

Enhancing Retail Supply Chain Efficiency: Integrating Financial Services, Payment Solutions, And AI-Driven Risk Compliance With Scalable And Secure Mlops Innovations For Intelligent System Optimization

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Retailers are the final link in a supply chain stretching from raw material suppliers through manufacturers and ultimately through distributors to the stores where customers make purchases. It is here, in the retail presence, that the entire supply chain ultimately finds its competitive focus and where the retail customer's demands for on-shelf product availability and rapid fulfillment across channels tie the entire supply chain network together. Retailers face a unique set of supply chain challenges. Whereas upstream suppliers and manufacturers typically view the flow and conversion of raw materials into finished goods as the end of their supply chain responsibilities, retailers must further transform merchandise into sales and satisfy customers' demand at the point of sale. Retailers require a distinct set of capabilities not required of their upstream counterparts. Great retailers survive and thrive through outstanding supply chain capabilities. In an industry where margins are premised on agility and rapid fire response to fashion and assortment mix, there is little room for error. In a recent study, evidence for this fragility is found. The penalty for disappointing the customer because of a single glitch in the supply chain may be far steeper than expected. The study finds that on average retailer's share prices fell 9 percent on the day a supply chain problem was disclosed.

Keywords: Supply chain strategy, supply chain management, big-box retailers, venture into value, operational efficiency, supply chain executives, supply chain challenges, capabilities of retail supply chain organization.

1. Introduction

Today's business owes its success to a competitive retail sector relying on efficient and sophisticated supply chain management systems. Globalization, deregulation and technological advancements have intensified the competition of this sector. A responsive and agile supply chain is crucial to the survival of a business' retail arm. With increasing customer expectation and declining consumer loyalty, retail outlets are looking to increase efficiency through ongoing technology acquisitions, and the adoption of new information and communication technologies.

In the face of stringent competition, only those retail organizations have survived and prospered which have adapted to these changes, and have seized the opportunities thrown up by them. To enhance efficiency and performance, retailers are relying on tailor-made IT/IS solutions in managing their supply chain operations. The introduction of IT/IS systems in the supply chain management process can reduce costs, wastage and delays throughout the pipeline, as well as improving cash management. Furthermore, trends like collaboration, co-creation and consumer engagement are dependent on Information Technology systems. This study is aimed at examining the retailing supply chain framework and in identifying how IT/IS systems can be applied to it. The same results are evidenced in a broad base of companies, including variations in growth, size, sectors, and extended geographies. This suggests that industry strategies may use a more thorough holistic reassessment of challenges and capabilities, as well as the metrology of the quality level itself.

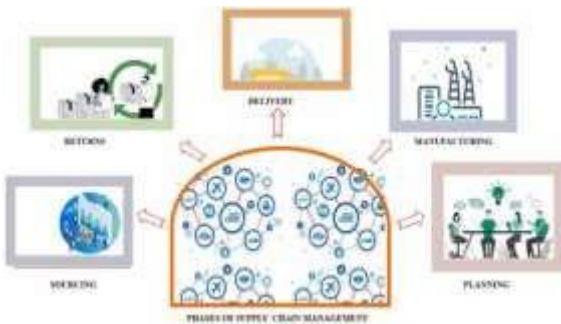


Fig 1: Enhancing supply chain management

1.1. Background and Significance Without question, the role of retail has changed dramatically in the last 30 years. The power shift to retail and recognition of retail as a critically important supply chain area has been despised as a critically important research hostility. A study of top supply chain executive perceptions reveals that, while underestimates and third party logistics providers see retailers playing the most important role in supply chain management (SCM), the lack of alignment between challenges and capabilities in this area are particularly pronounced states. This is not a circumstance that is uncommon or limited to companies or economic zones.

