**Solution & Business Brief**

# Sewing industry's future : a new era

We are embracing the new future of the sewing industry.

## ☐ Solution Overview

- SEWSMART SYSTEM optimizes production management in sewing factories through data-driven insights.
- It delivers cutting-edge solutions for enhancing the value of the garment industry.
- SEWSMART SYSTEM empowers end-to-end process management, from contract and planning to distribution and manufacturing orders, enabling efficient on-site manufacturing oversight based on data.

## ☐ Business Background

- **Rapid Evolution of the Online Fashion Market :**
  The online fashion market has undergone rapid transformation, starting with comprehensive internet malls in the 1990s and progressing to specialized fashion and beauty platforms in the 2000s.
  In the mid-2010s, social media gave rise to individual markets, fueling the growth of individual sellers and small brands.
  The emergence of "influencers" further influenced consumer behavior.
  In the future, we anticipate the rise of platforms using advanced IT technologies like big data and AI.

- **Challenges in the Domestic Sewing Industry :**
  The domestic sewing industry faces several challenges, including an aging workforce, outdated equipment, and reduced price competitiveness.
  As the online fashion market and platforms evolve due to rapid IT advancements and social media's commercialization, the domestic sewing industry and factories struggle to keep pace.

- **The Need for Technology and IoT Integration :**
  The overall crisis in the domestic sewing industry stems from its inability to adapt to market changes, necessitating digitalization throughout the industry.
  The industry's future transformation will primarily focus on production, creating a growing demand for optimized production management systems.

## ☐ Solution Introduction

SEWSMART SYSTEM aims to make sewing operations more efficient, competitive, and cost-effective through digitalization and data-driven processes.

It streamlines the sewing factory's operations, from connecting equipment to optimizing production quotes.

- **Systematic Connection of Sewing Equipment Lines :**
  SEWSMART SYSTEM connects sewing machines into a network.
  It can be visualized as a point connecting various sewing production lines.
  This system unifies the sewing factory into an interconnected, digital workspace.

- **Enhancing Competitiveness through Work Standards :**
  The system begins the digitization of sewing factories by converting work standards into digital formats.
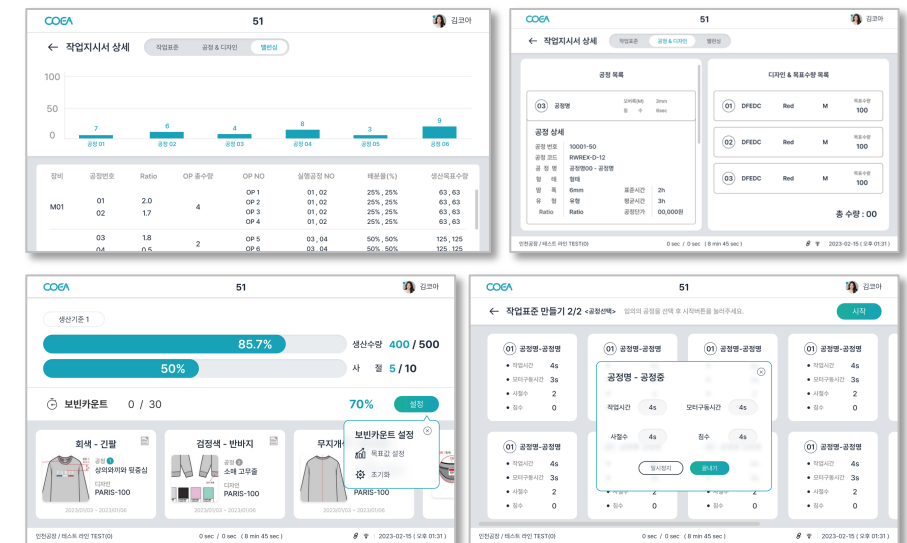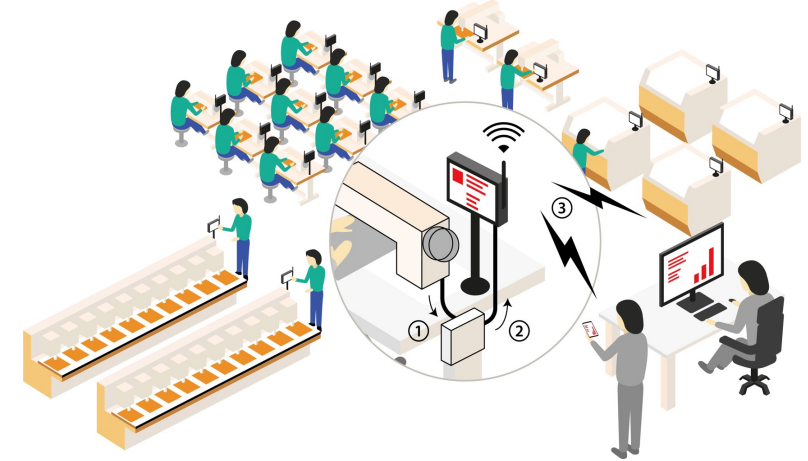  This is a crucial step in transitioning from relying on the skills and knowledge of experienced sewers to a more standardized and data-driven process.

