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Challenges and Advancements In The Field of Inventory Management

Aditya Sawlikar¹
MBA Student,
SIBM, Bengaluru

Dr. Alka Sawlikar²
Assistant Professor
RCERT, Chandrapur

Abstract: There are many challenges in the inventory management systems taken up and being solved in the industry and thus there are some problems that still exist and cannot be solved and implemented by all the sectors. The aim of this research is to form a set of implementation techniques that can be implemented in different scenarios. This paper provides the advancements and best challenges of the major inventory management techniques based on a recent review of the literature in the field and interviews with management teachers and practitioners. The beauty and basic aspects of the identified innovative techniques for robust inventory management are explained. The developing business environment where cost management has become a major policy to keep ahead of acute competition is highlighted. This paper concludes that the acquisition of an appropriate combination of modern inventory management approaches can help practitioners to improve corporate service delivery in terms ensuring constant motion of materials also minimizing the attendant carrying costs.

Keywords: Customer satisfaction, Cost-effectiveness, Supply chain management, Software applications, Warehouses and stores

I. Introduction

2019-2020 was a challenging year for businesses worldwide. Changes in ordering volume disrupted supply chains, transportation issues have made it so much harder for companies to operate. But imagine we could have an automated inventory system. The system will allow us to easily manage our stock, predict the demand, plan for greater force situations, and even more. The one that will allow our business to operate smoothly. Despite the first shock and cutbacks back in legion months, legion companies are actually keeping up or yea planning to invest more in technologies that power mechanization as well. The depot and

force conduct call was growing steadily before the plague. As of the end of 2019, this field was anticipated to double by 2025. With the worldwide plague and an ever-amplifying need to reduce earthborn involvement in all the processes, the calculation will grow yea more. Mechanization in force conduct relies on the four major types of data analytics:

1. Descriptive what's coming about with pool, how effective the processes etc.
2. Distinguishing why certain processes are failing or are less effective.
3. Prophetic when will the ensuing peak in trades appear, and when the stocks need to be altered.
4. Conventional how can each step of the process be optimized to reach the full possibility.

Espousing data analytics will help the companies meliorate their processes, liquidate the superfluous stock, manage correctness, classify reservoir more effectively, prophesy the demand, and respond therefore. And while SMEs are still catching up with sedulity leaders, machine literacy algorithms are running more and more popular in the robotization of reservoir presidency systems. They help companies reduce custom-made work, optimize costs, enable intelligent decision substance, and streamline reservoir presidency.

II. Aim

The exploration is aimed to identify and give being as well as recommended results for the colorful challenges faced insulated into different types of artificial sectors available.

Only the major Artificial sectors will be considered in the paper for the sake of simplicity and the extensiveness of the being challenges.

III. Methodology

This will be a descriptive exploration paper where data will be collected regarding the different problems faced while maintaining the force in different sectors and the styles that can be enforced to annihilate the challenges.

There's a special emphasis on the specialized aspect of force operation which includes robotization of force shadowing, accurate data operation, over and understocking problems by the use of RFID markers and barcodes and other technologies.

IV. Computer vision

Numerous companies are successfully espousing this technology, and how it can help us optimize force operation

- Ameliorate stock taking. For illustration, an automated CV system can track current force situations in the warehouse. However, it sends an alert to the force operation loss department, If the stock position is too low. Combined with technology and algorithms, a purchasing order can be automatically created.
- Reduce mortal crimes. CV systems can cut down the mortal counting crimes via an accurate bar- law scanning.
- Descry damaged particulars. CV allows businesses to allocate imperfect force particulars with lesser perfection.

Computer vision is a trend which is to stay, as it opens multitudinous possibilities and business openings.

V. Relinquishment of Automation in Inventory Management

While some companies invest heavily in robotization, numerous others lag before and lose their competitive advantage. Let's take a look at some of the benefits that robotization in force operation brings to leading businesses moment.

1. Save time and plutocrat:

Homemade labor is expensive, especially when it comes to effective warehousing and force. So companies frequently automate force operation to save plutocrat. A typical U.S. storehouse spends nearly 65 of the budget on labor, and following table is growing by 3 each time. According to ABI Research, by espousing radio- frequency identification (RFID) technology alone, businesses can save between\$ and\$, depending on their force size.

Table 1. Saving due to automated request on labor

Stores	annual cost
Small stores	less than 10,000\$
Mid-size Stores	approximate 38,000\$
Large stores	approximate 75,000\$

These are the periodic costs that nearly any company can cut down by reducing force- related labour. Also, an automated force system helps your company by saving time that else would be spent on homemade conservation of force.