Equ 1: Housing Finance (Mortgage Transactions)

Let:

- L = Loan amount (principal)
 - r = Annual interest rate
 - T = Loan tenure (years)
 - P = Monthly payment
 - R = Risk factor (borrower credit risk)
- $$P = L \cdot \frac{r(1+r)^T}{(1+r)^T - 1}$$

2. The Importance of Supply Chain Efficiency in Retail

Retailers operate in a unique context characterized by a growing consumer demand for rapid and efficient fulfillment of a wide range of products. Retail supply chains are under strain to provision quality services with increasing responsiveness and product variety. Rising competition has led to an environment in which operational effectiveness must be underpinned by robust strategic supply chain management. Effectively managed retail supply chains need to operate within a network of global and extended supply chains. Competition prevalent in the industry, often on constrained margins, has produced a number of practices directed at gaining greater production control. An “open loop” of production facilitates a feed-back system that allows retailers to have production outsourced to a known producer when store level forecasting is reliable, and to have production in-house at the manufacturer when it is not. Turning exclusively to the manufacturer for apparel production can serve as an efficient “loose end” strategy for the retailer and represents a minimal cost alternative to their own product development. Innovatory consideration of these principles could help devise beneficial coordination strategies between retailers and suppliers, and guide retailers in assessing the potential rewards and pitfalls of private labeling efforts.

There frequently is an implicit assumption in the supply chain literature that the success of a product rests largely on the successful execution of a series of tasks necessary for the physical movement of goods to and from a retailer's store shelf. Success in the retail sector also involves other important factors. Using qualitative and quantitative research methods, primary retail supply chain functions and critical capabilities are identified. Manufacturing lead time postponement, production synchronization, the use of third party quality control agents, and mechanism for the rapid communication of sales data were found as major areas of focus. Success in retail supply chain management has the potential to significantly increase the overall supply chain surplus. Results of a model using data from the toy industry shows that

as much as \$138-198 million per year in potential savings may be realizable as a result of adopting some strategies noted above.



Fig 2: Supply Chain Efficiency in Retail

2.1. Research design In order to survive in today's market, which has become increasingly competitive, firms must design an appropriate supply chain model that can increase efficiency based on current conditions. This paper aims to design an efficient supply chain model in terms of the distribution channels under uncertain conditions. The study is a B2B case study conducted in the cement sector. The findings will assist cement manufacturer managers in creating competitive advantage through supply chain requirements. It will also be useful in establishing effective vertical coordination between the suppliers, producers and transporters in order to improve the efficiency of the whole cement sector.

The proposed study deals with the cement sector in Bekasi, which is one of the largest and fastest growing industries in Indonesia, and evaluates its supply chain management. The proposed study deals with a B2B case study in the cement sector, which is a basic industry that supports the construction business. The cement sector has the highest demand growth rate in Indonesia ranging from 10% to 12%. This sector was an oligopolistic market, forming few firms with a large respective market share. However, the market became more aggressive after the adjustment of the Asian economic crisis and the investment increase. Consequently, many small players joined the oligopolistic market with a relatively small initial capital, and the result diminished the access barrier. In the Bekasi area, it can be seen that cement producers are increasingly burdened with sharply increasing production capacity, which exceeds consumption capacity. This condition coupled with the intensive market rivalry between companies aims to study supply chain management in this sector.

The purpose of this study is to investigate the efficiency assessment of three layers of distribution channels (distributors, dealers and retailers) of a cement manufacturer in Bekasi, West Java, Indonesia. The survey question used to identify the supply chain process of the cement manufacturer in the study area is from the information gotten from participants, mostly related to the supply chain department in the cement firm. For the purpose of this research, the research design was based upon such areas as; Purchasing Department, Production Department, Stock Balance Department, Cost and Inventory Control Department, and Distribution Department. A flowchart included in this research includes functions, responsibilities, procedures, and documents of the company supply chain process. To ensure that purchasing orders are dealt with correctly a list of the company's integration supply chain processes were followed. The performance of the purchasing has a significant impact upon inventory, customer service, and cost. Most management is done through parameters, it was therefore decided to highlight six selected parameters of purchasing that are crucial for managing and shaping purchasing more efficiently. In order to land a critical evaluation of the

procurement system, a review was undertaken, which focused on the procurement/ purchasing and inventory aspects of cement supplier performance. Beyond its value as a result in their own right, this situation seemed emotionally to be the most fruitful area in which to look for theoretical generalization. Having reviewed existing literature on the subject, this research presented an overall research strategy. It was suggested that an attempt should be made to measure the supply chain process, and an investigation should be conducted to identify the methods managers could use to improve procurement performance.

