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Inventory Management of Ecommerce Websites and Their Pestle Analysis

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ABSTRACT

This paper explains the inventory management strategies adopted by leading brands amazon, flipkart and tata. But before getting into the strategies adopted by each company mentioned above, the different types of strategies to manage inventories are explained in general. Finally, to understand the operations and functioning of each company, the pestel analysis for all three have been done.

Keywords: inventory management, strategies to manage inventory, pestel analysis.

I. INTRODUCTION

This paper has been divided into five parts. The first part covers the concept of inventory management and its significance. The second part of the paper explains how Amazon, Flipkart and Tata CliQ manage their inventory. The third part of the paper will contain the pestle analysis of each ecommerce website. Most businesses are utilizing information technology to increase their reach among clients and other related stakeholders. Nearly all businesses, whether they are sartorial or industry-wide, are following the trend. In addition, companies gain knowledge from their competitors to develop their IT-based best practices and tactically compete with one another. Like other consumer-focused internet businesses like Flipkart, Amazon, Myntra, Zomato, Ola, and so forth, the health sector is also innovating with the use of information technology to exploit its benefits explicitly or implicitly. (Siddhart Tiwari, 2019) In the same way, Netmeds and Medplus, two contemporary online-based businesses, are expanding their customer base and growing popularity.

II. CONCEPT OF INVENTORY MANAGEMENT

Monitoring the location, quantity, cost, and variety of the inventory that a company has on hand is all that inventory management in e-commerce entails. (Bose, 2006) The e-commerce component considers the requirements of an internet-based seller who would have to monitor inventory for a number of online retail platforms.

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III. E-COMMERCE INVENTORY MANAGEMENT STRATEGIES

1. DROPSHIPPING

First-time online merchants that need to expand their operations quickly but lack the funds for a warehouse or storage site commonly adopt this strategy. The disadvantage of dropshipping is that the business has no influence over the consumer interaction, even though it may seem simple. Once a buyer makes a purchase, the producer does the majority of the job, therefore they get to decide how the goods is preserved and distributed. A consumer would look at the business for explanations if they got a defective or wrong item.

2. JUST-IN-TIME INVENTORY

Companies that simply require to inventory purchases when they are bought by consumers use this method. Usually, the quantity of purchases fulfilled equals the quantity of inventory. A great illustration this method is businesses who offer periodic goods. They just make purchases for what they need to fulfil orders when the market for their goods rises. Companies can empty the stores when the period comes to an end without worrying about losing money from dead inventory.

3. SAFETY STOCK

Keeping additional goods on hand if requirement spikes unpredictably is a common inventory management technique employed by merchants. Contrary to the JIT approach, safety stock enables businesses to maintain steady production by accommodating unforeseen setbacks and market changes. (Gurpreet Singh, 2018) Businesses use safety stock to prepare for things like inaccurate forecasting, shifting customer requirements, and varying lead times for numerous raw materials. Businesses keep additional stocks on hand. When businesses hold safety stock, they can deal with these issues.

4. ABC ANALYSIS

By applying the ABC Analysis approach, inventory is divided into three categories. The profitability of each SKU is the basis for each division. Inventory falling under Category 1 might be expensive yet sparsely stocked. Inventory that is modest in price and volume may fall under category 2. Finally, category 3 can comprise stock that is both cheap and plentiful. This kind of inventory categorization makes it possible for the company to offer a wide range of products.

5. FIRST IN, FIRST OUT

Businesses who sell products with perishable limitations strongly prefer the first in, first out

method. First in, first out, refers to the practice of fulfilling orders for clients using the initial commodities that arrive at a storehouse. It applies to more than simply businesses that provide perishable items. If they wish to get dispose of the merchandise quickly, they can use this inventory management approach. Nevertheless, pay close attention to the pricing trends of business's products and raw materials. Because of the disparity among the cost of products acquired and the value of sales, price fluctuations can lead to overstated gains.

