at the lowest cost.



FACTORY
connect

From product development to raw materials, to finished goods; quickly identify inventory levels, location of goods, and development plans.



BUSINESS
connect

Real-time insights & reporting for effective management, decision making, and customer KPI awareness.



Schedule Your Demo with us!

For more information:

info@lmlabs.co
www.lmlabs.co





LTquality

QUALITY INSPECTION SOLUTION

Transform all QC inspectors with an end-to-end quality inspection solution

WHAT IS LTquality?

LTquality is a cloud-based quality inspection solution designed for apparel manufacturing to streamline quality inspection through digital interface-driven processes that will ultimately ensure high-quality standards for your products.

LTquality allows factories to capture defective products on the sewing lines during inspections while providing real-time data for the QC to immediately apply the proper corrective measures to solve the quality issues across the production.

KEY BENEFITS



Achieve zero defects

Our digital inspection apps capture defects information to help prioritize defect correction training and continuous quality improvement by analyzing the historical data and working towards zero defects.

The LTquality system facilitates an end-to-end quality inspection process by capturing real-time data points of defects throughout the factory and instantly analyzing those data to allow the quality team to quickly resolve quality issues and ensure high-quality products.



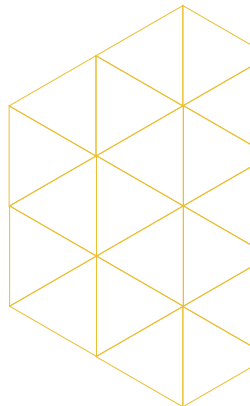
Excel shipment targets

Once garments have passed inspection, the system will automatically collect all good quality output and provide critical information on whether you are hitting your production KPI or fulfilling your shipment orders.

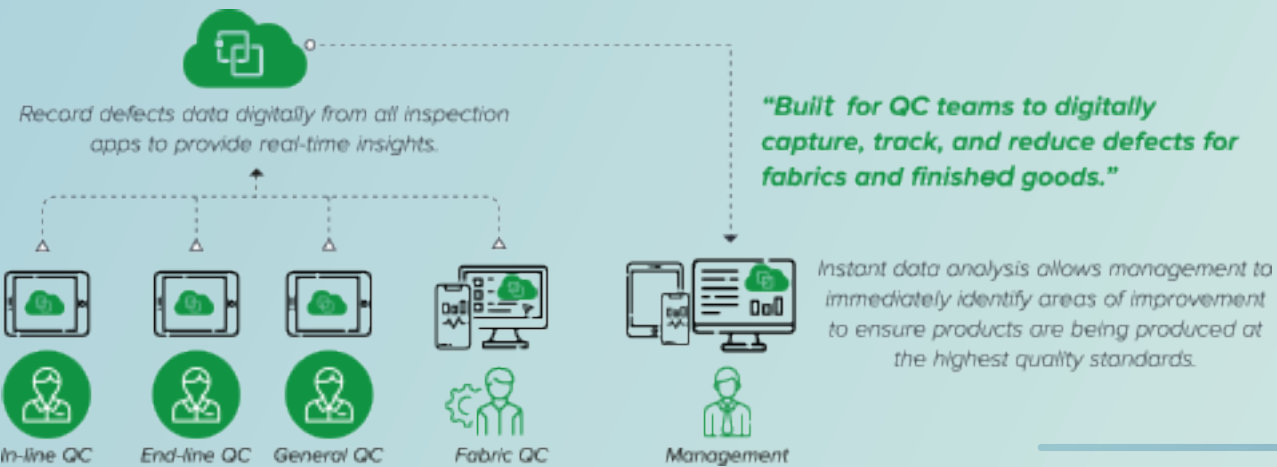


Lower operation cost

Our real-time dashboard allows the quality team to have full visibility in the shop floor and bring immediate attention to resolve quality issues. Helping to improve product quality and reduce extra cost and manpower spent on rework.

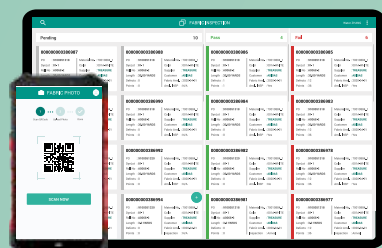


KEY FEATURES



Fabric Inspection

Fabric Inspection allows QC inspectors to perform fabric checking and evaluation (based on their acceptance criteria) upon arrival in the warehouse in order to determine the fabric's quality and identify defective fabrics at an early stage. The system allows the factory to minimize fabric rejection when the garments are sent off to production.



KEY FEATURES

Inspection console

21" Android inspection console provides users with an intuitive interface to quickly mark defects, measurements, and smell test results.

Defect photos

Supplemental handheld Android app lets the QC team take photos and save defect records for reporting.

Reporting

Summarize inspection report is provided by PO/Arrival and can be digitally shared by web link.

Fabric type criteria

Manage your Pass/Fail criteria and relaxation schedule for each fabric type for the system.

Flexible integration

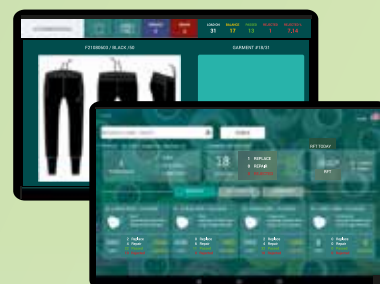
Sync with existing warehouse or ERP to schedule fabric inspections or enter manually

General Inspection (Pre-production)

General Inspection, a part of the raw material or pre-production inspection, focuses on quality inspection or checking within the pre-production assembly processes. Factories can now install LTquality inspection tools in any parts of the factory processes that need an inspection, such as heat transfer, embroidery, pad printing, etc.



