APS1028 – Operation and Production management

AI in ERP Systems:
Applications, Implementation, and Risks
- Executive Summary-

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Executive Summary

This report aims at providing an insight into AI usage in ERP systems. The analysis is done though a case study of the ERP system of three companies and their ability to integrate AI. The first company is a manufacturer in transport, the second is a manufacturer in resistor and power distribution components, and the third is a manufacturer in the aerospace industry.

The first part of this report assesses the actual level of awareness of each company about their data management and ERP software usage. A survey with multiple questions is sent to the executives from each company and the key findings are recorded based on their answers. Each company's ERP usage and integration were graded on a scale of 1 to 5, where 1 implies minimal usage and integration whereas 5 implies world class usage and integration. Key findings of each survey addressed main purpose and level of their ERP usage, the challenges each company faces in terms of implementing full functionality of their ERP software and their level of commitment in integrating task automation and AI in near future.

Different case studies were conducted to investigate AI implementations by commercial ERP products. Different applications are identified and narrowed down to 3 major applications such as, chatbots, production scheduling and financial management.

In terms of chatbots, a literature review has been done to understand the factors that enables companies to benefit from their ERP's performance and how chatbots can facilitate the conditions to achieve those benefits. The report highlights the important of training and supports in the implementation phase of an ERP system and discusses how a chatbot can both improve the user interaction with the system and provide a round-the-clock support.

In terms of production scheduling, a detailed study was conducted about NetSuite and SAP ERP systems and their production scheduling capabilities and then the report discusses how these ERP software can utilize the power of AI in production scheduling to eliminate the human intervention completely.

In terms of financial management, we discuss the role of AI within three broad categories: intelligent automation of data-entry and accounting processes, increased forecasting accuracy and capability, and supervisory notices and insights. As the most developed of the three, we focused on automated financial processes, and particularly automated invoice processing, which was found to be easily implementable due to commercial solutions available and potentially having major efficiency increases for businesses.

Finally, recommendations were given to those three companies to address the challenges they are facing related to ERP software integration and usage. Preliminary actions and medium and long-term goals were tailored to each company separately in order to implement AI to their ERP systems in near future.