IV. AMAZON: INVENTORY MANAGEMNT

Several operative strategies are the foundation of the Amazon distribution strategy, which aims to increase productivity while lowering costs and accelerating the Amazon supply chain. (Kargar, 2002)

1. Efficient Warehouse Control

A minimal amount of stock must be kept on hand to meet demand according to the lean inventory management operations model. The key to this approach is anticipating and regulating the inventory levels because too much inventory that is frozen would negatively affect your company's profitability. Amazon fine-tunes its supply chain management through the use of advanced Automation tools in order to save costs. The Amazon AWS corporation uses cutting-edge computer-based Big Data processing techniques, including blockchain, cloud, and artificial intelligence applications.

2. Stock Controlled by a Supplier

Vendors replenish goods under the Vendor Managed Inventory (VMI) operating framework whenever it's appropriate to make another purchase. With this arrangement, third-party vendors have power over how many of their commodities are kept in stock by a retailer. They deliver their stock to Amazon's storage facilities, and Amazon handles order fulfilment.

3. Adopting digital warehousing and 3PL

Amazon strives to organize and improve every one of its activities due to the enormous number of warehouse activities. They enlist outside logistics to maintain this massive supply (3PL). (Connolly, 2022) Working with 3PL companies can help save money, labour, and storage space. Amazon digitalizes its storage facilities by heavily utilizing sensors and mobile barcode sensors to oversee shipping and fulfilment operations. Mobile devices make it possible to process orders, pick and pack items, and dispatch packages around-the-clock while also providing true inventory availability and level transparency. Mobile barcoding improves precision and accessibility. Reliable data is ensured throughout different geographic regions through real-

time interaction with the centralized, multi-layer database server, such as an ERP or WMS application. Additionally, a uniform supply chain is connected between several sites by live mobile stock monitoring.

V. CUTTING-EDGE INVENTORY OUTSOURCING

Amazon made the decision to subcontract its inventory management in early 2001, while knowing it would be extremely risky. The image Amazon had built for offering top-notch customer experience during the time when it maintained its own stock was one of its greatest strengths. In effort to increase earnings, the company wished to focus on its core competencies and subcontract inventory management. (Bastiege, 2019) Amazon was worried that this action might jeopardize the company's hard-won brand name. But it nonetheless chose to move forward with the plan to outsource its inventories. All the products on Amazon's website were not always in stock. It exclusively carried products that were well-liked and frequently bought. When a less well-known book was purchased, Amazon sent a request to the wholesaler, who subsequently sent the product to the business. The goods were unloaded inside the business before being transported to the appropriate clients. As a result, Amazon essentially served as a trans-shipment hub and made sure that the entire shipping procedure from the wholesaler to the buyer was carried out as effectively as possible.

VI. FLIPKART INVENTORY MANAGEMENT

The company uses the FIFO (First in First Out) approach for inventory management, whereby the oldest stock products are dispatched initially for any shipping requests to specific warehouses. (Verma, 2021) In the nation, Flipkart operates 7 significant warehouses. Delhi, Noida, Pune, Mumbai, Kolkata, Chennai, and Bangalore. Approximately 500 sites in Tier 1 and Tier 2 cities are served by its local distribution center. There are three primary components to Flipkart's inventory management system (WMS):

1. Internal Processing

- **A physical inward turn**

Deliveries of products from suppliers arrive here

- **Scanning and Efficiency Inspection**

Following first quality inspection, received products are scanned for admission into the storage IT network as input of products. According to the arrangement between Flipkart and the supplier, quality may occasionally be reviewed at the provider's end.

- **Pre-packaging of goods**

During this time, the primary packaging is completed. Depending on the goods and size, it changes. The goods will be packaged with any complimentary items that are included.

2. Storage Administration

- **Putting together a checklist**

When products are entered into the warehousing IT system, a program known as Put-list generation creates a label on the shelf and position in which the goods are required to go.

- **Order awaiting verification**

The item is transported to the ultimate packing section for outward processing once the process receives any data for any goods and examines for any incoming items.

- **Placing items physically on shelves**

The objects are positioned at their assigned racks in accordance with the put list, which also updates the rack position.

- **Closure of Put list**

The put list is shut after the goods are positioned on the rack. (Kara, 2016)

3. External Processing

- **Selection-list creation**

The algorithm then generates a Picklist in accordance with the order shipping time.