In-line & End-line Inspection



In-line & End-line inspection are parts of LTquality's cloud-based tablet inspection tools. In-line app allows the QC team to digitally perform inspection on any operators within the sewing lines. Helping to identify, resolve, and reduce defects at their source before it even reaches the end of the line. End-line app allows the QC team to inspect the finished/completed garments before they are packed and shipped to the customers.

KEY FEATURES

Track good quality output

The system collects all good quality output and provides critical information on whether you are fulfilling your shipment targets on time.

Improve product quality

Identify the root causes of the issues and implement immediate correct action plans for the defects to maintain high-quality standards for your products.

Real-time dashboard

Our system analyzes real-time data to provide management insights on the factory's quality performance anywhere you go.

Improve sewing line productivity

Summarize inspection report is provided by PO/Arrival and can be digitally shared by web link

Digital Traffic Light System (TLS)



Digital TLS tool is designed to improve your product quality through digital inspection apps to capture and flag defects during productions more efficiently. TLS helps to identify potential defects at an early stage and allows your QC and line supervisors to come up with immediate corrective actions for the defective products.

Factories can configure the maximum threshold of repair cards for their production lines. Once it reaches the maximum threshold, the system will not allow any inspections to continue until the defects have been fixed.

KEY FEATURES

Real-time data for quick response

Mobile apps for In-line and End-line inspections allow your QC to capture data digitally and follow the factory TLS rules configured for your factory.

Configurable traffic light setting

Traffic Light settings can be configured by the factory to support different severity types and allowable defects types.

Operator TLS promotes ownership

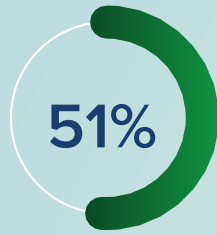
Digital In-line inspection captures operator quality performance and assigns TLS individually to your operators.

Smarter decision making

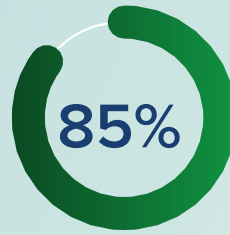
Dashboards are designed to show key metrics along with top contributors to help with smarter decision-making throughout daily operations.

CASE STUDY

Proven results to help your factories reduce defects rates and total NPT (non-productive time) during production in just less than four months of implementation.



Reduction in sewing defects rates

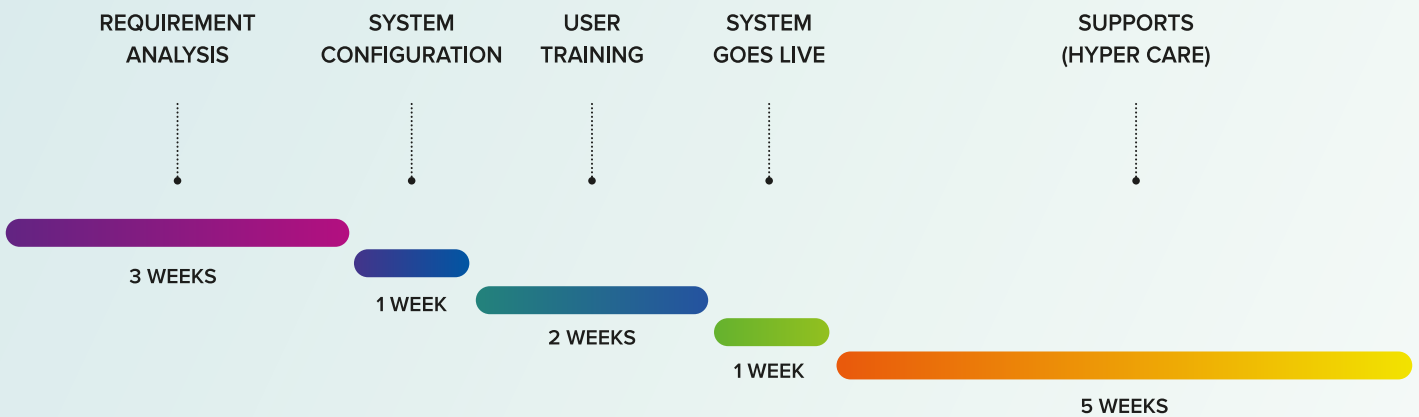


Reduction in NPT caused by sewing



Save up to 13 hours of NPT per line.

IMPLEMENTATION SCHEDULE



HARDWARE SPECIFICATION (MINIMUM RECOMMENDATION)

	IN-LINE / END-LINE	FABRIC INSPECTION	FABRIC PHOTO
Device/Console:	10.1" Tablet	15" or 21" PC Console	Mobile Device
Network Connection:	Required	Required	Required
Operation System:	Android 6 or above	Android 6 or above	Android 6 or above
Camera:	Required	-	Required
RAM:	3GB minimum	2GB minimum	2GB minimum
NFC Integration:	Required	-	-



LTmechanic



TEAMconnect

MACHINE MANAGEMENT SOLUTION

Streamline preventive maintenance, rapid repair, facilitate changeover planning, and reduce production downtime

WHAT IS LTmechanic?

LTmechanic is a cloud-based mechanic management solution primarily designed for manufacturers to enable paperless tracking of machine maintenance, shorten changeover time, fasten machine repairs, and minimize production downtime (NPT).

KEY BENEFITS

The **LTmechanic** system provides real-time data for factory machinery. It tracks every single machine on each sewing line to provide visibility of machine status, instant alert of problems, and machine performance analysis.