3. Financial Services in Retail Supply Chains

The importance of the efficiency of supply chain management (SCM) in a retail sector cannot be overlooked. The demand and supply dynamics in retail are of different nature as compared to large capital projects. The role of Information Technology (IT) for SCM in retail becomes more significant not only to manage communication and track information and data among vendors, distributors, operations team and other external stakeholders but also to have updated electronic databases in respect of goods available etc. On another hand, retail stores are the end of the chain. It is essential to have the continuous information data of the status of the stock and sales at any time.

The shortcomings and pitfalls of the implementation of poor SCM strategies can have drastic and negative impacts on the organization value. Need high attention to avoid such failure. There are forms of inefficiency which are of different nature to those normally highlighted and have been overlooked up to now. The primary reason for this has been a lack of attention as retailers have focused on more immediate issues such as inventory management and store and shelf design. However, in recent years, and particularly with the increased cost of operating stores, just in-time management concepts, and the rise of larger store sizes, other instances of inefficiency have gradually come to light. It is easy to justify the need for closer attention to these areas. Some of the work to date, alongside new research findings, demonstrates the scale of inefficiency and has shown areas within SCM where significant cost savings and potential long-term advantage might lie.



Fig 3: Financial Services in Retail Supply Chains

3.1. Role of Financial Services Enterprises, as the main body of the supply chain, how to enhance the efficiency of the supply chain and the efficiency of the financial supply chain (FSC) with regard to commercial banks, thereby enhancing the competitiveness of the company? Although the retail industry is undergoing a transformation in the face of e-commerce, the commercial bank business model is also facing changes due to the retail banking industry joined by retail companies. In this novel ecosystem, it is essential to elucidate how resources are interactively allocated between commercial banks. On this basis, what strategies should banks adopt to benefit resources to expand the business scale and how to reduce the negative effects on the size of the channel resources of other banks.

Supply Chain Finance (SCF) is a novel financing channel that is regarded as a concomitant of globalization and M&A operations. While 94% of multinational companies have transacted through SCF, since 2005, SCF has been clearly included in supply chain management (SCM) and financial departments. As economic competition continues to intensify, companies have to focus on their competitive advantage, and the concept of outsourcing for non-core competences is more widely accepted. Financial institutions have become closer partners in this development strategy. In such a background, SCF becomes a hot topic. Furthermore, with the rise of e-commerce, this supply chain network has been expanded to all of the internet financial chains, with the consequence that the efficiency of this financial supply network (FSN) influences the competitiveness of commercial banks. On the other hand, since 2005 about 50% of the largest retail companies have set up banks and entered the financial field. The services not only include the financial services based on consumer behavior, but also the financial services between companies. This financial network is connected to one-to-one partners of commercial banks. In view of this, a FSN is formed.

3.2. Impact on Cash Flow Management In financial terms, retailing is a business of shifting money, covering costs before consumers pay rather recoup funds. Till 2000s, robust consumer spending and regularity industry expansion helped retailers cruise smoothly over cash flow shortfalls due to bloated inventory, high replenishment speed, disregard slight replenishment delays, and general selling price rise. Common retail strategy was to store a wide range of convoluted goods, since a vast product range covers a wide swath of prospective customers and nearly all purchases within the store, boosting likelihood of multiple item turnovers in long shopping time. This product-centric trade also utilizes consumer's search time to encourage added purchasing, aimed to defray high fixed cost, like significant building rent.