2. Increase scalability

Some businesses have endured a significant change in the quantum of force they demanded to handle during the epidemic. The alternate reason for force operation robotization is scalability, which allows companies to acclimatize to request changes snappily and change their stocks. It's especially true for seasonal changes and can help businesses that largely depend on events like Black Friday.

3. Reduce mortal involvement

The worldwide epidemic has changed the traditional working conditions. WHO significantly upgraded safety demands for working environment. However, you'll be suitable involve lower help, and maintain recommended social distancing conditions, If you invest in an automated force operation system. And with smaller workers involved, you reduce chances of mortal error.

VI. Practical benefits of robotization in force operation

Piecemeal from large-scale reasons that make companies invest in robotization of their force operation, there are several specific gratuities that this decision brings to the table.

- Real- time access to data. Knowing the position of every item, understanding how well or inadequately a specific storehouse is grazed, and the capability to induce any report at a given time-these are the effects that give a competitive advantage when it comes to force operation.
- Precluding overstock and outages. Piecemeal from an effective use of storehouse space, knowing what and when to restock helps companies maintain the right balance in terms of product and delivery.
- Integration with being software. Utmost enterprises have ERP and CRM systems in place, and an automated force operation system can be fluently integrated with a current ecosystem.

As you can see, an automated force control is a tool that comes with numerous benefits. At the outset companies around the globe are heavily investing in force operation

software development. So what technological advancements are powering force operation robotization?

VII. Trends In Inventory Management Automation And Warehouse

In 2017, the Economist published a report named "The world's most precious resource is no longer canvas, but data" (4). Also since, the buzz around data has been growing exponentially. Businesses gather further and further data about their processes, guests, development, or indeed request changes. Still, only a sprinkle of enterprises is using the full eventuality of data analytics. On the map below, you can see the new data analysis uses by companies of colourful sizes. Force operation software request that powers robotization was anticipated to reach \$ 5B by 2026



Figure.1:Size of the warehouse automation market worldwide from 2012 -2025(in billion USD)

VIII. Challenges in Inventory Management Robotization

Consumer Goods/ Retail

Irrespective of the size of the business, force operation is one of the most gruelling processes in the retail sector.

In this assiduity, the effectiveness of force operation directly impacts client satisfaction. As retail is a presto- paced, and client- facing sector, client satisfaction is core to its business growth.

The force process involves multiple intricate aspects that drive accurate product delivery. Indeed a single error in the process can have precious and long- term consequences. This will ultimately affect the company's growth and character.

Therefore, retail companies need to understand and dissect the pitfalls involved in force operation. Only also can companies find visionary results to the problems.

To Increase's anywhere for Retail employs robotization to resolve critical issues of homemade force operation. Our software has helped numerous retail companies address their stock operation challenges.

Still, we've observed that companies who can identify the problems of the retail force operation can elect a retail force operation system that fits their processes stylish.

There are 5 of the most common problems in the retail force operation process

The Challenges of Retail Inventory Management Unclear Communication

Indeed in straightforward business processes, miscommunication can beget unrecoverable damage to effectiveness. You can only imagine the far- reaching impact it would have on a complex and manifold process, like force operation.

As force operation has multitudinous factors, clear communication is vital for a flawless inflow.

For case, having the correct prices is critical to publish the price markers for the products in the force. Still, if an update in the prices isn't communicated before publishing the markers, the products would go out with the wrong price markers. The variations for similar crimes would take a lot of time. Likewise, if the miscommunication isn't detected in time, it would affect the deals and profitability of the company.

Robotization can help you streamline your communication inflow across the departments. Retail force robotization software would give real- time information about the force. Correct and timely information would drop events of miscommunication.

Shy Access

Generally, inadequate access to information would lead to miscommunication issues. Every department needs to have access to data that's pivotal to their processes. Hence, the impact of the lack of proper access isn't limited to individual processes. But it also affects the complete retail force operation.

In the absence of acceptable access, your platoon would act disconnected groups. Lack of access would leave them oblivious, which, in turn, affects their productivity. Thus, better access would ameliorate the effectiveness of force and other business processes.

You can simplify your availability issue with retail force operation software. The software can efficiently manage the access of the druggies, which would, in turn, ameliorate the quality of the process.

Inefficient Warehouse Management

Storehouse operation is a core element of slipup-and-mortar retail supplies. Hence, ineffective storehouse operation would affect the complete retail force process. A decentralized force operation system would comprise the delicacy of the operations.