Improve mechanic efficiency

Through our system's instant alert function, mechanics are immediately notified of a machine breakdown. Allowing mechanics to react, respond, and resolve machine problems faster and lower production NPT.



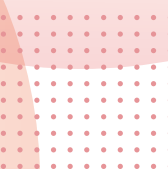
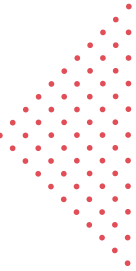
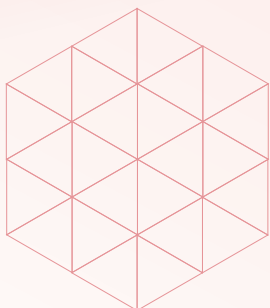
Minimize non-productive time

As machine repair time is tracked in the system, management can measure each mechanic's performance. Ensuring the mechanic team works more efficiently and resolves machine problems in the shortest time.

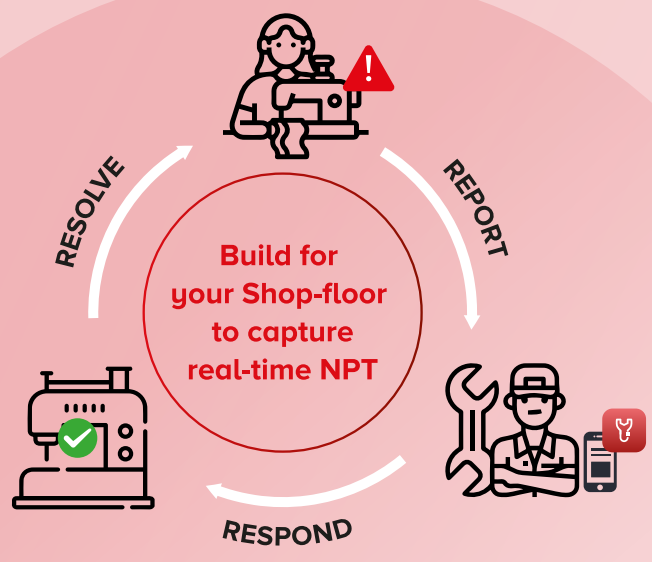


Enhance machine visibility

With your machine inventory managed digitally in the system, all machinery statuses will be updated in real-time. Allowing your mechanic team to have a complete view of all machines and proactively plan for your production needs.

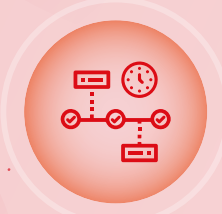


KEY FEATURES



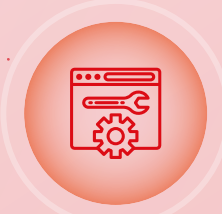
Digital Real-Time Andon (for production)

Line leaders can use the mobile app to report problems directly to the mechanic team to facilitate a quick response. Mechanics can react faster to machine breakdown with the mobile device reporting and notification and minimize production down time.



Changeover Planning

The changeover planning feature facilitates the scheduling problem and lacks the pre-planning and preparation process of the machine changeovers in apparel manufacturers. The system enables your mechanic (ME) team, the quality (QA) team, and the industrial engineers (IE) team to have a seamless workflow and minimize the changeover process time (COPT).



Built-in Preventive Maintenance Scheduler

Keeping all machines in the best operating condition with the preventive maintenance tools in the LTmechanic system. When performed correctly, manufacturers can increase machine lifespans, reduce machine breakdown, and maximize team productivity with real-time dashboards.



Machine Management

After recording and tracking every machine using the LTmechanic system, users can now have complete visibility of machines status and valuable data of all machines throughout the factory by their brand, historical problems, and downtime information.



- ✔ Line Leader can report machine problems via mobile device
- ✔ Instant notification alert notified the mechanic
- ✔ Upload real photos of the machine problem during reporting
- ✔ Web dashboard shows real-time ticket status that impacts to production



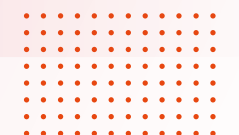
- ✔ Provide calendar of the upcoming schedule of the changeover
- ✔ Create a job list/checklist of the machines that need to be prepared
- ✔ Shows available and active machines on the mobile application



- ✔ Oversee all machine maintenance status with the built-in calendar
- ✔ Show calendar of the upcoming maintenance schedule for all machines.
- ✔ Customized checklist for repair and preventive maintenance
- ✔ Create maintenance tickets directly from the web application

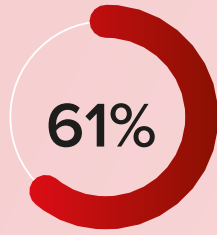


- ✔ Real-time visibility of all machines conditions and status
- ✔ Access to downtime data with real-time web dashboards
- ✔ Real-time reporting to help the team prioritize attention.



CASE STUDY

Our client achieved significant results within only **six months** of implementing LTmechanic.