- **Select from the racks**

Next, the things are taken from the shelf and relocated in the direction of the packaging zone.

- **Last phase of packing**

After that, the products are put into cartons. The answer differs depending on the item. Electronics, for instance, are packaged distinctively than handbags and textbooks. The delivery center, which varies depending on the designation and date, is where the completed packages are then deposited.

Flipkart used the consignment approach of sourcing when it first began operating. The supplier's stock is kept by the retailer, who only purchases it directly from supplier when it is marketed to the final customer. This was the safest course of action to take because the route was fresh and untested. Eventually, this was stopped, and stock was bought to guarantee faster deliveries and service quality. Flipkart, however, altered its business strategy to the marketplace model in

April 2013 when FDI began to give preference to this model. With this marketplace approach, Flipkart no longer maintains its personal inventory. Instead, customers can interact directly with vendors, and Flipkart will handle the shipping.

Stock and warehousing management are currently handled by WS Retail, a side initiative of Flipkart. Due to their well-developed supply chain management and committed customer service workforce, Flipkart has managed to perform admirably when it comes to shipping times. Because of this, they add a lot of wiggle room to their current methods, which raises costs throughout the supply chain. Their continued prosperity will depend on how they respond to this problem. (Singh, 2015)

VII. TATA CLIQ: INVENTORY MANAGEMENT

Taking the 150-year-old multinational Tata Group, which produces everything from salt to technology. It has just made the transition into e - shopping with its e-commerce web TataCLiQ, after giving scalability and prices significant thought. There are some aspects that TataCLiQ has handled uniquely from other competitors. For starters, it debuted the 'phygital', or true omnichannel, service in India. Secondly, it currently only offers technology and clothing, however it is attempting to grow. But more crucially, if the business must be accepted, it promises to be on the verge of becoming successful.

As an integrator portal, TataCliQ manages its very own inventory and warehouse while working with independent vendors. To handle purchases from both stock model channels, TataCliQ delegated logistics services to EasyEcom. TataCLiQ was satisfied with EasyEcom's capacity to retrieve information from the vendor site for the following phases after conducting significant market analysis.

Most warehouse processes, including in-warding, stacking, and out-warding, were carried out mechanically using Excel prior to the introduction of EasyEcom. The vendor interface on Tata CliQ's backend was utilized to handle purchases and to create receipts and send out shipments. Since it led to divisions in procedures and interactions, the 60/40 split between human and automatic involvement was undesirable. As an outcome, the effectiveness of inventory declined. Utilizing inventory ageing, resupply accounts, and stock forecasting allowed the company and classification to organize the inventory all through peak purchases. It also allowed the company and categorization to combine the seller gateway to supervise orders and make inventory modifications through use of SAP assimilation. Tata CliQ has been capable of creating all ten storage facilities operational as well as continue living in under 6 months, speed up logistical challenges, and procedures more than 100 relatively similar orders for RTDs.

VIII. PESTLE ANALYSIS

(A) Amazon

P- Political Factor

The sustainability of the Amazon Company has been undermined by political factors. Countries each have their own laws and political philosophies; for instance, Amazon's expansion has been assisted by financially affluent nations like America and Australia. Other nations, like China, which has long been keen to assist domestic Chinese enterprises, have hindered Amazon's growth. The European Association evaluates how well Amazon uses data from merchants who trade on the Amazon Commercial Center. Amazon may face actual outcomes if the regulators hold it accountable. Political issues thus had a negative impact on Amazon's position, reputation, and output.

E- Economic Factor

Without a doubt, Amazon is closely related to the economic situation in each nation; for instance, there are nations where the average consumer's revenue is great, which encourages them to explore and purchase, in contrast to nations where it is poor. The Corona pandemic was beneficial for Amazon as well. the interest of customers in using the Amazon website to find what they require. The business 's development and operating costs will be impacted by taxes.

S- Social Factor

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T- Technological Factor

With its clients, Amazon has done an excellent job of utilizing technology, connectivity, safe transactions, and privacy practices. By preventing cybercrime, the company's administration protected property rights. To guarantee privacy and establish confidence for its consumers around the world, the business did not make any shortcuts when designing its website or hiring skilled personnel. Additionally, live chat was accessible every hour.

