

The Age of Lean Production - Factory status at your fingertips

The year of 2007 begins, the Textile and Clothing Industry has to prepare for even more uncertain variables in the year of 2008. The key issues do not only consider surviving in the marketplace but also turning uncertainties into business opportunities. To most cross-border enterprises, they have to deliver production information in real time, handle JIT (Just-In-Time) production and manage business operation simultaneously. Textile and clothing enterprises need a reliable platform to fulfill such requirements. MSC RFID Factory Solution is the answer.



The Shopfloor Workplace Strategy

The competitive edge of the Production Industry relies on production efficiency, cost control and the management capacity. However, the more the product varieties it is, the shorter the product life cycle it will be. In addition, customers request shorter product delivery period. They want prompt (JIT) delivery, and lower prices for better quality. Under these market conditions, production department bears even more pressure. Production line is the core of the production department. Therefore, managing production line and production department efficiently and effectively are the keys to deliver better product quality, achieve low cost and guarantee accurate delivery.

To achieve desired results for each of the pre-determined targets, and with the advent of the Little Profit Age and the recent popularity of flatten organizational structure, production line management begins to play an important role.. Production line supervisors do not only have to lead their teams to accomplish all production tasks, but also to effectively manage production progress, quality control, packaging and delivery of goods and all other matters. Nowadays, production manager / line supervisors are required to effectively utilize technology to conduct production line management, to control production processes and to coordinate with other departments to jointly settle production problems. These represents the technological & managerial advancement of factory management.

Managerial problems occur at the production site of Garment Factories

- λ The team leaders, supervisors and factory managers seldom layout the production progress plans. When they encountered production problems, they will find lot of excuses, like "we are trying to handle the matter"; "we have nearly achieved our goals" or "I can do nothing about it".
- λ Fail to realize the importance of quality control. Factory manager seldom develops contingency plan for factory management. They solve production problems, of any, on ad-hoc base. There is no such thing called long term planning in factory management.
- λ Managerial personnel are reactive, overall planning and organizing ability is weak. The staffs are always busy, confused, and make mistakes.
- λ Staffs seldom prepared regulated on-site records. They fail to respond to queries made by the team leaders relating to production process.
- λ Management hardly gets latest production progress data and report from various factory departments.
- λ Production progress data are inaccurate. There is limited systematic verification channel. The filing arrangement and filing system are chaotic. Staffs have to spend an extensive period of time to obtain updated information.
- λ There is no concrete plan for the purchase of raw material. The raw material issue procedure is ambiguous. Components are always missing and the department has to replenish missing components. Thus, this increases costs and seriously affect product quality and the production delivery date.

The above listed problems are not exclusive. They reflect the prevailing internal managerial conditions of garment enterprises. If garment enterprises decide to carry out organizational reengineering, they must commence reform by first improving the quality of management. Through deploying specifically designed business re-engineering operational models and business concepts, it helps enterprises accomplish the "Results for Quality, Management for Profit" stance.

Downstream and Upstream data flow (Workflow Data Tracking)

We are talking "Business". To Chinese people, business means life and meaningfulness – a meaningful life. Therefore, business equates "the meaning of Perpetual". All businesses have the objective to exist perpetually. Blood and flesh are important to sustain a human life. Enterprises rely on work flow to successfully conduct business operations and to thoroughly link the entire information application. According to the definitions provided by WFMC (Workflow Management Coalition), work flow is an automatic operation of a fraction or the entire business process. Participants follow the requisite rules to handle information or to perform tasks. Participants also transfer information amongst themselves. Through work flow, business activities are dissected into meaningful tasks, roles, rules and process for execution and control, such that both the production organization standards and work efficiency can be improved. To put it simply, work flow is a series of business activities or tasks that are interrelated and are conducted automatically.

The conventional workflow was in place ever since the enterprises were established. The most primitive method of management and delivery of information may involve the use of paper, pen and manpower. However, in the prevailing globalize work environment, it is usual to detect intra-regional and interrelated work relationships amongst Departments within enterprises. Therefore, it is not an easy task to research for work-related information. Software innovations conducted in the 80s and 90s has completely reformed the establishment and control of information. At the same time, enterprises also faced new challenges, such as, researching for information, consolidation and understanding the information, and then performing certain tasks accordingly. According to the research analyses conducted by IDC (International Data Corporation), information workers spend 2.5 hours each day to research for work related information. This takes up 30% of the time of their working day. The time that people spent on researching for information, managing and organizing documents, confirming the information owned by the working team can be better

utilized for conducting analyses, working on joint projects, understanding data and other value-added work.

