Return to Origin Fraud in the E-Commerce Industry – A Comprehensive Analysis

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Abstract: The rapid expansion of the e-commerce industry has given rise to a pressing issue known as Return to Origin (RTO) fraud. This fraudulent activity involves the intentional abuse and misuse of the Return to Origin process by dishonest individuals who are a part of this process during the reverse logistics to exploit e-commerce platforms. This research paper aims to provide a detailed analysis of RTO fraud in the e-commerce industry. It examines the various types of RTO fraud, investigates the underlying reasons for its occurrence, explores its impact on consumers and businesses, and suggests preventive measures to mitigate this problem. By shedding light on this issue, this paper aims to assist e-commerce platforms, consumers and the customers in effectively combating RTO fraud and creating a safer and more secure reverse logistics process.

Keywords: Reverse logistics, Supply chain, e-commerce, Return to Origin.

1. Introduction

A. Background

Product return is a commonly heard term in the online business world. When a product returns back to fulfilment centre or a mother hub because of a failed delivery or any other reasons like cancellations, such products are given the status of RTO (Return to Origin). Return to Origin is one of the biggest problems which the E-commerce industries are facing right now. Return to Origin is when a customer cancels the product during the transit. Return to Origin Frauds on the other hand is the frauds which happen during the transit of the product. The product does even reach the customers but still the fraud happens. The product may be a fake or an empty box when it reaches the FC it dispatched from.

Return to Origin frauds are very difficult to trace and track as there are many points through which a product reaches a customer. To identify where the fraud actually happens is a very tedious task. The fraud may happen in the Fulfilment centre, Mother Hub, delivery Hub, by 3PL parties or during the transit. To correctly identify the source of the fraud is what e-commerce companies are pondering upon and trying to find a solution to eliminate this problem as it bleeds their profit and increase the losses of the company.

A lot of companies like Amazon, Flipkart, Wal-Mart, and Alibaba are still trying to find a way to solve the problem of return to origin frauds. There is very little a company can do to reduce the Return to Origin, but a company can definitely solve

the problem of the frauds which are happening in Return to Origin. Companies like Amazon are now relying on cutting edge technologies and tracing and tracking technologies to minimize the frauds happening in return to Origin.

Return to Origin (RTO) has been one of the biggest challenges for E-commerce companies because it directly impacts profit and revenues of the company. India's E-commerce is booming but as E-commerce starts to grow, the possibility of Return to Origin increases due to which the frauds increase. That's why finding ways to reduce RTO becomes crucial. A growing organization has to incur the cost of logistics and order processing fees, however, what impacts them the most is when a product is returned back to warehouse because it adds additional costs and more cost if the product is considered as a fraud.

B. Objective

The objective of this research paper is to comprehensively analyze RTO fraud in the e-commerce industry.

The paper aims to investigate the following:
- various types of RTO fraud
- identify the contributing factors
- assess its impact on consumers and businesses
- propose preventive measures to address this issue
- The ultimate goal is to provide insights and recommendations that can help e-commerce platforms, law enforcement agencies, and consumers combat RTO fraud effectively.

C. Methodology

The methodology utilized for this paper, includes a combination of literature review, case studies, and analysis of industry data. A systematic review of academic articles, industry reports, and relevant publications was conducted to gather information on RTO fraud. Additionally, real-world examples and case studies were examined to illustrate the practical implications of RTO fraud. The findings and analysis were synthesized to provide a comprehensive understanding of the issue.

2. Overview of the E-commerce Industry

A. Growth and Significance

India has a lot of potential in the e-commerce sector because

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of the rising number of internet users and the favourable market circumstances. The market size of India's e-commerce sector, which is expanding exponentially, was over 22 billion US dollars in 2018. By 2030, it was predicted that this amount will amount to 350 billion US dollars.