E- Environmental Factors

By decreasing any items that have a harmful impact on the environment, the company has

consistently managed to abide by environmental laws. Additionally, it makes every effort to prevent problems and fix errors if they do arise in relation to the infiltration of ecological conservation systems.

L- Legal Factor

Legal uniformity is also crucial for any organization, anywhere in the world. It is important that household names like Amazon follow the guideline consistently. Amazon has a different legal department to handle the legal issues and challenges. To remain competitive in the worldwide market, Amazon is concentrating on respecting each nation's legalization. Amazon's prosperity is a result of adhering to the law. The business has always valued honesty and avoided being opaque.

(B) Flipkart

P- Political

Political factors greatly affect the long-term profitability and viability of Flipkart. The corporation is more sensitive to developments in other nations' political contexts because of its worldwide influence. Expanding systematic vulnerabilities in a political context is essential for success in the dynamic global business environment. There are many diverse components that make up a nation's political climate. During the period of strategic planning, Flipkart.com should take the political considerations into account.

E- Economic

Since they have an effect on the nation's general economic climate, economic issues such as rising prices, saving rates, employment rates, and foreign exchange rates, among several others, are essential for Flipkart to comprehend. Flipkart.com can forecast the future development of an industry and an enterprise by having a thorough awareness of the economic environment. Flipkart.com must take into account the fundamental economic aspects in an effort to make informed selections.

S- Social

Social practices, values, and trends strongly impact organizational culture. Through a thorough PESTEL analysis, Flipkart can identify demographic patterns, social dynamics, consumers' purchase patterns, and common values to develop persuasive marketing messaging and meet business goals. The marketing team of Flipkart can utilize the information gathered from sociological and environmental research to address clientele and improve the attraction of goods to potential customers. When conducting macro-environmental research, Flipkart.com must

consider these sociological factors.

T- Technological Factor

The fourth element of the PESTEL research is technology. The significance of comprehending technical difficulties throughout the procedure of developing strategic decisions has increased as a consequence of the accelerated technological innovation and expansion occurring around the globe. By catching technology developments and reaping unique economic benefits like higher revenue, rapid development, and enhanced operational performance, Flipkart can benefit from a careful analysis of the technological environment. The technology elements could have an impact on Flipkart's profitability.

E- Environmental Factor

Environmental scanning has become a crucial component of the PESTEL research as environmental consciousness has grown and climatic circumstances have changed. Market forces affect how environmental standards, rules, and regulations change. These disparities need to be closely examined considering Flipkart's global existence in order to prevent negative outcomes. Whenever introducing a brand-new line of products or setting up a business, a thorough environmental study is crucial.

L - Legal Factor

The sixth element of a PESTEL study is "Legal." Before even completing in-depth study on the industry's legislative and administrative landscape, Flipkart.com is impossible to enter a new sector. To prevent facing serious legal issues, a detailed assessment of legal dangers is required. Cluelessness in this area could cost Flipkart its strategic advantage owing to intellectual property theft and damage the organization's reputation by breaking laws governing customer, labour, and environmental conservation. When stepping into a new market, Flipkart should take the legal factors into account.

(C) Pestel Analysis of Tata

P- Political Factors

Function of Civil Community, Non-Governmental Organizations, and Activist Organizations - Tata Ratan should establish connections with the country's thriving civil society group and look for opportunities for collaboration. Groups from the civil society have an impact on shaping the storyline of the entire society as well as on policymaking.

Internal Turmoil and the Potential for Civil Unrest - We do not believe that any internal terrorist activities or civil disorder pose any threats to Tata Ratan's company activities.

Policy shifts and the Shift of Government - Policy decisions are made consistently from one administration to the next. Second, all governments uphold the agreements reached by the preceding administrations.

Regional governments have a significant impact on how policies are developed and executed because they are typically in charge of carrying out regional laws in their jurisdictions, receiving most of the regulatory agencies' reports on various laws.

E- Economic Factors

Demand Transitions from the Goods to the Service Economy - Compared to the shares of the industrial, products, and agricultural sectors in the economy, the percentage of services is constantly rising.

