

TEAM ID:	PNT2022TMID07295
PROJECT NAME:	Inventory Management System for Retailers

## **IDEATION PHASE**

### **LITERATURE SURVEY & INFORMATION GATHERING**

#### **INTRODUCTION:**

Inventory management is the activity of controlling the continuous flow of inventory in any organization, which is into either production, trading, sales, or services. In spite of the reality that the rise of inventory management is inexact, it would be safe to say that shopkeepers and merchants were some of the initials to explore into these fields. Yet the interest in this managerial field is still great in the phase of optimizing. Low inventory usually results in the stock outs and maintaining excess inventory results in additional holding costs. Inventory management is an essential and much required activity that every organization would like to consider various purposes in order to maintain the customer's good will and to make comparatively high profits. The goal of each inventory planner is to achieve optimum inventory controlling plan. In this paper, an attempt is made to cover most of the techniques and models developed in order to achieve the most accurate, effective, and efficient.

#### **LITERATURE REVIEW:**

Inventory management is considered as major concerns of every organization. In inventory holding, many steps are taken by managers that result a cost involved in this row. This cost may not be constant in nature during time horizon in which perishable stock is held. To investigate on such a case, Taygi (2014) proposes an optimization of inventory model where items deteriorate in stock conditions. In this paper, based on a real-world case study for a municipal district in Tehran, a multi- objective mathematical model is developed for the location-distribution problem. The proposed model considers the role of demand in an urban area, which might be affected by neighbor wards. Integrating decision making process for a disaster helps to improve a better relief operation during response phase of disaster management cycle. In the proposed approach, Esmaeili (2014) says, a proactive damage estimation method is used to estimate demands for the district based on worst-case scenario of earthquake in Tehran This paper deals with the application of six most potential preference ranking methods for selecting the best FMS for a given manufacturing organization. Chatterjeea and Chakraborty (2014) say, it is observed that although the performances of these six methods are almost similar, ORESTE method slightly outperforms theothers. It is particularly applicable to those situations where the decision maker is unable to provide crisp evaluation data and attribute weight.

Ulrich and Pearson (1998) introduce approaches for the integration of the Quality Function Deployment method as well as feedback with system components for computer aided product development. The integration is based on information models representing product, process and factory information.

Pastore and Martin (2012) study was to examine students' perceptions of designing and developing mobile based instructions by interviewing and surveying of graduate students. Results of the survey and qualitative data analysis indicated that usability was a key issue on the mobile device. Users enjoyed quick access, good organization, user control, single column layouts, and large links/buttons. These findings contribute to the literature base on the design and development of mobile based instruction.

Norman E (2012) discusses, while existing factors identified in the literature were found to be present in the context of today's design program, the critical perspective of this study recontextualized these factors, along with the identification of new underrepresented factors. Taking on the perspective of a student's experience of pedagogy foregrounds issues of uncertainty and ambiguity, highlighting the social interactions between fellow students, and the role of communication and individual effort in learning to think in a more designerly way.

A design literature discusses the role of the studio and its related pedagogy in the development of design thinking. Scholars in a variety of design disciplines pose a number of factors that potentially affect this development process, but a full understanding of these factors as experienced from a critical pedagogy or student perspective is lacking. In this study, Gray (2013) explains the experiences of six first-year design students were examined as they evolved in their conceptions of design.

Agnelo and Fernandes(2012) aims to analyze, through a case study called Researching the Value of Project Management, the relations of the constructs of this conceptual model and to show how they interfere with the organizational values, possibly in programs conducted by a government agency, from the perspective of the senior management directly involved.

The term emerging technology (ET) has been frequently used by IT professionals and academics. However, little research has shed light on this term and specified its characteristics and what it means. Halaweh M (2013) aims to define and conceptualize the characteristics of ET. These characteristics are uncertainty, network effect, unseen social and ethical concerns, cost, limitation to particular countries, and a lack of investigation and research. Today's industry projects and extensive literature suggest the importance of customer integration for companies' innovation success.

In this exploratory study, Strub and et al (2013), build on established customer role concepts to study the status quo of customer integration in industry, as well as reservations against the roles and negative experiences from customer integration projects. The study reveals a gap between reservations and actual negative experiences in losing know-how, as well as a positive effect of experience in customer integration on perceived benefits for the company.

Antonelli and et al (2013) aims to identify Information Technology benefits in individual work. With technologies fully implemented, greater satisfaction was observed for all constructs of the survey, with statistically significant differences. When comparing age, it was found that younger users were more satisfied with the benefits of technology. Concerning the number of employees, small business users were less satisfied with Information Technology.

Alderete (2013) presents an econometric model to determine whether an SME (Small and Medium Sized Enterprise)'s probability of outsourcing depends on their levels of innovation and information and communication technology use. The model predicts that the level of innovation of an SME will significantly influence its probability of outsourcing. Besides, it stresses the negative incidence of the information and communication technologies (ICT) access on the outsourcing decision.

Didonet and Díaz, (2012) explains, the supply chain management studies have verified that integration and collaboration in the supply chain can provide important benefits to the companies involved. Among these benefits are added value, the creation of efficiencies and client, which are represented by the reduction in inventories, improvements in service delivery and quality and shorter product development cycles.