Numerous aspects of storehouse operation would be vulnerable to crimes without integrated software. Inept storehouse operation could lead to lost orders, detainments in order fulfilment, and crimes in payload. It also causes incorrect stock counts, inaccurate barcodes and markers, increased storehouse costs, and lost products. The problem will only deteriorate if multiple storages support your retail operations.

To manage complex storehouse operation barcoding technology is a boon s. Retail force operation software with a barcode surveying tool could be an effective result to manage storehouse processes efficiently.

Overselling

What's worse than not being suitable to vend your entire product force? It has to be overselling your product and not being suitable to meet guests' demands.

Dealing further than you can deliver could stain your business' character for a long time.

Overselling is a result of defective communication and process inflow of your force operation. This is also one of the reasons of incorrect stock counting.

For case, retail businesses keep a reserve of supplies beyond the necessary stock, appertained to as safety stock. This safety stock would come to the deliverance in a script when you aren't suitable to meet the guest's demands with the regular stock. Still, If you miscount your force, indeed safety stock may not be suitable to deliver your business from a chaotic situation.

Still, you would minimize the chances of overselling, If you could get announcements about the position of the stock in your force. A retail force result can give real- time updates about your force situations.

Spoiled Goods

For retail companies Inventory operation is more complicated which deal with perishable goods. Expiration dates come pivotal in the force shadowing process. Inefficient force shadowing can beget considerable stock and financial loss for retail businesses.

For case, the storehouse staff sends out a payload of products with a after expiration date while warehousing considerable stock with an earlier expiration date. This error would not only hinder the process cycle but would also increase the threat of corruption of the product with an earlier expiration date.

You can manage this issue with the preface of technology. A retail force operation result can track the status of perishable goods and help you reduce corruption.

Solution

You can attack all the below problems with the preface of technology.

Homemade processing is error-prone, especially in complicated processes like force operation. Retail force operation software can ease the pain of the process. It also improves overall delicacy and business productivity.

Specific force operation software for retail can streamline your core conditioning. As a result, this software would promote client satisfaction and business growth.

To- Increase Anywhere for Retail can help you dock the process cycles of tedious force processes. As our software can efficiently handle critical aspects of your force, it can be an asset to your force operation.

Challenges faced by the Ecommerce assiduity

Demand variations, rear logistics, seasonal oscillations, and stockless policy in force management and the pitfalls similar as lost deals, lost guests, low client satisfaction.

Force operation problems similar as demand fluctuations, rear logistics, stock outs, managing SKU's, keeping count of the force, multi-channel shoppers, tailback and weak points, bullwhip effect and worried stocks.

Strategies similar as dropship strategy, bracket of force, mongrel strategy, pre-purchase stocks and stock less policy that's coping stocks after client orders are being used to alleviate these problems and challenges.

Result and way for Retail

Retail force operation is the process of icing you carry wares that shoppers want, with neither too little nor too much on hand. By managing force, retailers meet client demand without running out of stock or carrying redundant force.

In practice, effective retail force operation results in lower costs and a better understanding of deals patterns. Retail force operation tools and styles give retailers further information with which to run their businesses, including

- Product locales
- Amounts of each product type
- Which stock sells well and which doesn't, by position and deals channel.
- Profit periphery by style, model, product line or item
- Ideal quantum of force to have in aft stock and storehouse
- How numerous products to reorder and how frequently
- When to discontinue a product
- How fluctuating seasons affect deals

The 10 introductory ways in retail force operation corroborate the goods you have, their volume, position and other specifics similar as expiration date. This stock data is useful for maximizing gains by understanding demand, costs and other variables.

You can integrate these procedures into a retail force operation system, which can be as simple as a paper tally or a spreadsheet but generally involves an electronic result.

The following is a breakdown of the way in retail force operation.

- Produce a Centralized Record of All Products
- List all the products which we carry in one place with these details
- Product name
- Stock- keeping unit (SKU)
- Brand
- Variables similar as size, retail price, product order, lot number, position and expiration date.
- Seller and seller SKU
- Wholesale bring
- Minimal reorder quantum
- Profitable order volume (EOQ)
- Case volume quantum
- Force on hand
- Reorder lead time

Add product description and images s to help staff identify products. This step is crucial if you vend by ecommerce. When you add new products, put them into your force record. Whenever information similar as a seller or non-commercial cost changes, modernize it. Establish programs for entering force, including who's responsible and when to do it. Having rich data helps unleash the power of a retail force operation system.