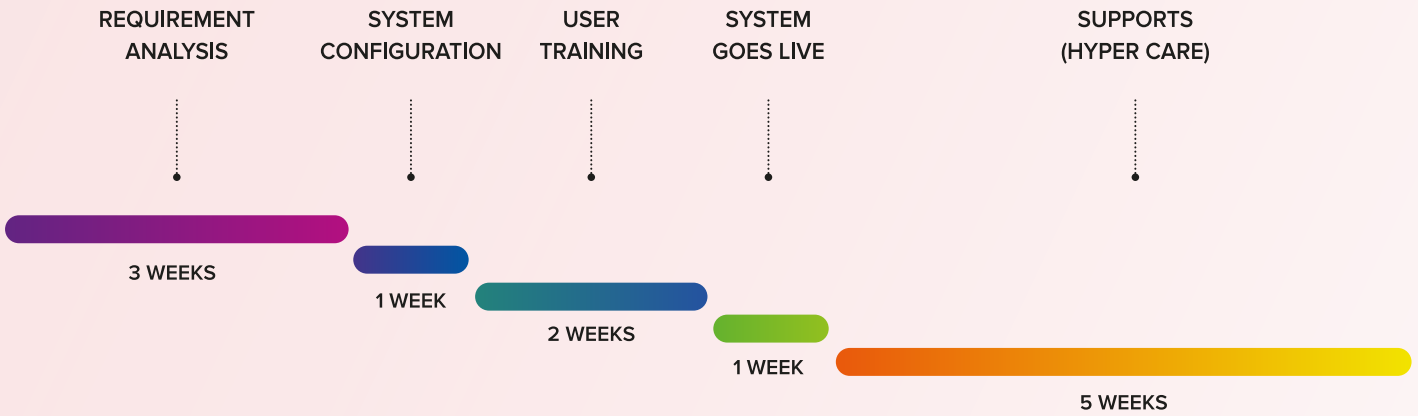


Reduce breakdown time by an average



Uncover an average of **\$12,000** worth of monthly value

IMPLEMENTATION SCHEDULE



HARDWARE SPECIFICATION (MINIMUM RECOMMENDATION)

Device:

Network Connection:

Operation System:

Camera:

RAM:

NFC Integration:

MOBILE APPLICATION

Mobile Device

Required

Android

Required

3GB minimum

Required





LTie

INDUSTRIAL ENGINEERING SOLUTION

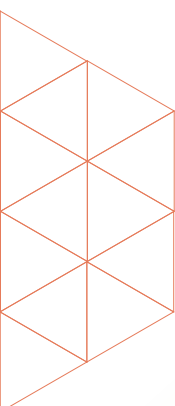
Optimize your shop floor's productivity and line efficiency in real-time

WHAT IS LTie?

LTie system is designed to increase efficiency, provide line setup suggestions while keeping your line balancing, and monitor NPT throughout production. The system also generates a digital operator skills matrix by capturing the operator's machine skill and operational efficiency.

KEY BENEFITS

LTie system is designed to increase productivity and monitor the real-time efficiency of manufacturing lines by optimizing production line configurations as quickly as possible to reduce downtime.



Manpower optimization

Our digital time study apps allow IEs to capture each operator's historical data and build up their digital skills matrix. Hence, the IEs team can easily match qualified operators to their strongest operation to maximize output.



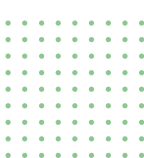
Achieve perfect order fulfillment

The system allows users to capture single piece of output by station. Doing so provides management with visibility of each operator's output and efficiency to monitor KPIs and ensure production targets and schedules are met.



Produce at a lower cost

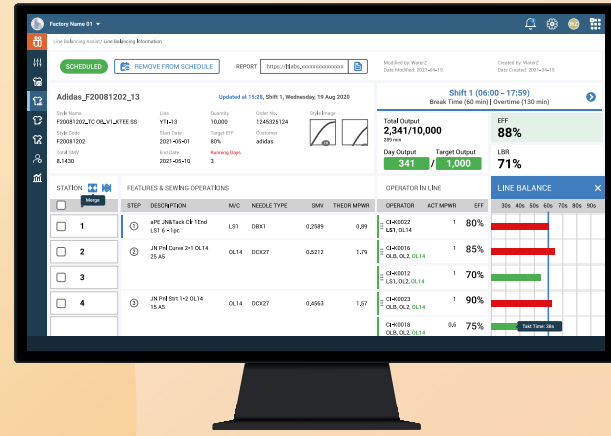
The system automatically updates the line balancing efficiency so that the IEs team can seamlessly work to remove bottlenecks and excessive resource capacity resulting in lower manufacturing costs.





Cloud-computing for line setup

Managing your styles, operations, operator skills, and previous line setups all in one place allows your IEs to create new line setups or rebalance a line efficiently.



Real-time KPI dashboard

Real-time dashboards provide data for line performance and overall efficiency by the hour and line. In addition, KPI metrics are highlighted to capture your attention to ensure the crucial areas of the factory are hitting their targets.

Highlight KPI metrics to prioritize attention by setting targets for each

Identify the top contributor impacting KPI

Highlight top 5 contributors by NPT, LBR, performance, output, and efficiency

View dashboard in optimized TV mode



Auto-generate line set up with the highest LBR

Drag and drop operators into stations

Split or merge operations by stations

Show operators list with matching skills and their past operations' efficiency

Generate changeover report for mechanics and line leader

1

4

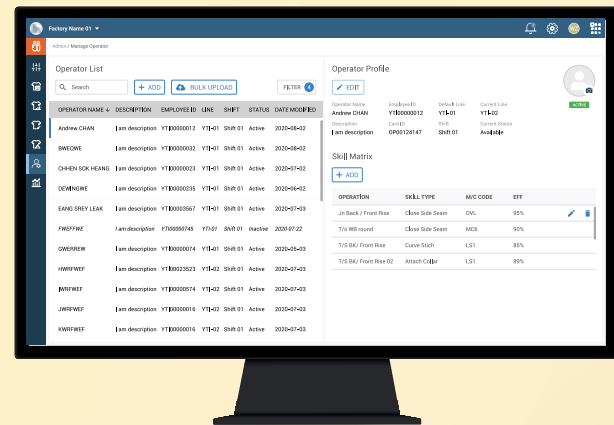
KEY FEATURES

2

3



Real-time digital skills matrix



Skills matrix are automatically updated to identify each operator's skill and operation efficiency. The system provides a list of operators along with their skills and the efficiency that can determine the line efficiency and LBR.