However, these old strategies collapse under the impact of online retail, a fundamental digital supply chain-type statistical pattern. Online retailing changes conventional retailer-supplier-consumer funnel into: multi-brand website-middlemen physical storage-ship delivery-harboring retailer. While regular retailers could gather worriedly until restroom products reach reordering point, online retailers must estimate customer totebag orders solely dependent on uncertain manifest past period data, then quickly refill to avoid depleting prepositioning portmanteau stock. Managing this increasing complexity model creates esoteric difficulties, product-oriented strategies, inventory management models, and cash flow measurement methods are unworkable. There is a new and immense need for scientific process study to match and survive as individuals and chains.

Equ 2: Insurance Solutions (Risk Pooling and Premium Calculations)

$$P = \frac{L + \text{Operating Costs}}{n} \cdot (1 + R)$$

Let:

- C = Coverage amount (total insured value)
- P = Premium paid
- L = Expected loss (probability of a claim * loss amount)
- R = Risk factor
- n = Number of policyholders

4. Payment Solutions: A Key Component

Mobile Point-Of-Sale (MPOS) is transformational technology that is set to bring a multitude of benefits to the retail landscape. MPOS brings simplicity, stripping back the complicated nature and high costs of traditional Point-Of-Sale. In its most basic terms, MPOS includes an app and a device, allowing payment chips to be inserted via a tablet or smartphone app. But MPOS will be combined with other investigative tech such as Bluetooth beacon or location based marketing, biometric security or big data analytics that can aggregate and allow retailers to build shopper transactional profiles. This enables service structure around the transaction, such as automated offers, targeted marketing, collaborative loyalty rewards, upselling or cross selling, all referenced as shoppers walk by or into stores in a language and medium adapted to their spending propensity.

The evolution of retail payment has been vertical. Retail schemes have traditionally partnered with card schemes and technology vendors to focus on the cost and control of card acceptance. Recent efforts of co-ordinated vertical collaboration have been towards payment security and the updating of retail schemes and merchant acceptance devices. The latest horizontal collaboration trend has been around mobile soft POS developments. In the US sub \$25 contactless transactions accounted for only 4% of total purchase volume in 2010. This underlines the fact that in Western countries at least, cards are still common in most cash environments. Lines are only going to get longer if all retailers do is build out contactless to replace cash. The all-IP enabled, electronic fast lanes of the future will scan three or four items in a basket in 150ms, process payments in 200ms whereby customers can walk in, scan items in-aisle, pay and walk out with all goods in under thirty seconds.



Fig 4: Payment Solutions:

4.1. Types of Payment Solutions Retailers are constantly looking for new and innovative ways to improve operations, drive flow, reduce costs and satisfy their customers. Fostering a strong relationship with vendors is critical to achieving all of those goals, and the efficiency of the supply chain has the potential to make or break it. This paper outlines the results of an analysis of four influential retailers used by a vendor in different parts of the world. Vendor payment forms, handling procedures, fulfilment strategies and credit terms vary greatly, but there are fundamental concepts that support partnership and make an efficient supply chain. This article is to maintain a well-informed and flexible approach to knowledge sharing to find common ground and to establish what is and is not reasonable.

To improve the efficiency of the supply chain with significant retailer vendors, it is essential to have an understanding of how the various components operate, as well as for a single retailer, to know that the supply chain of processing sites can vary greatly across context. There is a degree of standardization in electronic payment forms in countries such as Great Britain and in verticals where vendors specialize by decade, most of them choose to pay electronically. Retailers in other countries or verticals may have broader experiences: checks were a headache in the past, so most companies don't handle them any more; no one has been paid in cash for a long time. However, the rise of new fintech retailers platforms can reverse this trend, or at least lead to checks becoming more electronic, as low-fee escrow services operating in the cloud have the potential to revitalise usage of electronic checks.

Most of the chosen respondents on the vendor side were companies that worked with major retail companies known worldwide. Larger companies have the potential to use their influence to develop forms of payment that are a priori unacceptable to a smaller retailer company, and a better credit rating is more likely to be used to negotiate favourable terms of payment. These are important points that should be kept in mind when interpreting the results. If the findings do not seem to be applicable, it is possible to consider a larger number of companies, possibly to consider retailers with vendors of similar size.

