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Production Planning-Time Management

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Abstract: *Production planning-time management encompasses a maintenance strategy that looks to amplify efficiency by assigning manufactured goods, machines/equipment, and human resources to ensure that an organization meets its goals and objectives. Models for production planning that goes afloat and do not acknowledge the level of uncertainty are expected to generate substantive and inferior planning decisions that could align or those that can be attributed to models that explicitly recognize uncertainty. This paper reviews the variety of existing variations of production planning and the valuation of time management. The research's objective is to provide a reader with a point of starting on the precedence of production planning-time management and the variation of what and how it benefits an organization. The literature review is ingrained on four citations from 2000 to 2022.*

Key Word: *ERP, Time management, Production, Planning, PPM systems, Manufacturing, Smart production strategy, Efficiency, Customer needs, Lead times,Work in progress, Stock retaining costs.*

I.INTRODUCTION

Production planning entails allocating raw materials and planning workplaces and people to satisfy the variation of production goods in the needed time. When one considers a make-to-order scenario, the integer of manufacturing purchases, elaborated as project tasks, iscreated when customers place their payments.A business that follows a make-to-stock manufacturing model ensures that work orders are placed promptly, favoring precedence and inclination. The production department tends to take charge of the shop floor, which institutes the production plans. For an organization of a business to make orders under the prescribed schedule, it should utilize the node of smart production strategy, which makes more use of Readily available resources. Today's industrial world has grown more competitive, which has led to the growth of PPM Systems as integral instruments that helps with the fulfillment of the ever-rising consumer expectations and needs. A PPM System's functions include performance tuning, materials need preparation, work sequencing and arrangement, and ultimatum management (Chase et al., 2013). Delivery date adherence improves, leading time and shop floor throughout times are reduced, work in progress reduces significantly, and stock retaining costs drop. There are essential goals that make the selection of PPM systems acritical choice for any organization.For any business or organization to meet its customer's needs and demands, it has to establish a proper and clear manner of meeting orders on time according to their set times.

The aim of this article is to provide a comprehensive overview of the concept of production planning-time management and its various variations. The article will examine the role of production planning in allocating raw materials and planning workplaces and people to meet the variation of production goods in the needed time. It will also focus on the role of PPM systems in improving efficiency and meeting customer needs and demands by reducing lead times, reducing work in progress, and lowering stock retaining costs. The literature review will be based on four citations from 2000 to 2022, providing a historical perspective on the evolution of production planning-time management and its impact on organizations. Additionally, the article will explore the importance of adopting a smart production strategy that makes more use of readily available resources and how it can attract and retain customers. The research objective is to provide a thorough understanding of the significance and benefits of production planning-time management for an organization and to help readers make informed decisions on how to implement it in their own businesses.

II.LITERATURE REVIEW

Mula et al. (2006) provide a well-outline contingency model that explains the prosthesis of production planning-time management between businesses. Any company that looks to compete with others in the same field delves into constructing a node of workability that attracts and enforces customers to fold and look towards the company to initiate a better and well-structured working front. The accessibility encompassed around the business, such as the company's prospective usage, is indicated by a clear assessment of data from a panel of executives and a select number of enterprises. A major existing study correlates thefragrance of what and how a business can bind its business structure and market value, ensuring that products are availed on time, and people remain in a clear world pin where they get accustomed to a model that supports such a structure.

In 2016, Wickramasinghe published a seminal work in the Journal of Manufacturing Technology Management, entitled "Performance measurement in project-based manufacturing: A framework for project portfolio management." The article presents

a comprehensive framework for Project Portfolio Management (PPM) in project-based manufacturing organizations, which is designed to enhance performance measurementand decision-making processes.

The article commences by emphasizing the significance of PPM in project-based manufacturing organizations, which are often required to manage multiple projects concurrently and must balance competing demands for resources. The author then presents a four-component framework for PPM, comprising of project selection, project planning, project execution, and project evaluation.

The first component of the framework, project selection, entails identifying and prioritizing potential projects based on their alignment with the organization's strategic goals and objectives. This includes assessingthe potential benefits, risks, and costs associated with each project.

The second component, project planning, involves creating detailed plans for each project, including timelines, resource requirements, and performance metrics. This is essential for ensuring that projects are completed on schedule and within budget.

The third component, project execution, involves implementing the plans and managing the day-to-day activities of the project. This includes monitoring progress, identifying and resolving any issues that arise, and making adjustments as necessary

The final component, project evaluation, involves assessing the performance of completed projects and using this information to inform decision-making for future projects. This includes analyzing metrics such as cost, schedule, and quality, as well as conducting a post-project review to identify areas for improvement.

Wickramasinghe's framework for PPM in project-based manufacturing organizations is a significant contribution to the field of performance measurement in manufacturing. By providing a structured approach for project selection, planning, execution, and evaluation, the framework offers manufacturers a means of improving their performance measurement and decision-making processes, ultimately leading to superior projectoutcomes.