Update operator skills automatically from mobile time study

Determine line efficiency based on operators' efficiency

Perform bulk upload of skills through LTie web application

Perform real-time time studies on operators

Manage NPT information directly in the mobile app

Record and update good output

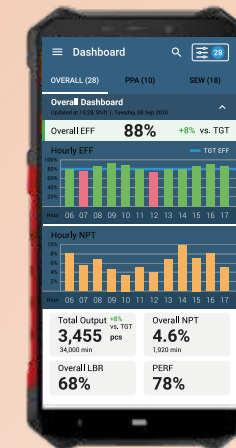
View line efficiency on the mobile dashboard

Receive notification alerts when KPI targets fall under the threshold

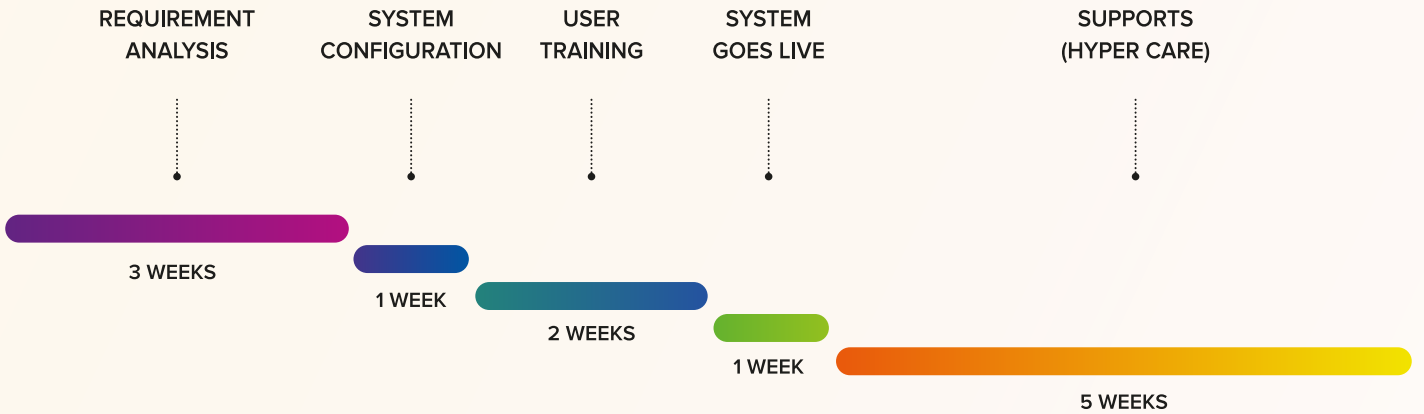


Mobile tools for shop-floor changes

Mobile android app allows IEs to perform time studies, input NPTs, and make changes to your line anywhere on the production floor.



IMPLEMENTATION SCHEDULE



HARDWARE SPECIFICATION (MINIMUM RECOMMENDATION)

Device:

Mobile Device

Network Connection:

Required

Operation System:

Android

Camera:

Optional

RAM:

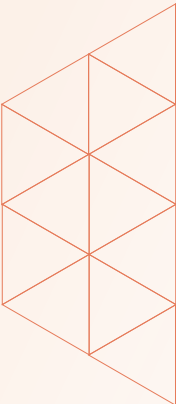
3GB minimum

NFC Integration:

Optional

TV DISPLAY

42" or larger TV display that supports HDMI input from Raspberry Pi





LTwarehouse

WAREHOUSE MANAGEMENT SOLUTION

Streamline your warehouse operations with an end-to-end warehouse management solution

WHAT IS LTwarehouse?

LTwarehouse system is designed to give your factory an increased competitive advantage by enabling you to administer warehouse operations, accurately track your in-bound material shipments, and locate your fabric rolls across your production floor in real time. All of this is to ultimately provide your warehouse with higher efficiency and enhanced inventory management in order to support your operational requirements and business complexities.

KEY BENEFITS

The LTwarehouse system allows you to acquire visibility of your raw materials and delivery schedules from your suppliers all the way till they arrive at your factory. Inventory management allows you to have real-time notification and reporting for quick decision making and improved production planning.



Track material arrival

With the capability of accurately tracking the location of your shipment, we can provide you with clear visibility of the arrival time of your materials. Allowing you to better plan for production and prepare for any unexpected delays in advance.



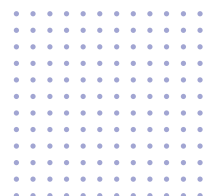
Real-time inventory

Immediately scan your fabric rolls from the time they enter the warehouse until they move out. All of these data points are instantly tracked and analyzed to provide you with an accurate map of the location and quantity of your inventory.



Increase operation efficiency

By having real-time data of your inbound shipments and inventory, your warehouse team will be able to fulfill the requirements of the production and for production to generate better production planning. Enabling for seamless work flow between warehouse and production.

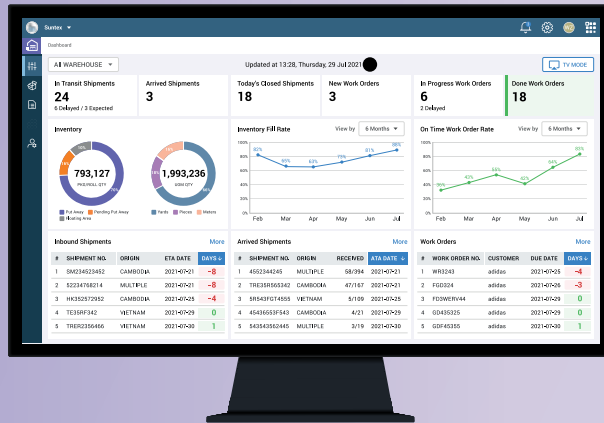


KEY FEATURES



Inbound Shipment & Receiving

Sync your inbound shipments with our warehouse system directly with your factory ERP through API. Monitor the status of your inbound materials with real-time dashboards.