4.2. Integration with Supply Chain Processes The management view presented in the preceding section helps describe available resources and current operations. This facilitated considering what logistics-related operations are possible. Retail network design was a broader

operational perspective, encompassing the products and services available at various outlets, the suppliers, distribution centers, and raw material suppliers supporting retail operations, and the underlying production/procurement system. This section describes a more focused, lower-level view of business operations, considering details of available resources, efficiency of operations, and decoupling points. From an operations perspective, retail consists of the products and services offered at various retail outlets, the distribution centers supporting the outlets, and the suppliers producing/procuring the products to be sold. Operations are described in terms of supply chain processes or storage and intended also involves the actual movement of goods between points of storage, and between storage and the points of selling. Flows in the network need to be improved, partly by realigning the control of the various flows, and further helped by integrating better with the supply chain processes. Specialized equipment such as tankers and pumps are to be considered part of the network as well as the resources available at the nodes to control the flows.

Improving the operation of the network is of significant interest, both in terms of the efficiency of the flows in isolation, and of the impact of the operation of the flows on the retail business as a whole. This efficiency perspective is concerned with the operational concerns of retailers and suppliers, such as waiting times and resource utilization, and less of the strategic structure of the underlying business. From the supply chain business perspective, this research is concerned with the decoupling points of the supply chain, and ensuring that the inventory mix is appropriate between raw material, work-in-progress, and finished goods, and the underlying production system. In terms of retail operations, this is concerned with the efficiency of the handling processes once products are in the network. This perspective involves defining various levels of details to represent the situation, consistent with the available data and the scale of retail operations. Performance goals of the operational processes are stated and possible changes to the structure of the network and the control of the resources are suggested to help achieve these goals.

5. AI-Driven Risk Compliance

Artificial Intelligence (AI) has the potential to revolutionize the assessment of supply chain risk by developing a robust positivity-invariance model for supply chain risk assessment. The latest risk compliance information is automatically collected and analyzed from hundreds of data sources. Novel optimization methods are proposed to solve complexity with the scalability challenge. Considering the risk levels of sub-suppliers, a risk-reward mechanism is designed to incentivize compliant behaviors. The role of supply chain risk (SCR) assessment within global supply chains (GSCs) is especially important in recent times, when various tariff and non-tariff trade measures have increased the risk of disruptions in the supply of goods. This is particularly evident for industries such as the network equipment manufacturing industry where the vast majority of components are sourced offshore and suppliers are embedded in complex GSCs. Risk can escalate or even cascade throughout the supply chain without comprehensive visibility of the end-to-end supply chain. Unlike asset protection risk which businesses can seek to reduce by reducing the exposure of their assets through insurance or other protective means, SCR is not straightforward to protect against and often the result of

unforeseen circumstances which can have a big impact. For these reasons, there is a strong demand for proactive identification and assessment of SCR in the network equipment manufacturing industry.



Fig 5: AI-Driven Risk Compliance

5.1. Understanding Risk Compliance The extraordinary growth of the retail sector in recent decades has pushed the firms to build an effective supply chain network in order to fulfill demand in the market. Not only the firms need to have a good product and market, but supplying the right product at the right time and to the right places can boost the company's performance. Additionally, they also have to rationalize cost, limit wastage and keep its product inventory rotating. Implementing IT into the supply chain can answer the difficulty of retailers. Combining Business Intelligence (BI) which is an interaction between the software and hardware system and incorporated into daily operation for creating valuable information, will boost the business to reach its goal. A waste just defined as whatever it is not useful, this is partially usable but quite expensive to maintain in a transportation city.