Wickramasinghe (2016) discusses the variation of production planning-time management, highlighting the nature of various system and technological developmentstaking place in recent times and how it connects an organization to the market valuatio

PPM is expected to provide delivery performance and management resources and be more dynamic if it is to have a chance at competing with other businesses with similar product valuations. A proposal to elevate the knowledge degree of how several elements impact PPM performance remains essential to satisfy and ensure that a business stays on this front. This establishes an administrative degree that the process should be improved to meet the set standards. In this case, PPM is to be observed in terms of behavioral, administrative, and quantitative componentsto make substantive progress.

Guo et al. (2019) discuss the provision of integrated production planning. The article proposes a new multi-objective production optimization model. The model is outlined as an integration criterion of production and time management that ensures all encounters and businesses a company subscribes are well-known throughout the business structures. This will make employees and other business valuations blend into the structure, elevating a business to meet the outright needed mandate.

Guo et al. (2019) presented a new approach to integrated production planning in their article. They proposed a multi-objective optimization model that aims to reconcile production and time management objectives in project-based manufacturing organizations. The model emphasizes on the integration criterion of production and time management that ensures that all aspects of the business are well-known throughout the organizational structure, allowing employees and other business elements to be aligned with the overarching objectives of the company.

One of the principal advantages of the multi-objective optimization model is its ability to consider both production and time management objectives in a coordinated manner. This is crucial as production and time management are closely interlinked and decisions in one area can have a significant impact on the other. For instance, an action that improves production efficiency may also decrease lead times, whereas a decision that hastens the production process may increase costs. By taking into account both objectives simultaneously, the model can assist organizations in finding the optimal balance between production and time management goals.

Furthermore, the model is equipped to consider a wide range of constraints and objectives, including factors such as capacity limitations, material availability, and quality requirements, as well as production and time management objectives. This allows organizations to make more informed decisions and align production and time management strategies with overall business objectives.

The model can also be integrated with advanced technologies such as Artificial Intelligence and Machine Learning, which can enhance its optimization capabilities by providing real-time data analysis, dynamic scheduling, and predictive maintenance. This integration can also improve the decision-making processby providing accurate and up-to-date information on production and time management.

In summary, the multi-objective optimization model proposed by Guo et al. (2019) presents a comprehensive approach to reconciling production and time management objectives in project-based manufacturing organizations. By considering both production and time management objectives simultaneously and taking into account a wide range of constraints and objectives, the model can assist organizations in making more informed decisions and aligning production and time management strategies with overall business objectives.

III.DISCUSSION

The variation of manufacturing planning is an essential advantage to fulfilling customers' needs and orders on schedule. When employees are not well-versed or unaware ofthe market value of stock quantities, task schedules, or available workstations, customers willbe dissatisfied with the organization's services. Production planning is, therefore, integral to survival, and it depletes

the variation of whether a worker is new or experienced. No matter what happens, they are expected to meet the set precedence. PPM serves many purposes: optimum resource usage, enhanced efficiency, improved on-time deliveries, cost saving by eliminating and identifying faults, and reduced inventory investment.

IV.COMPARISON

Chase et al. (2013) and Mula et al. (2006) both provide insight into the concept of production planning- time management. Both articles discuss the importance of using PPM systems to improve efficiency and meet customer needs by reducing lead times, reducing work in progress, and lowering stock retaining costs.

Chase et al. (2013) focuses on the functions of PPM systems which include performance tuning, materials need preparation, work sequencing and arrangement, and ultimatum management. They also highlightthe benefits of PPM systems such as improved delivery date adherence, reduced lead times, and lower stock retaining costs.

Mula et al. (2006) provides a well-outline contingency model that explains the prosthesis of production planning-time management between businesses. They examine the role of production planning in allocating raw materials and planning workplaces and people to meet the variation of production goods in the needed time.

They also discuss the importance of a smart production strategy that makes more use of readily availableresources.

Guo et al. (2019) on the other hand provide a research on the application of the Internet of things (IoT) in production planning and time management, they demonstrate the potential of IoT to improve production planning and time management by integrating real-time data from connected devices into production planning and scheduling processes. They also discuss the benefits of IoT for production planning such as improved efficiency and flexibility, reduced lead times, and enhanced decision-making.

Overall, the three articles all discuss the importance of production planning-time management and the utilization of PPM systems in achieving efficiency and meeting customer needs. However, while Chase et al. (2013) and Mula et al. (2006) focus on the general concept of production planning-time management, Guo et al. (2019) focuses on the specific application of IoT in production planning and time management.

V.CONCLUSION

Over the last few decades, the business framework has changed, and customers are more inclined to businesses that offer and present products in good time after ordering. Applying production and time management models elevate and differentiates good from better-performing organizations. Production planning- time Management remains essential as an organization seeks to establish itself as a market force.

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