The $14 billion Indian e-commerce economy, which began as a niche industry a few years ago, is growing at a rate of more than 25%, according to NASSCOM. With a market share of almost 70%, online travel is currently the largest segment and is projected to grow. On the strength of social media, which not only offers a mechanism for advertising but also for getting comments, developing brand image, and promoting new releases, e-commerce is expanding its reach to the general public. Social networking is another tool used by online businesses to keep tabs on new and returning customers. Social media has evolved into a tool for researching customer buying habits and lifestyles.

Consumer demand is being revived by e-commerce, which is also accelerating expansion in India's retail sector. A more value-added pricing approach is now the main focus. The most popular categories within the fastest expanding domestic segments are travel and lodging, airline and train tickets, and goods connected to leisure and entertainment. The "e-tail" market's cutting-edge business concepts draw more loyal customers. Even though the e-commerce sector has grown significantly, a sizable section of the population is still unaware of its advantages. For e-tailers, this provides a significant untapped market.

The success of e-commerce enterprises will be boosted by a strong supply chain and a well-established reverse logistics network in India. Businesses like e-commerce sites and others like them look for specific logistical services that might not be offered by conventional logistics providers. Commercial items are not typically delivered by the same courier services that deliver documents. As a result, e-commerce businesses are developing their own delivery network. One such instance is Flipkart's logistics, which the Indian term for e-commerce is "eKart." Conversely, large cargoes are delivered to retailers and distributors by logistics service providers like Express Logistics. They already work well with the dealers, which makes for efficient execution.

There is a lot of room for expansion in India's developing e-commerce market. However, expansion is not without its own set of difficulties, including those related to management, compliance, regulation, and operational issues, as well as shifting consumer preferences. The growing number of internet users and online shoppers suggests that e-commerce businesses should concentrate on customer experience and technology developments to spur growth. In addition, businesses should make sure that their websites load more quickly and create mobile applications that are simpler to use to improve user experience in order to offer a variety of services and expand their reach.

E-commerce is the fusion of practical shopping, aggressive pricing, deals, etc. A new paradigm that incorporates hyper-local space with cutting-edge transactional platforms, payment options, and a virtual brick-and-mortar retail experience is made possible by the shifting market dynamics. The old pillars of cost and quality will be replaced with a more enriching and delightful user experience that includes assistance in making the proper product choices, customisation, etc. Brick-and-mortar stores are being forced to restructure their operations in various regions due to the expansion of main internet retailers in India.

B. Return to Origin (RTO)

In the field of E-commerce, the term "Return to Origin or Product Return" is frequently used. A product is assigned the status of RTO when it is returned to an online retailer or the warehouse due to a botched delivery (Return to Origin). The online retailer must inspect the purchase's quality when a consumer puts an order, correctly package it, and send it to the designated destination. But what if different goods go back to its original location, i.e., the online retailer?

Return to Origin or Return to Origin frauds directly affects sales and profit, Return to Origin (RTO) has been one of the main issues for e-commerce businesses. By 2024, it is anticipated that India's expanding e-commerce will have grown by 84%. But, as e-commerce expands, the likelihood of increase in the Return to Origin is also expected which will in turn give rise to the frauds which are happening in Return to Origin.
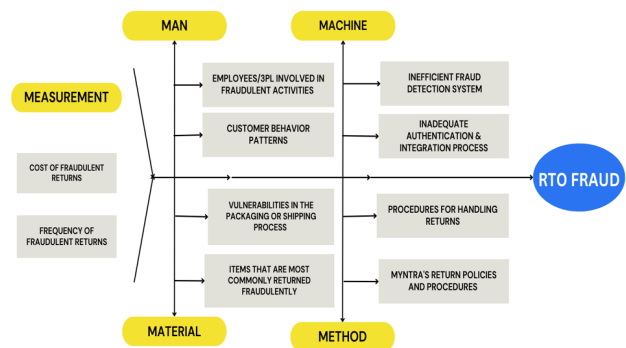
C. RTO Fraud Cause and Effect

Fig. 1.

