Advanced Digital Manufacturing: Case Study

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Abstract : Most industries are looking for technologies that are easy to use, efficient and fast to accomplish. To implement these, factories tend to use advanced systems that could alter complicity to simplicity and rudimentary to advancement. Cloud Manufacturing is a new movement that aims to mirror and integrate cloud computing into manufacturing. Amongst cloud manufacturing various advantages are decreasing the human involvements and increasing the dependency on automated machines, which in turns decreases human errors and increases efficiency. A reliable and extraordinary performance processes with minimum errors are highly desired factors of today's manufacturers. At the glance it seems to be the best alternative, however, the implementation of a cloud system can be very challenging. This work investigates cloud manufacturing in details, it outlines its advantages and disadvantages by converting a local factory in Kuwait to a cloud-ready system. Initially the flow of the factory's manufacturing process has been analyzed identifying the bottlenecks and illustrating how cloud manufacturing can eliminate them. Following this an automation process has been analyzed and implemented. A comparison between the process before and after the adaptation has been carried out showing the effects on the cost, the output and the efficiency of the process.

Keywords : cloud manufacturing, automation, Kuwait industrial sector, advanced digital manufacturing

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