- **Rationalized Production Quoting :**
  SEWSMART SYSTEM assists in generating accurate production quotes.
  It replaces the previous practice of relying on estimates and allows for more objective and competitive quoting for contracts.
  This data-driven quoting contributes to cost-effective contract negotiations.

# ☐ System Features and Core Technology

- **Remote Task Instructions and Productivity Management:**
  SEWSMART SYSTEM is under development to facilitate remote task instructions and productivity data management for all production equipment used in sewing, including sewing machines.
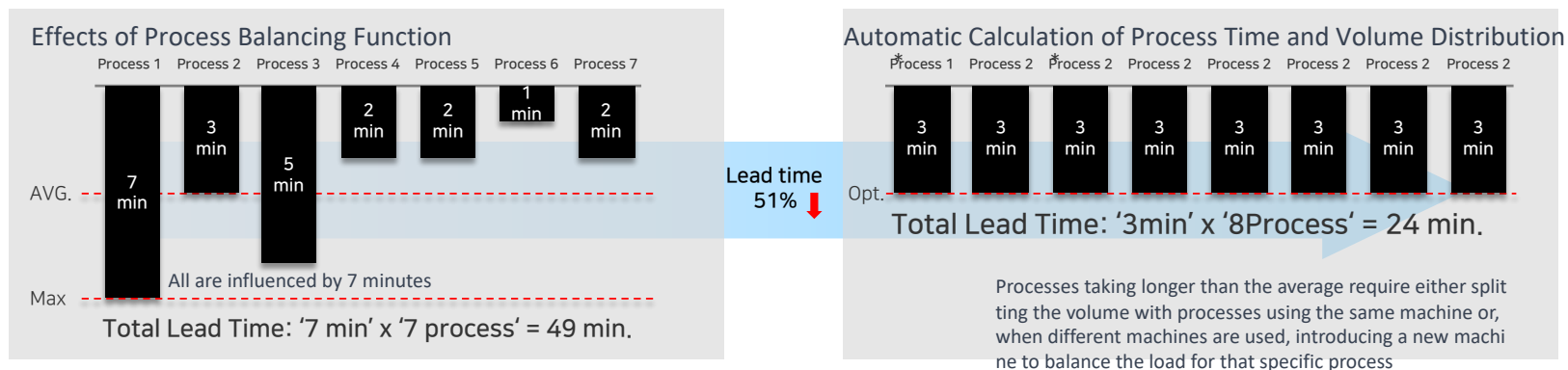
- **Components: SEWSMART OP and SEWSMART SYSTEM WEB:**
  The system comprises two core components: SEWSMART OP, responsible for collecting data from production equipment, and SEWSMART WEB, a solution for analyzing and managing transmitted data.

- **Production Process Balancing for Efficiency:**
  The system offers a production process balancing feature that optimizes task instructions, maximizing productivity and minimizing lead times in manufacturing processes.
  This optimization allows for transparent cost calculations, ultimately leading to increased profitability for manufacturing facilities.



Effects of Process Balancing Function

Process 1, Process 2, Process 3, Process 4, Process 5, Process 6, Process 7

7 min, 3 min, 5 min, 2 min, 2 min, 1 min, 2 min

AVG. Max

All are influenced by 7 minutes

Total Lead Time: '7 min' x '7 process' = 49 min.

Lead time 51% ↓

Automatic Calculation of Process Time and Volume Distribution

Process 1, Process 2, Process 2, Process 2, Process 2, Process 2, Process 2, Process 2

3 min, 3 min, 3 min, 3 min, 3 min, 3 min, 3 min, 3 min

Opt.

Total Lead Time: '3min' x '8Process' = 24 min.

Processes taking longer than the average require either splitting the volume with processes using the same machine or, when different machines are used, introducing a new machine to balance the load for that specific process

# ☐ Technical Development Details

- **Optimizing Worker Productivity**:
  The system offers various features to empower each worker to achieve optimal productivity in their respective processes, including precise confirmation of work instructions for the products being produced.

- **Real-time Productivity Monitoring**:
  Workers in each process can monitor the productivity of their peers within the same process in real-time, facilitating the identification of productivity bottlenecks across the entire process.