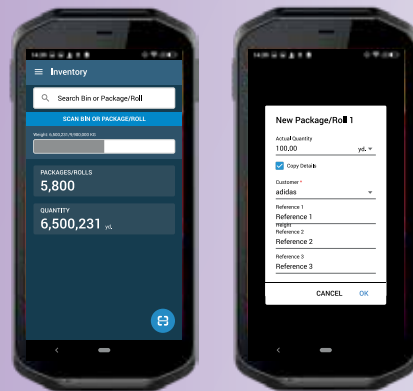


- ✓ View all incoming shipments and status in one location
- ✓ Mark as arrived to update status for receiving
- ✓ Available to be viewed as a dashboard for warehouse area
- ✓ Sync with ERP or add directly into the web application for one off shipments
- ✓ Generate and print SKU labels



Inventory Management

Efficiently locate your materials by searching our dedicated inventory database. Generate labels with unique barcodes/QR codes to manage fabric roll inventory all the way from warehouse to production.

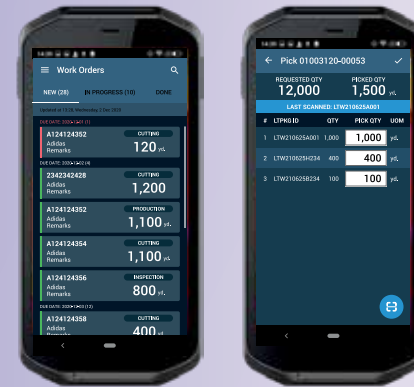


- ✓ Switch between different warehouses to view your inventory
- ✓ Scan materials SKU to check inventory level
- ✓ Scan materials and location QR code to put away, pick, and dispatch
- ✓ Search complete warehouse by material attributes to quickly find your inventory



Material Requests

Enhance operational efficiency by creating warehouse work orders to manage and track production material requests. API is available to automatically sync production requests.

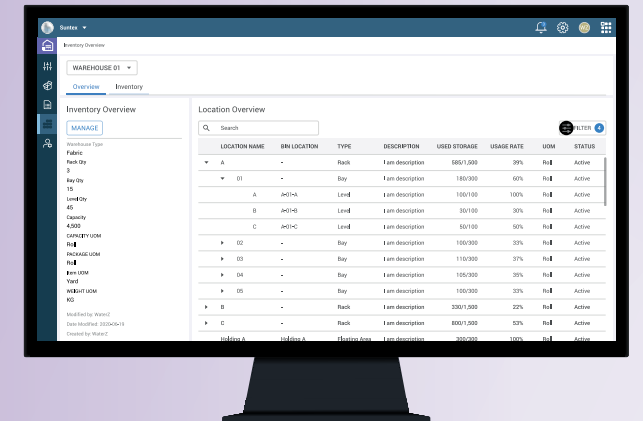


- ✓ View work orders directly from the mobile app
- ✓ Scan items to pick from warehouse
- ✓ Dispatch directly or send to holding area to be dispatched
- ✓ Changes in material status will be available for ERP sync



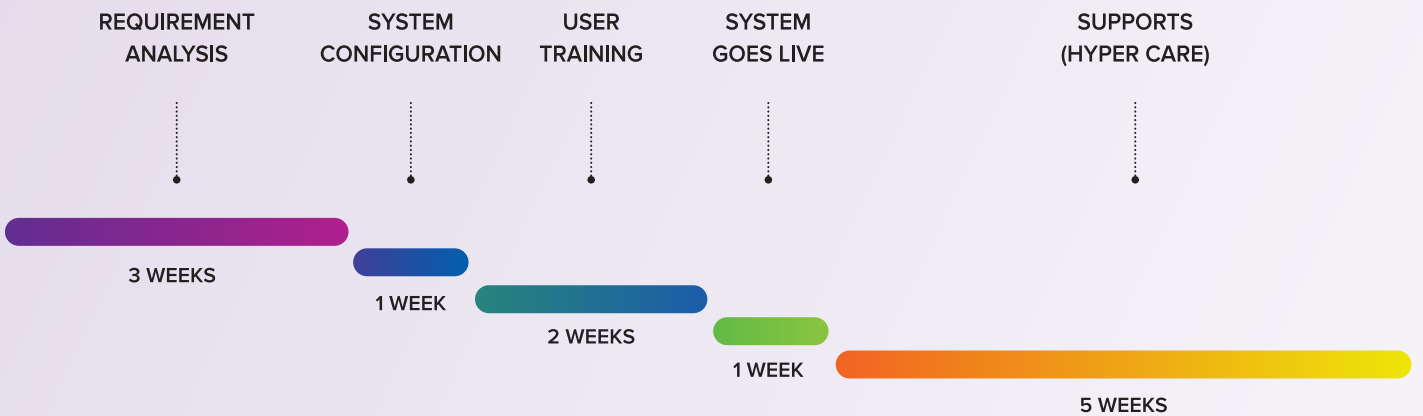
Warehouse Management

Easily customize warehouse for flexibility and growth while managing all warehouse within one system.