1) Why-Why Analysis

WHY 1	Why did the customer cancel the product?	BECAUSE THEY WANTED TO OBTAIN A REFUND OR EXCHANGE FOR A DIFFERENT PRODUCT.
WHY 2	Why did the customer felt justified in cancelling the product?	BECAUSE THEY MAY HAVE BELIEVED THAT THE ORIGINAL PRODUCT WAS NOT SATISFACTORY, OR THEY MAY HAVE BEEN TRYING TO OBTAIN A HIGHER VALUE ITEM.
WHY 3	Why was the original product not received?	SOMEONE MAY HAVE KEPT THE ORIGINAL PRODUCT AND RETURNED A DIFFERENT ONE.
WHY 4	Why did the person who did fraud think they could get away with it?	BECAUSE THE RETURN PROCESS MAY HAVE TO BE MORE EFFICIENTLY MONITORED
WHY 5	Why was the return process not properly monitored?	IT IS A COMPLEX PROCESS AND STILL MANY COMPANIES ARE TRYING TO FIGURE OUT HOW TO SOLVE THE PROBLEM OF TRACKING THE PRODUCTS AT EACH HUB EFFICIENTLY.

Fig. 2.

3. Types of RTO Fraud

A. Deliberate Misuse of RTO

This section looks at situations where people purposefully abuse the RTO system to their own advantage. Fraudulent individuals may participate in "renting and returning" schemes when they order goods with the idea of using them just briefly before returning them for a full refund. They can profit from the

product's advantages thanks to this practise without having to pay for them.

B. Counterfeit Product Returns

The deceitful practise of dishonest people claiming to have received fake or counterfeit goods is known as counterfeit product returns. They take advantage of the RTO procedure to get refunds or replacements for these counterfeit goods. E-commerce platforms and legitimate vendors are at serious financial and reputational risk as a result of this kind of fraud.

C. False Damage Claims

Customers who falsely claim that a product was damaged or defective when it was delivered commit fraudulent fake damage claims. Even when the item was initially in pristine condition, they manipulate the RTO process to get refunds or replacements. These unauthorised returns are paid for by legal vendors and e-commerce platforms, who suffer financial losses as a result of this kind of fraud.

D. Wardrobing

Wardrobing is a dishonest practise in which buyers buy clothing or other articles of fashion with the goal of wearing them only once or for a little time before returning them. Due to the lax return rules used, returned goods may no longer be resalable as new, which raises expenses for merchants and e-commerce platforms.

E. Refund Fraud

Fraudulent refund requests or manipulation of the refund procedure are examples of refund fraud. Fraudsters may falsely claim to have never received the merchandise or to have returned it. They take advantage of flaws in the refund procedure to get money back without returning the item, costing legitimate merchants and e-commerce platforms money.

4. Factors Contributing to RTO Fraud

There are several reasons for increase in return to origin in e-commerce companies. The reasons are as following:

- *Invalid User:* One of the top reasons why Return to Origin happens is when an invalid user order something. An invalid user is someone who mistakenly adds any invalid delivery information due to which the product is not delivered.
- *Unnecessary Information:* A customer provides unnecessary information. For example, 29 MG Road (on weekdays), Avinash Towers (on weekends), Raipur, Chhattisgarh, India. Here, the customer has added two components to one address. One is 29 MG Road, and the second is Avinash Towers. Instead, the customer can have two different addresses and select one according to their availability & convenience.
- *Missing information:* A customer may provide delivery address but forgets to provide important details. The address may lack crucial details, such as area name, house or flat number, missing or incorrect pin code, etc. In such a case, locating and tracking the customer's address becomes challenging for the delivery partner.
- *Customer Intent:* It is crucial to know why customers decline or reject orders. An E-commerce company's success or failure solely depends on how customers react to their products and customers may reject/return orders at the doorstep for the following reasons: Customers might change their minds at the last minute; Customers may have ordered the same product from another site that delivered it faster and at a cheaper rate. They might accept the older product delivered by another brand and reject the brand-new product at the doorstep. Customers don't require the product anymore after ordering and don't cancel the order because they find it tedious or are unaware of the cancellation process. Customers also reject orders when they see torn or bad packaging which gives rise to thoughts like product damaged or of inferior quality, leading to RTO.
- *Customer not available at the Doorstep:* On the day of the delivery of a product, the customer is should be available to receive it. If not, someone else needs to be there to receive it. But in case of non-availability both physically or via text or call, the delivery man returns the product and marks it "customer not available," resulting in an RTO.

