



**PT YAMAZAKI MAZAK UTILIZATATION OF iSMART TO
IMPROVE THE DESIGN INNOVATION AND PRODUCTION**

MASTER'S FINAL PROJECT

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Magister Manajemen**

By :

Naka Supriadi

023202305030

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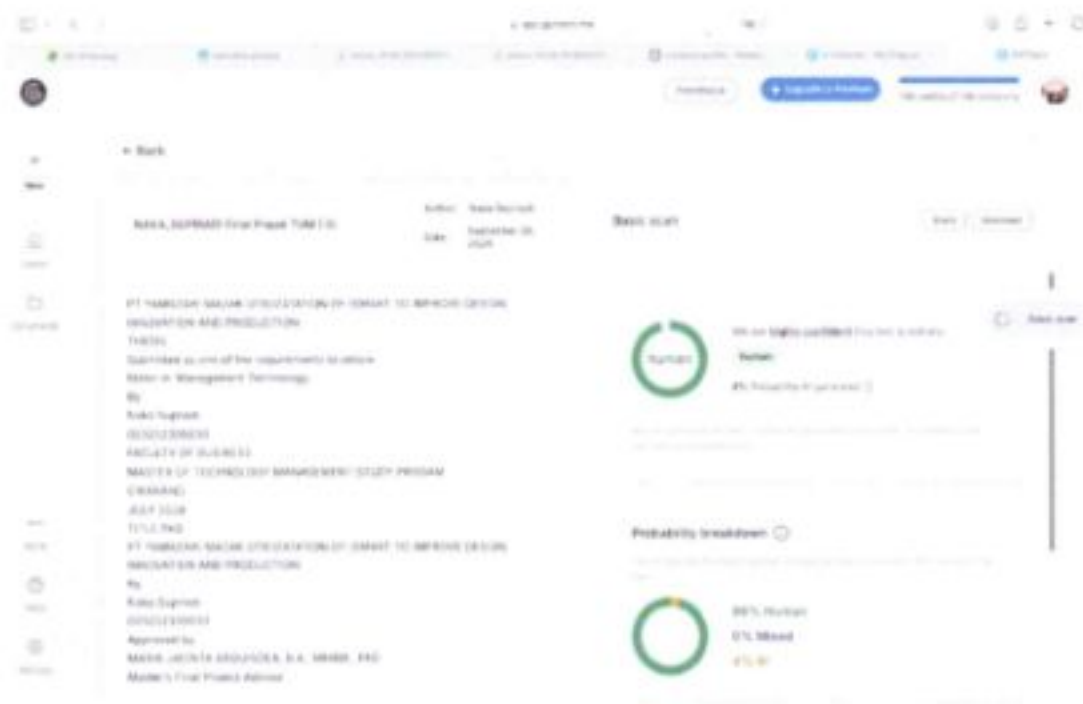
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ABSTRACT

In today's digital factory structure, it is important to build a smart factory to upgrade the manufacturing industry. Smart factories adopt a combination of physical technology and cyber technology and deeply integrate previously independent discrete systems, making the technologies involved more complex and precise than they are now. This research explores the utilization of the iSMART Factory by PT Yamazaki Mazak to enhance design innovation and production efficiency. As industries increasingly adopt smart manufacturing principles, the integration of advanced technologies such as the Internet of Things (IoT) and additive manufacturing (AM) becomes crucial. The study highlights how PT Yamazaki Mazak leverages the iSMART system to collect and analyze real-time data, thereby optimizing production processes and improving decision-making capabilities. Additionally, the research examines the sustainability aspects of design within the company, emphasizing its commitment to reducing environmental impact through innovative practices. Furthermore, it investigates the application of design strategies related to additive manufacturing, proposing a framework that enables engineers to harness AM's potential for creating complex components and enhancing product customization. By implementing these strategies, PT Yamazaki Mazak not only improves operational efficiency but also positions itself as a leader in manufacturing innovation. The findings underscore the importance of embracing digital transformation in manufacturing to remain competitive in a rapidly evolving market landscape.

Keywords: iSMART, design innovation, additive manufacturing, sustainability.

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