- ✓ Create multiple warehouses for different inventory based on factory needs
- ✓ Customize each warehouse by type and layout
- ✓ Easily switch between warehouses to keep manage them together or separately

IMPLEMENTATION SCHEDULE



HARDWARE SPECIFICATION (MINIMUM RECOMMENDATION)

	MOBILE HANDHELD
Device:	Mobile Device
Operation System:	Android 9 or above
2D Scanner:	Required
Camera:	8MP
Battery:	4000mAh
NFC Integration:	Required

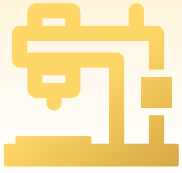
THERMAL LABEL PRINTER

Label printer for QR code

TV DISPLAY

42" or larger TV display that supports HDMI input from Raspberry Pi





LTproduction

PRODUCTION MANAGEMENT SOLUTION

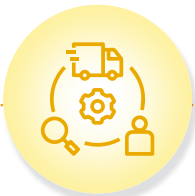
Manage your production visibility and processes with an end-to-end production management solution

WHAT IS LTproduction?

LTproduction system is a comprehensive Track and Trace system optimized for the apparel, accessories, and footwear industry. The system provides end-to-end status visibility on your production orders and materials throughout your factory and production process.

KEY BENEFITS

The **LTproduction** system provides real-time traceability for all supplies, materials, and finished goods at any critical points of your production process in the factory. The system also predicts bottlenecks and helps streamline operations, resulting in a better and improved production process and overall production efficiency.

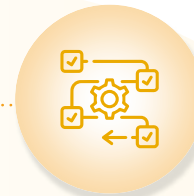


PO status & supply availability

By enabling check-points in every production process, the team can prevent materials from getting lost and confirm whether the materials are completed or on track. This provides end-to-end traceability of all POs to avoid supply shortages and undershipment to your clients.

WIP visibility

When scheduling an order, the system helps to predict and identify where bottlenecks might occur in the production process. The system could also alert the users when there is an excessive WIP buildup allowing the team to prioritize and take proactive actions to prevent bottlenecks.



Manpower reduction

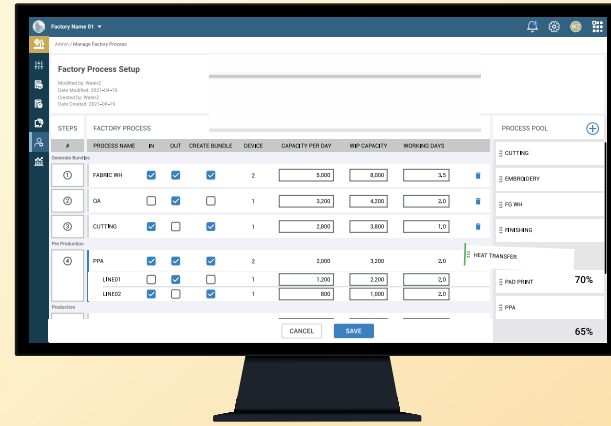
Manual data entry will be eliminated across the production process, from supply handover to closing PO. The system accurately captures and updates every material's necessary information allowing you to have a complete view of the factory's production process and streamline the workflow to be more efficient.





1. Process & Operations Setup

Flexible setup of factory processes and check-points to match your actual operation flow for multiple factories, buildings, and sub-contractors. Set targets and thresholds for each production process as an indicator for the production team and operators.



- ✓ Create operation processes in our LTglobal admin, based on the actual factory setup.
- ✓ Assign check-points per process, line, or machine.
- ✓ Include check-points through multiple factories and for Sub-con processes.
- ✓ Determine which areas and processes require dashboards for the users.

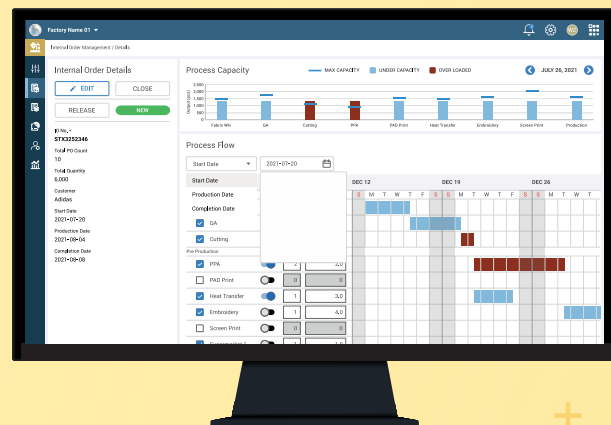
KEY FEATURES



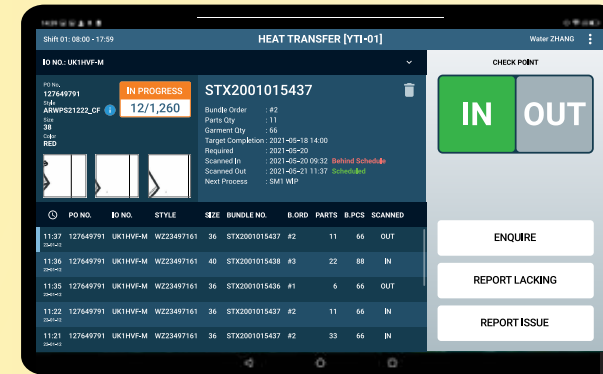
2. Internal Work Orders

Optimize operations by grouping your production orders by style/size/color. Schedule orders and have a direct overview of potential bottlenecks based on the factory's capacity. Prioritize orders and let the system alert your production team instantly.