- **Seamless Task Transition**:
  After completing a task, workers can seamlessly select and initiate the next task from the provided work instructions.

- **Sample Mode**:
  A sample mode feature automatically calculates precise work standards for creating standard samples.

- **Automation Features**:
  The system includes various automation features, such as the automatic detection of bottom thread issues.



**Main Production Status**

▶ Developed UI/UX for a Clear Overview of Worker Productivity
▶ Equipped with Various Features to Enhance the Efficiency of Each Worker and the Entire Process

**Setting Menu**

▶ Offering a Variety of Menus for Adjusting Tablet PC Settings According to Each Worker's Preferences
▶ Supporting Multiple Language Options

**Sample mode**

▶ An automated feature that calculates essential instructions in the work orders before commencing the production of ordered products during the sample production stage.

**Production Order**

▶ A feature that assigns work orders to worker's OP and allows workers to choose another work order directly after completing their assigned task, enabling immediate entry into production.

**Minimizing the Overall Production Lead Time through Maximizing the Productivity of Each On-Site Worker**

## ☐ Seven Essential Operational Functions for Sewing Factory Management

- **Order Management**:
  Efficiently manage orders and purchase orders systematically.

- **Work Standards**:
  Maintain and manage production standards for each product.

- **Work Instructions**:
  Facilitate the remote delivery of work instructions for each product.

- **Production Status**:
  Monitor the status of each process and equipment, ensuring smooth operations.

- **Basic Information**:
  Maintain a database of worker and production equipment information.

- **OP Status**:
  Easily check the list of work instructions currently in progress.

- **Process Balancing**:
  Calculate and optimize the most efficient process lines to enhance overall productivity.

## ☐ **Technological Differentiation**

- **Comprehensive Data Management**:
  Unlike systems limited to specific sewing machines or focused solely on the sewing process, the SEWSMART SYSTEM offers a holistic solution that covers the entire production process, from order inception to sewing completion.

- **Responsive On-Site Support**:
  LTM's sales process includes dispatching a dedicated system inspection team to assess the customer's production equipment.
  Customers receive two SEWSMART OP, SEWSMART SYSTEM WEB, and MOBILE for their equipment at no cost.
  After a free trial period, a quick installation service team is sent to ensure a seamless transition.

- **Efficiency and Transparency**:
  The system excels in optimizing work instructions and enhancing process transparency, resulting in improved efficiency.
  This is achieved through work standard management, work instruction optimization, and process balancing.

- **Continuous Improvement through Data Analysis**:
  SEWSMART SYSTEM strengthens competitiveness by continually refining products based on data analysis.

# ☐ **The Expected Results from the Solution**

### **For the Client (Buyer/Company Placing Orders)**
- **Real-time Production Monitoring**: Clients can monitor the real-time production status from anywhere, leading to increased productivity and improved production completion predictions.
- **Reduced On-Site Supervision**: This predictive capability reduces the need for on-site supervisors, resulting in cost savings.
- **Efficient Warehouse and Logistics Management**: The system facilitates more efficient and effective management of warehouse and logistics costs.
- **Prevention of Abuses**: It helps prevent potential issues such as fabric/material wastage and inaccurate production quantities by detecting and addressing these issues in advance.

### **For the Sewing Factories**
- **Improved Negotiation**: Sewing factories can negotiate more reasonable quotes with clients, enhancing the efficiency of their production processes.
- **Digital Transformation Benefits**: The digital transformation of production processes increases productivity and reduces operational costs, leading to higher profits.
- **Client Trust**: Providing transparent real-time production status instills trust with clients, increasing the likelihood of repeat contracts.
- **Addressing Inefficiencies**: It eliminates the reliance on traditional quoting methods, addressing inconsistencies and inefficiencies in production processes.

### **For Subcontractors and Freelance Organizations**
- **Real-time Monitoring**: Subcontractors and freelance organizations can also monitor real-time production status, leading to enhanced productivity.
- **Reduced On-Site Supervision**: Accurate predictions of production completion times reduce the need for on-site supervision, resulting in cost savings.
- **Preventing Mismanagement**: The system helps prevent issues like material and fabric abuse, incorrect production quantities, and other forms of mismanagement.

# Here Comes the Future

## Best Way to Predict the Future is to Create It.

We consider our customers as life-long partners. By creating a partnership with our customers, they will become our best advocates. Moreover, by adding real value and creating true partnerships with our customers, we believe that our company, LTM, will eventually accomplish the ultimate goal of transforming the entire sewing industry into the most advanced one among all.

We will take any valuable feedback from our customers about our system.
Please don't hesitate to reach out if you have any questions or suggestions.

**Thank you!**