Zabala (2012) investigates whether decisions considered as common in new product development literature are also valid in a region characterized by traditional industries. The author aims to link the theoretical and empirical fields in the context of new product development and product innovation management.

Leber (2014) reports the results of a survey on the use of innovation management techniques with the potential to improve effectiveness of new product development, and customer satisfaction. Failure mode and effects analysis was found as the most applied IMT in Slovene firms with the highest perceived utility potential to reduce development costs and improve customer satisfaction.

Nezhad (2013) employed the decision on belief (DOB) approach for fault detection in univariate process control. The concept of DOB and its application in decision making problems were introduced, and then methodology of modeling fault detection in statistical process control by DOB approach was discussed.

Dou (2014) paper is committed to design a logistics industry development policy model based on system dynamic to simulate the policy measures which promote region economic and logistics efficiency. The interaction between logistic industry development policy and economy needs to be investigated and the influence degree of logistic efficiency affected by industry policy needs to be identified too.

Jha (2012) presents an overview of new approaches in rapid product development in production networks from design points of view. Due to evolution of production networks, it has become possible to obtain the mass production within a key short time, using emerging technology that affect the speed and efficiency of product development.

Cheng (2013) proposes a multi-objective production planning optimization model based on the point of view of the integration of production planning and control, in order to achieve optimization and control of enterprise manufacturing management

Babazadeh(2012) studies a multi-period, multi echelon and multi-product integrated forwardreverse logistics network under uncertainty. First, an efficient complex mixed-integer linear programming (MILP) model and then stochastic counterpart of the proposed MILP model. Internal rate of return (IROR) method as a decision making tool receives widespread use and acceptance in economic analysis.

Ahmad and Khaldoun (2011) research aims at presenting a realistic approach for resolving the multiple rate of return (MROR) problem. The key advantage of the proposed approach is that it reflects real life opportunities and its decisions are consistent with worth methods as well as with other approaches.

Mandahawiand et al (2012) presents a process improvement study applied at a local paper manufacturing company based on customized Lean Six Sigma methodologies. The DMAIC (Define, Measure, Analyze, Improve, and Control) project management methodology and various lean tools are utilized to streamline processes and enhance productivity.

Heskett(2009) examines the influence of major economic theories in shaping views of what constitutes value as created by design system. Its focus on markets and prices as set by market forces are believed to solve all problems if left free from government interference. The implosion of this system and its emphasis on unrestricted individualism is a crisis of theory as well as practice.

This paper, Kim and Kang (2008), identifies the critical factors of cross-functional cooperation for design teams in new product development. The empirical research available defines eleven critical success factors for the achievement of effective cross-functional teamwork with design teams in NPD and provides evidence of the positive relationships of these factors with cooperative work performance.

Vendanand Sakthidhasan (2010) addresses the application of lean manufacturing concepts to the continuous production sector with a focus on the motor manufacturing industry. The goal of this research is to investigate how lean manufacturing tools can be adapted from the discrete to the continuous manufacturing environment.

Davis (2008) identifies the pressures on knowledge generation exerted by the shift from a mechanical, object centered paradigm for design practice to one characterized by systems that: evolve and behave organically; transfer control from designers to users or participants; emphasize the importance of community; acknowledge media convergence; and require work by interdisciplinary teams to address the complexity of contemporary problems. Desmet and Hekkert (2007)say that surprisingly little is reported on the pragmatic influence of project stakeholders on industrial designers' selection of product materials and manufacturing processes. This paper reports on a descriptive scoping study that revealed these influences as critical in making effective selection decisions. Using interview and case study methods, the study elicited the professional practices of industrial designers.

This paper, Thomas Tieke(2009), we propose a framework for understanding congruence effects in design based on recent studies addressing processing fluency. Based on these findings, the authors propose that incongruence thwarts impression formation of product and brand by inducing ambiguity, thereby negatively affecting attitude formation.

Berrah and François (2012) paper deals with the wide issue of overall performance expression of a system made of interacting entities. Supply chain being a network of interconnected business entities, it is proposed to consider it as a system of systems. Because system behavior depends on process dynamics, the performance of any company of the SC highly depends on the performance of its processes.

Finger S and Dixon (1990) says that formal design research seems to have begun in the 1960's, with so-called "first generation" models used to attempt to find generic optimization routines that could be applied to any type of problem. The architectural models tended to include cognitive processes, while engineering models attempted to define stages in the design process. Forlizzi (2008) introduces Product Ecology as a theoretical design framework to describe how products evoke social behavior, to provide a roadmap for choosing appropriate qualitative research methods and to extend design culture within by allowing for flexible, design-centered research planning and opportunity-seeking. This product-centered framework is illustrated as a method for selecting a set of design research methods and for working with other research approaches that study people in naturalistic settings.

Jerrard and et al (2008)research elicited the risks and risk perceptions involved in designing and developing new products. Design practices will be able to identify with common practices and utilize techniques in the research in order to recognize risk in design processes.

Stolterman(2008) based on a comparison between the notion of complexity in science and in design, it is argued that science is not the best place to look for approaches and methods on how to approach design complexity. Instead, the case is made that any attempt by interaction design research to produce outcomes aimed at supporting design practice must be grounded in a fundamental understanding of the nature of design practice.

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