ABSTRACT

ABC Microelectronics (Thai) Ltd. is a factory for assembling and testing integrated circuit. In March 1999, the manufacturing volume will increase 40%. Equipment will be bought and transferred from Singapore to support increasing volume. Maintenance management information system is a system used to monitor and control equipment downtime. Current computerized system has problems about speed of data entry and report. Consequently, the new computer is required.

The new system is designed to use modern structured analysis and design methodologies. ER diagram is used for data modeling. Data flow diagram, process specification is used for modeling data flow and process. Structured chart and module specification are used for software module design. The proposed system is a two-tier client/server system that uses PowerDesigner DataArchitect software as database design tools, PowerBuilder as database application development tools and Microsoft SQL Server as database management system. Graphic user interface, business rules and application logic are run on the client while database management software is run on the server. The existing category 5 UTP cable, Ethernet, Fast Ethernet network are used while TCP/IP is used as transport protocol. The investment and implementation costs are 1,085,000 baht. Annual operating cost is 42,000 baht. Actual annual cost saving is 448,000 baht. Payback period is 3 years, 6 months. The system lifetime is 5 years. As a result, the proposed system is reliable and has low development time.

In summary, the proposed system works faster than the existing system by 89.1 %. The proposed system should be extended to support the Total Productive Maintenance concept that will be implemented in the future.