The Garment Enterprise Workflow is unique. An enterprise faces competition from both overseas and Mainland China. Enterprises need to consider a variety of subjects for debates and challenges in their operation. They have to face globalization, innovation (Factory owners have gradually freed themselves from solely conducting sewing businesses. Through other innovative channels, such as designing products by themselves, establishing own brand names and expanding the sales network, etc.), focusing on how to swiftly respond to market needs, accelerating the improvement made to business models and employing work flow method to ensure the maintenance of profit. They are all major considerations of the enterprises. Prior to China joining the World Trade Organization, 3 Agreements relating to textile and clothing products were signed and executed. They are namely the anti-dumping, anti-subsidies and specific protection clause agreements. The Central Europe and Central America Specific Protection Clause Agreements for textile and clothing products are expiring soon. The Chairman of the China National Textile And Apparel Council, Du Yuzhou expressed that, "The year 2008 is the final year for specific protection clause agreements to be in place. There is no reason for the renewal and continuation of specific protection clause agreement after 2008. However, there is no ending to trade protectionism. Enterprises need to continue to handle this problem. At present, the main tasks for enterprises are to accelerate the improvement on technology; to develop their own brand names and to deeply entrench reform; to reform the enterprises systems, and to realize the establishment of their international operations. International cooperation of production facilities and real-time management of product process, and the tracing of on-site conditions at all levels all aim to improve the core abilities of enterprises, namely flexibility and swiftness. Hence, these activities aid enterprises to instantly tackle the pressures arising from the ever changing market conditions and from the competitors, and add value to the enterprises.

The "MSC RFID WIP Management System for the Apparel Industry" makes use of the state of the art RFID technology, which is a tool to improve the operational flow. The Management System adopts low frequency RFID technology and information technology. It collects / analyze data during the entire production work flow on a real time basis. Looking from the garment manufacturing point of view, MSC RFID WIP Management System coordinates different work flow structures, business characteristics and provide a series of solution. This specifically deals with common production problems encountered by the spinning & weaving and garment enterprises.



The System rides on common Internet network infrastructure and possesses the "JIT" and "unlimited regional restrictions" characteristics. We can employ the MSC System to obtain information about the production quantity of upstream and downstream workplaces on a real time basis. We do not only trace the efficiency of each of the production lines, but also we can

trace the performance of each sewing machines and each workers. When we take into account of quality issue, we can conduct upstream or downstream tracing, and detect the source of the problem on real time base. Thus, accountability is seamlessly achieved. Enterprises may improve both the flexibility of their production plan and the efficiency of product line execution.

The MSC RFID System adopts Microsoft's latest flagship product (e.g. SQL Server 2005), it helps handle large quantities of real time data. Enterprises may also analyze and prepare reports on the production capacities for the entire production facilities. This does not only assist the management to supervise the performance of the production line and individual workers, but also reduce wasting of time at work. Hence, it helps expedite the delivery schedule of goods. The System turns raw data into clear and useful production data for analysis, so to establish a result-oriented system. This System does not only improve the usage of information, but also enhance the managerial abilities to all level of supervisors, factory manager. In turn, it improves the market competitiveness of the company.

High Visibility and Transparency

The trading and manufacturing enterprises of Hong Kong have skillfully sourced raw materials and high efficiency labor power from all over the world to manufacture new products. Garment factories source high quality yarns globally and develop new products. Thus, garment enterprises' production technique, business operation and management culture has cross-border characteristics. They usually have the following requests:

- To effectively supervise outsourced working process, including swift production, short term delivery of goods, and swift response to customers' requests
- To effectively utilize information technology to assist in the design and production process. To better utilize network infrastructure to connect to worldwide client.
- The Hong Kong headquarter is responsible for the management of the enterprises' operation. It also takes care of corporate finance, technology, design, sample development, quality control, marketing, and the delivery of end products to the retailers from the production line
- To thoroughly understand the operation, production facilities and production capacities of factories within Asia market and global market.
- To understand the upstream supply market condition and downstream sales market condition. To understand the market needs and the customers' preferences trend, and to respond accordingly.



To achieve the above objectives, and effectively operate and supervise the entire business operation, enterprises need to have a strategic plan in place. Statistical research shown 60% of human activity originates through visualization and cognitive learning. Therefore, management emphasizes on planning & execution of strategic plan and requests high



transparency within organization. Employees may easily understand and abide the rules & regulations.. In turn, employee could execute daily tasks easily. The MSC RFID System aims to provide management solutions to the needs of production management of modern enterprises. The System standardizes, expedites and simplifies the production management process. Aligned with "Standard Allowable Minutes" (SAM), The System can improve production efficiency; reduce the cost of labor and fully utilized of production facilities and labor. When IE and SAM are used jointly in the labor-intensive Textile and Clothing Industry, many complicated activities may affect the result of production. The MSC System enables enterprises achieve high visibility and transparency to each workers or individual work process, so that any matters can be handled immediately.

Public Recognition & Acceptance of MSC RFID Solution

The "MSC RFID WIP Management System for the Apparel Industry" received the Microsoft 2006 award for Customer Experience in Greater China. The System also received the HKICT eBusiness (Product) Award – Gold Award in 2006. Presided by the honorable Financial Secretary Henry Tang, MSC was selected among hundreds of applicants as a winner. The ICT Awards is a top award supported by the Government's Chief Information Officer and the Government's Special Administrative Region.

Comments from HK ICT Judging Panel – “Elegant use of modern technology to handle traditionally intractable problems. Real time information shows who is sewing which bundle, allowing fast resolution of bottlenecks, a reduced WIP inventory, and the rapid tracing of quality issues to their source. Productivity is increased, and labour costs are significantly reduced, and valuable industrial engineering information can readily be obtained from the system.”