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**"Successful Deployment of an M3 Project
(Multi-Site, Multi-Divisional, Manufacturing Execution Systems) "**
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Moore Corporation was founded in 1882 and has grown into an international company with 17,000 employees and \$2.7 billion in sales. Moore designs, manufactures, and delivers end-to-end business communication solutions. Products and services include document formatted information systems, print outsourcing, and data-based marketing. The company's customer focus is to help clients increase revenues, reduce expenses, and better manage assets.

Moore Corporation is currently implementing a Manufacturing Execution System (MES) in thirty North American plants. Moore chose SynQuest as the software vendor utilizing their Supply Chain Performance Suite package. The primary driver of this project was to maximize the profit contribution through balancing response times, sales revenues, and costs. Moore's continuing objectives for the system are to reduce inventories, improve labor and equipment productivity, minimize paper and material handling waste, and increase fixed overhead productivity.

The MES project began with creating a master plan. First, the problems facing the company were identified and defined. Functional requirements were then developed into project objectives. As planning continued, ideas for improvements were recorded for future reference. The type of technology platform and vendor were then selected. The outline of the project permitted explanation of the goals of the program to internal project sponsors, champions, teams, and users. In addition, the plan created justification for the time and expense of completing the project.

There were several important steps in the implementation of the MES project. First, internal project sponsors and champions needed to be identified. Champions were developed at multiple levels to provide full support throughout the company. Frequent updates were provided to keep all of the key personnel informed of progress. Second, the philosophy of the project was set. The people were empowered, the project was operated under constraint management, and the vendors were treated with integrity and a partner-like attitude. All guidelines for interactions were carefully documented. Next, the project teams were established. Team members were selected based on their level of capability, motivation, and willingness to learn. High people skills were essential to the success of the program. The project manager required a combination skill set of planner, politician, and quick actions. In addition, team member recognition from simple verbal "thank you's" to official executive presentations was important in keeping team moral high. Other important team factors included individual training, project support, and empathy for the difficult tasks.

Project failures developed into an important factor implementing the MES system. It was critical to build acceptance of failure and the ability to learn from it into the philosophy of the people. Early failures were a teaching tool, providing useful course corrections and helping to identify special training needs. Some early failures even became rallying points that boosted the convictions of team members. Failures late in the project are less useful. These failures become detrimental because the implementation team starts to tire, the momentum of the project resists major corrections, and the management is less tolerant of late term problems.

The MES system provides users with the ability to easily extract and view important information. Shop layout diagrams on the computer system provide color-coded visual indicators of bottleneck or troublesome areas. Order status screens display the status of every order in the plant for quick

customer verification. Bill of process information is displayed indicating every material in all of the processes. SAP production order screens summarize operations and progress to date. DMI/Automation modes indicate a variety of machine efficiency data including actual performance as compared to standard production times. Finally, through a customer tracking system, the customers themselves can view order status at each specific Moore plant.

Moore has three levels of support for the MES system. Level 1 consists of the help desk in which dedicated people provide the first contact point to assist users that have problems with the software. Level 2 support personnel have more in-depth knowledge of specific applications and assist with more complicated problems. Level 3 personnel are at the corporate level and provide assistance with additional troubleshooting throughout various ranges of problems. The people within all levels of support are included in weekly meetings to share their problems and experiences. The various levels of support personnel also are utilized as a source for product testing prior to release.

Full benefits of MES are realized when it is completely integrated with the ERP system. Targeted improvements are reduced cycle-time, on-time delivery, inventory reductions, and direct labor reductions. Direct labor reductions don't necessarily eliminate people from the workforce, but rather reduce overtime and redundant tasks, and better direct the workforce for value-added activities. During the first six months of implementation, the Angola plant experienced a 1% decrease in inventory, 10% increase in on-time deliveries, and reductions in cycle times. The new system gave the plant management the ability to determine what specific components of production were behind schedule. MES enabled management to plan only specific personnel for overtime instead of the entire workforce, which results in significant direct labor savings.

MES system progress is measured and tracked through the use of scorecards at each plant. Each plant reports specific information to corporate headquarters. Direct labor, fixed costs, inventory, and productivity are all measured. The benefits from the system are not seen immediately, but rather take months to achieve. In order to achieve maximum results, several methods must be followed. Focus must be concentrated on the use of the full system, not individual portions. Management education should be developed with an executive sponsor to train the leaders on the difference in management styles with the new system. Division teams should lead progress, and core teams should visit all sites quarterly. All expenses and expenditures should have a single point of control. In addition, all project members must be knowledgeable of the system.

Additional lessons were learned during the implementation of the MES system at Moore Corporation. People selection was one of the most important factors contributing to the success of the project. Individual management or IT experience were not as important as motivation, desire, and willingness to learn. The entire project became a balancing act between the scope of the program and what could be achieved within the allotted time-frame utilizing available resources. In addition, an information database specifically for the project was created and all personnel were given access. Finally, vendors must be treated as partners to ensure a successful implementation and continued operation.

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