Identify Stock Location

Still, recording your force's position is straightforward. If you're a small business with just one store. Particulars are presumably moreover on display or in the storeroom. But retail chains with multiple spots and Omni channel merchandisers might have force in storages, distribution centres, conveyance, and storages and on store shelves. Within those destinations are more specific locales similar as section, shelf and rack. Lost and overlooked products represent missed deals and lost profit. Retail force operation practices help this. Use radio frequency identification (RFID) markers, bar canons and markers that contain order and department canons to completely or incompletely automate the mapping of your force.

Do Regular and Accurate Stock Counts

You need to count your force periodically to insure it's accurate. Take into account loss, damage, blights and returns to avoid crimes. A retail force operation system makes this process easier because you only need to double-check your data, rather than start from scrape. So, you can primarily concentrate on diversions. The frequency of counts depends to an extent on your business's complexity, scale and the type of force operation system you use. Nevertheless, experts recommend counting force once a quarter or formerly a time at absolute minimum. Some businesses count individual corridor of their stock daily. Several counting ways live, including physical counting and cycle counting.

A retail force operation system can integrate deals and force data. Use the product data to decide when and how important to reorder and when to offer elevations or abatements.

Produce a Purchasing Process

Schedule times to review data and place orders, so you don't get caught behind seasonal trends or threat stock outages. With an electronic system, you can set stock situations for individual products that spark cautions for reorder. These situations should include a buffer that allows deals to continue at normal levels. However, review which particulars are vended out or at reorder points, and add them to your purchase list. If you are using a homemade system. Prioritize purchases grounded on an item's profitability, feasibility and lead time. Also, produce a purchase order.

Establish a Process for Markdowns and Elevations

Product deals can fail to live up to prospects for several reasons, similar as a cooling trend, fustiness or seasonal factors. However, be chastened about blinking and moving slow merchandisers, which can induce cash and make room for further profitable products. If you offer markdowns. Also, produce a strategy ahead of time for elevations to insure that you have enough stock on hand to meet demand.

Produce a Stock Entering Procedure

During the reception process, we will enter goods directly into a force system. Without an established procedure, any supplier error or damage in conveyance can affect in problems like unanticipated stock outages, remittance to merchandisers and dead stock. Check each delivery against the purchase order to corroborate the contents match the order. Count cartons and pallets, attesting product type and figures and noting miscalculations, damage or faults. Follow up with merchandisers on any issues. Also, enter the new products into force counts and store the goods. Depending on your requirements, you might add price markers or bar canons to the stock. The simplest way of managing force is perpetual force operation, involves counting goods as soon as they arrive. Read the composition on perpetual force to learn further.

Conclusion

This exploration could be virtually used as a companion for the companies which fit the sectoral criteria and are facing the same or analogous challenges incorporated in the paper. This paper tried to give an overview of arising force operation ways for the benefit of operation scholars, force directors, store, administrators and judges. Twelve broad feasible force control approaches were linked to help meet the challenges encountered in the operations of storages and stores across diligence, and, in this respect, the present study is a veritable addition to analogous multi-option force result works. Also, the results of the analysis grounded on affiliated literature indicate that a proper force control system is nearly associated with low storehouse costs, cost-reduction and timely delivery of needful goods, products, accoutrements and services to guests and stakeholders, thereby enhancing sustained profitability, competitive capability, and enhanced request diversification prospects. In the present Terrain of plaint competition and profit pressure, the association doesn't have any other option than to manage coffers more effectively to survive and to stay financially round. The relinquishment of an applicable combination of some of these approaches can ameliorate service delivery in terms icing steady inflow of accoutrements while also minimizing the attendant carrying/running costs.

The discussion wasn't total; as associations come more competitive, further and further force operation practices will continue to come into the light. To that end, against the background of tensing global fiscal conditions, the following suggestions can be made for perfecting force operation practices in developing husbandry

i. Don't maintain too important force in your storehouse.

Make use of accurate soothsaying styles to help you efficiently land the goods in a timely manner before demand escalates.

ii. Make sure that you track your force particulars duly. Using bar canons and force shadowing software can help. Having the proper software with data backup modules can also grease effective manage force efficiently.

iii. Order products grounded on precedence. Fast-moving products should be ordered first rather than aimlessly storing products into your force, thereby making. Our association to dodge huge storehouse costs unnecessarily.

iv. In case of system failure we should always have a backup plans. In this digital age, you should coagulate your force data into remote systems (cloud computing) in case you witness accidental loss of force data. A good provisory plan can go a long way in making your force control a more effective system.

v. Process review Organizations should explore the prospects of renegotiating terms and lower prices with force merchandisers, but aware of maintaining product quality.

vi. Capacity- erecting Promotion of force operation culture should form part of the renewed juggernauts to plug leakages, loopholes and extinctions in public finance. Also, nonstop training and re-training of staff in order to enhance professionalism and productivity should continue to attract elderly operation attention, particularly with respects to cost effective motorized force control system.