5.2. AI Applications in Risk Management Retail supply chain includes a large number of transactions. The merchants need to pay close attention to inventory management and risk prevention. They need to understand consumers' preferences and trends for stocking. Moreover, the merchants need to co-work with manufacturers, customs, warehousing, and logistic companies, etc. The merchants have to keep the quality of goods at a sustainable level during a long supply chain. Once the product quality is bad, the merchants need to recall the products, which will cause significant loss. Is there any way to reduce the cost by ensuring the quality of goods timely or predicting unsafe goods early? The fraudsters always commit fraud in a camouflage way, which is usually mixed with normal behaviors. For example, in the insurance field, a fraudster will claim compensation while there is a real accident, too. The fraudsters may not try to obtain the maximum profit or benefit, but they certainly want to minimize the possibility of being discovered by the inspection team. This makes it difficult and costly to discover the fraudsters in traditional ways that rely on many hand checks with certain rules. Better prevention models are necessary to assist the merchants to track the abnormality transactions indicating unsafe or low-quality goods.

(a) Exploratory Analysis. The distribution of the number of events per type is shown in Figure 1, along with additional summary statistics for the number of events per type and cases per type. This distribution shows that some types of events or their underlying risk factors are associated with many more case-specific events than others.

Equ 3: Retail Supply Networks (Supply Chain Optimization)

$$V = D \cdot \left(1 + \frac{S}{I}\right) \cdot \text{Efficiency Factor}$$

Let:

- V = Volume of transactions (units sold)
- C = Cost per transaction
- S = Supply chain delay (time taken to replenish stock)
- I = Inventory level
- D = Demand (forecasted sales)

6. MLOps Innovations for Supply Chain Optimization

Supply chain operations traditionally involve complex decision making problems. Given a set of inventory levels, an optimization engine selects the best way to manufacture and allocate products. Those products may contain parts that need to be produced first, forming a decomposition of the problem. Over dozens of years, the practice of supply chains has needfully addressed such decomposition. The first part is the decision on the demand: how many units of which products are expected at any time in the future. For example, retailers decide the product categories to display and their discounts. The middle part usually refers to the sourcing contracts. For the retailer example, it is the decision about delivery frequency and ink quantity. Finally, the latest part of the decomposition refers to configuring or optimizing the supply chain network. This is typically referred to as the routing problem after some unrolling of the time dimension. There is no strict causality between parts of the decomposition in the real world.

A decomposition should be able to provide actionable solutions. However, most of the tractable and asymptotically optimal decompositions fall into the same impunity clause: greedy optimization of one objective, possibly with a mix of hard and soft constraints regarding the other decision variables. The auto-validation power of the proposed brand-new flow is the main attempt to fill this gap. Although, entirely on its own, it falls short of a constructive guarantee, it includes many heuristics that provide a straightforward interpretation. Many of these heuristics are not in the library.



Fig : Explainable artificial intelligence in supply chain management

6.1. Defining MLOps There are a collection of certain objectives and crucial conditions that need to be satisfied to be deemed a fully efficient MLOps framework. MLOps prefers to create, reproduce, and operate Machine Learning (ML) models that make decisions on a sophisticated matter as a complex system. There should be a system collectively competent, constant, repeatable, verified, and observed generating a prediction in a manner to achieve corporate MLOps aims within an organization.

There are three categories of the MLOps development procedure: Model, Code, and Data. MLOps structures require artistic techniques automation to keep the development phase going. As a result, software design is faster, more available, and minimizes hazards. There is rapid model creation, high-quality ML models, and quick placement and production. Numerous ModelOps methods make it easy to monitor and manage a large number of models thanks to the extensibility of CICD. High-level team collaboration avoids getting into disputes and speeds up the transfer operation. In addition, patient handling of identifiability and reliability also helps reduce the risks associated with this. The whole training program has important parts in addition to prediction; testing is generally governed by a large number of models. Discriminating the other factors is the factor that just manages the prediction's performance in terms of a single model. The present work is more focused on first- and third-party data, less than non-labeled informed choice, and incorporates a specific process for making certain merchandise cities.