5. Impact of RTO Fraud

RTOs may drain a company in the following ways:

- *Cost of Forwards and Reverse Logistics:* One of the biggest ways in which Return to origin and the Return to origin frauds can bleed a business resource is by both forward and reverse logistics. Forward logistics are always a part of business but what becomes additional cost is the reverse logistics.
- *Blocked/Stuck Inventory:* Whenever a customer places an online order for a product, that item gets blocked. And from the moment a product is ordered to the time it comes back to the inventory, it stays blocked and due to this blocked inventory RTO is able to bleed a lot of e-commerce resources.
- *Operational Cost in Order Processing:* An online firm must pay running costs for every order that is placed, including fees for packing, quality assurance testing, hiring staff, etc.
- *Repackaging & Quality Checks:* When a Particular product is reordered, the online retailer must go through the entire order processing procedure once more, including repackaging the goods, performing quality checks, speaking with logistics, etc.
- *Greater Risk of Damage:* Because the lifespan of the returned item shortens as it sits in the inventory or warehouse for an extended period of time, there is a higher risk of damage.
- *Frauds:* The most common way a RTO can bleed the resources of any e-commerce company is by the return to origin frauds. These frauds happen in ways like

either an original product is replaced with a local item or dispatching an empty box to the FC. These are the most common ways of RTO Frauds. Generally, these frauds happen during the reverse logistics

6. Preventive Measures

Let us discuss all these recommendations on by one to understand in a much better way which would help reduce the RTO and RTO related Frauds.

A. Assigning Performance Metrics

One of the best ways e-commerce companies can reduce RTO and RTO frauds is assigning performance metrics to their delivery hub and 3PL partners.

These performance metrics can act as a measurement tool to analyze from which hub or 3PL party is the most frauds coming from. Some of the Performance metrics are as follows:

1) *Fulfillment Center (FC) metrics*
   - Product accuracy: These measures the percentage of accurate products shipped from the FC.
   - Inventory accuracy: This measures the percentage of correct inventory counts at the FC.
   - Receiving accuracy: This measures the percentage of accurate receiving of products at the FC.

2) *Transportation metrics*
   - On-time delivery: These measures the percentage of products delivered on-time to the destination.
   - Delivery accuracy: This measures the percentage of accurate delivery of products without any damage or loss.

3) *Delivery hub metrics*
   - Product accuracy: These measures the percentage of accurate products delivered to the customers.
   - Customer satisfaction: This measures the percentage of satisfied customers who received the products as per their expectations.

After all these metrics have been assigned, then comes the process of analysis. The following steps can be used to analyze and move to further process:
   - Implement checks and balances
   - Enhance data security
   - Conduct thorough background checks:
   - Implement training programs
   - Improve customer communication

B. Integration among all the Hubs-

An RTO fraud data tracker should be made so that real time of frauds and RTO can be tracked. A tracker would be a great way to integrate all the hubs with each other as it would help in updating real time data.
   - This tracker should be used by hub personnel during the reverse logistics process.
   - The tracker should be updated in the real time from all the hubs where the frauds are happening the most.
   - The company should have a team in their warehouse for just monitoring and analyzing this tracker.