Future Research

To round the present results and ameliorate results locally, empirical analysis with numerical exemplifications of real-world operation of force operation ways among public and private enterprises should continue to be an intriguing area of exploration, especially in the developing husbandry of Africa and Asia. Also, the coming exploration should seek to interpret on Winter's Method, Q, R, (nonstop review) policy, and Fault Tree Analysis, among other force operation approaches arising across the globe.

References

- [1] Kumar, R. (2011). Research Methodology (Sage South Asia Edition ed.). Sage publications India pvtltd.
- [2] Sharma, S. K. (2005). Planning e-Business For Competitive Advantage (2 ed.). ICAFI University Press.
- [3] Tampling, Damien, (2011), "Move quickly to capitalise on online retail". Paper as a part of Deloitte general information.
- [4] Exel, (2012), "E-Commerce and Multi-Channel Fulfillment". White Paper from Exel: North American company in SCM
- [5] Snyder, Rell, Hamdan, Basel (2009), "E-Commerce and Inventory Management". Proceedings of ASBBS Annual Conference. Vol. 16, No 1, Las Vegas, February.
- [6] <http://www.internetretailer.com>
- [7] <http://ecommerceinsiders.com/tackling-e-commerce-inventory-beast-5-critical-components-324/>
- [8] <http://www.marketingcharts.com/direct/retailers-see-importance-of-cross-channel-inventory-management-21429/>
- [9] <http://www.openforum.com/articles/easy-e-commerce-inventory-management>
- [10] Stephen Aro-Gordon, Jaydeep Anil Gupte (2016). Review of modern inventory management techniques.
- [11] Achebo, J. I., and Omoregie, M. J. (2013). Average monthly appraisal of inventory management policy using the probabilistic model. International Journal of Engineering Science & Technology, 5, (6), 1260- 1266.
- [12] Adamu, M. O., Budlender, N., and Idowu, G. A. (2014). A note on Just-in-Time scheduling on flow shop machines. Journal of the Nigerian Mathematical Society, 33, 321-331.
- [13] Adoga, I., and Valverde, R. (2014). An RFID based supply chain inventory management solution for the petroleum development industry: A case study for SHELL Nigeria. Journal of Theoretical & Applied Information Technology, 62, (1), 199-203.
- [14] Adebayo, O. I., Enikanselu, S. A., and Oyende, A. I. (2012). Fundamentals of Production Management. Lagos: Enykon Consult.
- [15] Akindipe, O. S. (2014). Inventory management: A tool for optimal use of resources and overall efficiency in manufacturing SMEs. Journal of Entrepreneurship and Innovation (JEMI), 10, (44), 93-113.
- [16] Ali, S. S., Madaan, J., Chan, F. T. S., and Kannan, S. (2013). Inventory management of perishable products: A time decay linked logistic approach. International Journal of Production Research, 51, (13), 3864-3879.
- [17] Chand, S (2015). Most important techniques of inventory control system.
- [18] <http://www.yourarticlelibrary.com/inventory-control/6-most-important-techniques-of-inventory-control-system/26159/> [13th April 2015].
- [19] Chalotra, V. (2013). Inventory management and small firms' growth: An analytical study in supply chain. Vision, 17, (3).213-222.
- [20] Cheng, C., Li, S., Chu, S., Yeh, C., and Simmons, R. J. (2013). Application of fault tree analysis to assess inventory risk: A practical case from aerospace manufacturing. International Journal of production Research, 51, (21), 6499-6514.
- [21] Chopra, A. (2015). Innovative state: How new technologies can transform government. New York: Atlantic Monthly Press.
- [22] Enikanselu, S. A. (2008). Introduction to business. Lagos: Enykon Consult.
- [23] Hatefi, S. M., Torabi, S. A., and Bagheri, P. (2014). Multi-criteria
- [24] Inventory ABC inventory classification with mixed quantitative and qualitative criteria. International Journal of Production Research, 52, (3), 776-786.
- [25] Global Journal of Business & Management, Volume 1 Issue 2 ISSN : 2455
- (2014). Encyclopædia Britannica. Encyclopædia Britannica Ultimate Online Resources