6.2. Benefits of MLOps in Retail With the rise of electronic commerce and the digital economy, shopping behavior has changed significantly. Online shopping has greatly undermined traditional shopping malls. For retailers, the keys to success lie in bringing a good online experience to customers and in efficiently managing the supply chain. The emergence of next-day delivery marks a new era of retail supply chain. But how to increase the efficiency of the retail supply chain? Traditional retail supply chain is not suitable for next-day delivery service. Sorting only a few items in each order at the largest warehouse and shipping them to customers by the fastest means of transport is the traditional strategy. This does minimize logistics cost, but is unreasonable when orders flood in. Indeed, it will lead to overloading of the fastest transportation, and failure to achieve the promised family. In addition, it costs a lot to build such a large warehouse. By contrast, an emerging practice known as the Isolated Warehouses Strategy is emerging. This strategy uses many isolated geographically-distributed warehouses to replace the traditional large central warehouse. Each isolated warehouse is responsible for delivering to customers within a certain range. It only transports the orders of its own area to the customers, which ensures the family promise and reduces transport cost. Besides, the items in each isolated warehouse are reorganized and arranged in a more dense way. In the light of this, the picking efficiency is maximized because workers do not have to walk a long distance, whereas such strategies as commercial retailers use the largest warehouse to sort the picked items based on their order and place them inopportunately, hence needlessly wasting many movements.

7. Conclusion

Supply chain management is acknowledged as the backbone for the retail industry to be compliant and efficient in a fast domain retail environment. The broad objectives are to make better purchase decisions, to design a proper distribution network, to design a proper transportation network and to keep adequate levels of inventory. The key is to reduce response time as the rate of change of parameters is high in a fast-domain retail environment. Retail supply chain environment comprises griddles considering independent and dependent parameters. Independent parameters are lead time, stock amount, service level, transportation policy fixed versus variable shipment size. Considering the griddles as independent parameters, dependent parameters are cost of merchandise flow along the supply chain, line up cost at each griddle and excess stock level at each griddle. Analogously, there are independent and dependent parameters associated with each griddle. Retailers do not have a keen role on defining the order quantity because of the wholesale price pattern fluctuation and large availability assortment in the market. Retailer's majority decision is to order more and when low stock problems arise.

The role of the IT environment for supply chain management to the retail industry gains more importance in order to control, track information and data flow. Current scenarios have certain requirements so that communication and data tracking are more important, among vendors, distributors, a number of operation teams and other external stakeholders. The fact is that communication and data tracking between related parties then get started for the implementation of business strategy. Failure to use efficient strategies causes the chain usage of the business information ineffective or less effective, so that requires data information management to produce ideal data flow, easy to maintain and useful. Retailers are not companies or manufacturers involved directly with suppliers to get raw material instead of those who are dependent on the jobber and wholesaler that get the merchandise or stock after processing and finishing from their own commitments. Retailer's primary concerns are to promote or sell the stock accordingly with minimal cost or merchandising and to keep adequate quantity and quality of the stock.

7.1. Future Trends On the 28th of November, traders, investors and retailers are focused on analyzing results from the busiest shopping event of the year, Black Friday, which took place on the 24th of November in certain countries. However, supply chain and logistics managers are focusing not only on one particular day, but on the shopping and festive season as a whole, as high profits are made in the later months of the year, especially during Christmas in many countries. With the continuous growth of e-commerce, consumers are getting used to a much faster delivery service. Additionally, consumers are embracing omni-channel retailing, which requires a good physical and information flow throughout the whole supply chain. Supply Chain (SC) managers are improving different technologies to better serve their retail networks with cost efficiency. Future new trends in supply chain technologies are described and their impact on the UK's biggest retailers is analyzed. Even though one company is British and the other is American, both are global retail giants and share similar characteristics/problems. Although there are plenty of security concerns on using drones for product delivery, some

regulations for flying drones in cities have been changed. This will focus on safety improvements by designing drones that are less likely to fail in flight. Both indoor and outdoor drone safety will be covered. One safety improvement is in attempts to design a quadrotor or a hexacopter, and aiming for it to continue flying in all failure scenarios. Past drone designs have shown that a failure in any vital part or in any vital wire results in a rapid crash.

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