Inflation Rate - The demand for Tata Ratan items may be impacted by the inflation rate. Higher inflation might force Tata Ratan to raise prices consistently in step with inflation, which might result in decreased levels of brand loyalty and ongoing efforts to control costs. Cost-based pricing may not be the best course of action in some circumstances.

Government Spending - The government of the nation is running deficit budgets, as was noted in the political factors. The effect for Tata Ratan will be that it may increase short-term product sales but subject Tata Ratan to medium-term concerns related to currency devaluation and foreign exchange.

S- Social Factors

Tata Ratan should perform an anthropological study to better understand people's attitudes regarding and preferences for recreational activities. One of the quickest expanding sectors among youngsters and baby boomers alike is the experience economy.

Attitude toward health and safety - The level of product quality and the pricing models of production processes are frequently indicators of how people feel about health and safety. Since Tata Ratan must adhere to strict health and safety standards, it may face competition in emerging markets from businesses with less expensive cost structures.

Immigration Types and Attitudes Toward Immigrants - Considering recent events like Brexit and the imprisonment of immigrants at the southern US border. Immigration attitudes have been under intense scrutiny. Tata Ratan ought to be capable of maneuvering in such a delicate setting.

T- Technological Factors

Level of Technology Acceptability in Society - Before releasing new products, Tata Ratan must evaluate the degree of innovation adoption in society. Companies frequently enter the market

without the necessary facilities to support the strategy focused on technology.

Probability of Digital Disruption - If a nation is home to many technology firms, there is a strong probability that technology will disrupt a variety of industries. Tata Ratan must determine if company can survive the rapid pace of technological upheaval in its sector.

Supply chain partners' empowerment - Tata Ratan needs to examine the ways in which technology may provide supply chain partners more leverage. This could aid Tata Ratan in increasing supply chain flexibility and visibility.

E- Environmental Factors

The Paris Climate Agreement and National Government Commitment to the Agreement - What are the nation's obligations under the Paris Climate Agreement, and how widely accepted is the agreement throughout the nation? For instance, there was uncertainty due to Trump's failure to uphold US agreements.

Focusing on and funding renewable technology What percentage of the budget is allocated to using renewable energy sources, and how Tata Ratan may use this investment to strengthen its position in the market.

Environmental Regulations and Standards at the National and Local Levels National and local environmental policies can frequently diverge. This will be useful to Tata Ratan as it makes a variety of decisions regarding its factory, its products, and its pricing policy.

L-Legal Factor

In order to make decisions that are fair and consistent, the judicial system and processes must be transparent. Tata Ratan will be more confident in its ability to make future plans if the procedure is systematic and open.

Obedience to Common Law: Does the nation uphold common law, which is binding on all parties, domestic and foreign? Tata Ratan cannot be confident in the judgements when there is unfairness in the legal procedure.

Length of Court Proceedings - Even if a nation has the best laws, they won't mean anything if they can't be applied promptly. Tata Ratan should conduct in-depth study into the length of time it typically takes for a court case to be resolved in the nation given the potential legal difficulties Tata Ratan may encounter.

IX. LIMITATIONS

Time Limits

All the researchers have their deadlines when they need to complete their studies. Sometimes, time constraints can affect your research negatively. If this happened, you need to acknowledge it and mention a need for future research to solve the main problem.

Conflicts on Biased Views and Personal Issues

Some researchers can have biased views because of their cultural background or personal views. Needless to say, it can affect the research. Apart from this, researchers with biased views can choose only those results and data that support their main arguments. If you want to avoid this problem, pay your attention to the problem statement and proper data gathering.

Limited Information Access

Some persons and organizations may be involved in your study, and occasionally you may experience access issues with them. You must therefore restructure and revise your study. You must inform your readers of the reason for the restriction on access.

X. CONCLUSION

Amazon, Flipkart, and Tata are major brands that operate in large scales not only in India but throughout the world. As Amazon's scale of operations increased, it outsourced its inventory management as internal management of the inventory was getting difficult. Flipkart has a well-planned systematic inventory management plan which allows it to operate through the functions efficiently. Tata CliQ is a comparatively new brand, but it manages its inventory on its own.

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