Industry 4.0: ERP and Shop Floor Integration with Manufacturing Execution System (MES) in Sri Lankan Manufacturing Organizations

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Worldwide manufacturing industry started to go with Industry 4.0 and so does Sri Lankan manufacturing industry. For this revolution, Shop floor integration is an essential requirement for implementing concept of industrial 4.0. Considering Shop floor integration, there are two facts according to the manufacturing IT; First Integration of all machines, systems, user interfaces. (Central IT systems - manufacturing execution systems (MES) level) in simple words the MES has to ensure the product is manufactured correctly. In this matter a lower level layer / shop floor integration layer should handle the process. This layer manages the MES, all the details of shop floor control and communication. Second fact is communication of the systems at the shop floor. The purpose here is the supply of industry standard interfaces and shop floor integration platform PAC is an ideal product for implementing these concepts. ERP systems contain information regarding inventory, customer demand and MES control contains how to build it. So integrating these two could help increase operational efficiency and enable organizations to become more flexible. In addition, real-time information exchange between the business layer and the production layer could help increase overall efficiency, reduce cycle time and management could get more visible information and that helps improve decision making. The study’s aim is to find out requirements and possibilities to implement such technologies in line with industry 4.0 revolution in Sri Lankan context, as a result of a survey conducted among selected manufacturing organizations who already use ERP system or are capable of implement ERP systems featuring Manufacturing Execution System.

Keywords: ERP, MES, Shop Floor, Programmable Logic Control (PLC), Industry 4.0