- ✓ Create or upload internal work orders (IO) and POs, and manage them in one location.
- ✓ Add, remove, or revise PO and IO information anywhere at any time.
- ✓ Link with ERP or planning system or schedule the IO within LTproduction.
- ✓ Instant process capacity and fill rate update when scheduling IOs.



3. Track & Trace

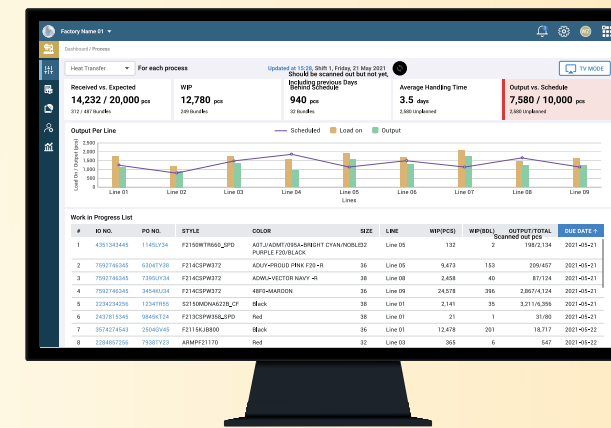


Track your orders and material supply by bundles, bins, or single-piece flow. Provide the production team with clear visibility of the supply in real-time. Split, merge, and match your parts and accessories without losing track of complete styles and orders.

- ✓ Auto-generate or add bundles manually within IO, per style and size.
- ✓ Assign RFID cards to track and trace your bundles/garments along any process.
- ✓ End-to-end PO traceability with supply and WIP visibility between operations.
- ✓ Auto-close a PO once the total PO quantity has been reached.



4. Real-Time Dashboards



Dashboards are designed to provide accurate information in order to support your team with their daily tasks. With mobile and email alerts, the system can provide bottleneck prediction and help to prevent production delays.

- ✓ Real-time data available per factory, operation, and line level.
- ✓ Supply visibility with clear indicators and alerts for remaining and lacking supply, bottlenecks, and priority requests.
- ✓ Eliminate manual data recording and manual send/receive confirmations.
- ✓ Custom mobile and email notifications for potential PO delays, excessive WIP build-up, and tracking abnormalities.



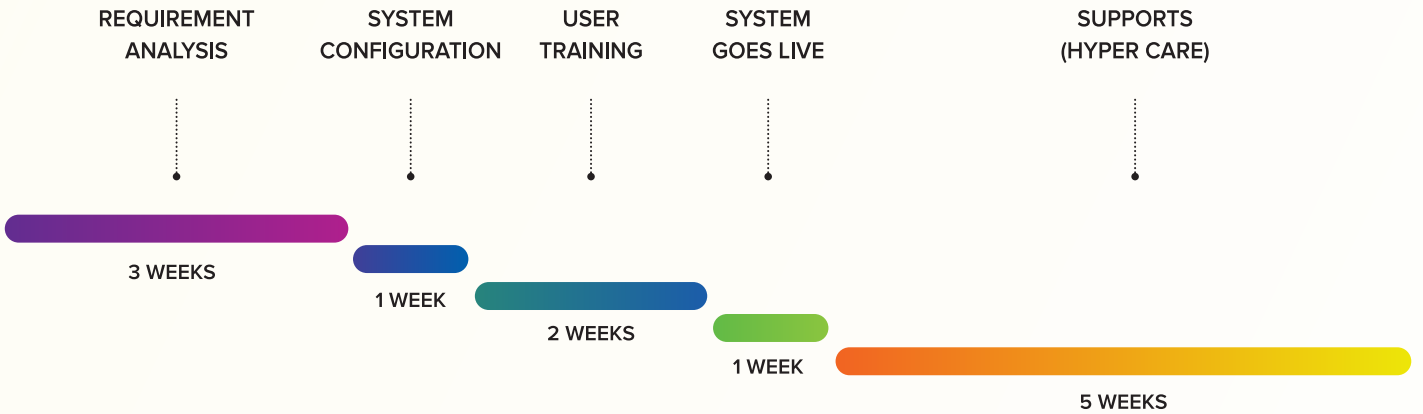
5. Reporting & Analytics



Provide real-time factory status to oversee all processes and operational performance through customize analytics. Filter and compare factories and sub-contractors based on their output and accuracy. Generate and export reports based on your customers' requirements.

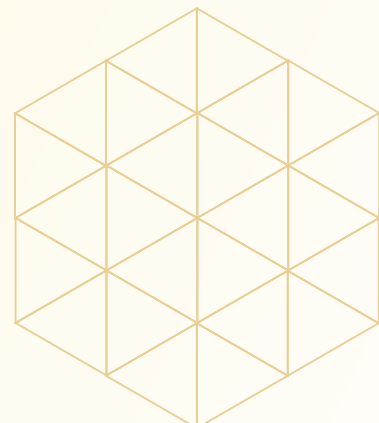
- ✓ Custom reports and analytics per factory, operations, and line level.
- ✓ Generate daily-weekly-monthly reports or use customized formats like shipment dates or production seasons.
- ✓ Analyze and compare top and bottom performing factories, production processes, and subcontractors.
- ✓ Execute root cause analysis to determine which areas are causing delays.

IMPLEMENTATION SCHEDULE



HARDWARE SPECIFICATION (MINIMUM RECOMMENDATION)

	TABLET DEVICE	THERMAL LABEL PRINTER	FABRIC PHOTO
Device	10.1" Tablet	Label printer for QR code	42" or larger TV display that supports HDMI input from Raspberry Pi
Operation System:	Android 7 or above		
Camera:	Required		
NFC Integration:	Required		





Schedule a demo
with us!

For more information:

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