C. Regular and Sudden Auditing
   - One of the most efficient ways of finding out the cause of the fraud is doing a regular or sudden auditing of the delivery hubs or the 3PL parties by the managers of the Return Processing center department. These auditing will help in knowing the source and the cause of the fraud.
   - This process has started in the company. First step is to analyze from which source the most number of frauds are actually happening and then the managers should set up this process of auditing in those hubs.
   - Accordingly, this auditing will help in giving reinforcements to the hubs or 3PL partners. These reinforcements can be positive for the ones who show fewer frauds or no frauds at all and negative for those where most frauds or RTO is coming from.

D. Packaging

One of the most important aspects of any e-commerce business is its packaging. Packaging affects a lot of factors including the reverse logistics process. It is a very interesting area for any researcher working in e-commerce industry is to make more efficient and sustainable packaging.

A lot of people have seen the shift of packaging from plastic to recycled paper making the whole process of packaging more efficient.

There are several ways packaging can help to reduce the return to origin frauds which are happening during the reverse logistics process. These ways are as follows:
   - Tamper evident packaging – Tamper evident packaging that is tamper-evident is made with unique closures that reveal if the container has been broken, opened, or unsealed. Broken closures warn you of possible product tampering if you sell packaged goods, allowing you to discard the product.
   - Power wraps – It's a low-price cover for packing products, tools, devices, household appliances, etc. It can use in industrial units and manufacturers for products such as wires and cables, glass, wire, hoses, valves, bags and luggage, furniture, office supplies, stationery, etc. Stretch protects of products against dust, impact and moisture completely. It's Available in various widths and thicknesses. It has transparent and colorful types.
   - Damage proof seals – Tamper-proof seals or labels make unwanted and unauthorized opening of laptops, suitcases, hotel safes, airplanes, cash registers, etc. immediately visible. These seals are cost effective and are used by many e-commerce companies.
   - Shock impact labels – Shock impact labels are tamperproof, mechanically activated devices. They turn bright red when an impact occurs over the g force threshold of the Shock impact label. Shock Impact Labels have an Omni directional impact response.

E. Blockchain
   - Every step of the reverse logistics process, from the

return of the product to its resale, can be tracked and verified.

- Smart contracts on the blockchain, e-commerce companies can automate the process of verifying product authenticity and condition.
- Blockchain is a decentralized technology, which means that there is no single point of control.
- Blockchain technology allows for the creation of a transparent, tamper-proof record of every transaction in the reverse logistics process.

7. Case Studies and Real-World Examples

A. Flipkart: Implementing Fraud Detection Algorithms

The case study of Flipkart highlights how the company utilizes advanced algorithms and data analytics to detect patterns and identify suspicious behaviour related to RTO fraud. By leveraging technology, Flipkart minimizes losses and enhances customer trust in their platform.

This case study of Flipkart is from the practical experience of me working there for almost 4 months. The warehouse which I was working in alone faced a loss of more than 10 lakh rupees just because of RTO fraud. A lot of solutions are being implemented from making sure to keep a track on those frauds and to do regular checks at the various hubs including the mother hub, delivery hub and various fulfilment centres.

A lot of reasons like difficulty in tracking the actual source of fraud to outsource the whole delivery process where keeping a check is quite difficult because of the policies of the companies. Flipkart is also trying to explore the world of blockchain and isn't shy to make some innovative decisions. These solutions if successful can prove very beneficial for the company in automating and tracking the whole process of return to origin frauds. In fact, they are even trying to mix technology into all of their operations.

B. Amazon: Addressing RTO Fraud Challenges

This case study examines how Amazon tackles RTO fraud challenges by implementing stringent verification processes, leveraging advanced technology solutions for product authentication, and investing in seller and buyer education. Amazon's approach provides valuable insights into effective strategies for combating RTO fraud. Many companies are still dealing with the issue of return to origin fraud and are taking several corrective measures to reduce the losses happening from those frauds.

This issue has taken a lot of companies resources which could have been used in their operations. Still a lot of companies have to take it into their fixed annual losses. One of the biggest e-commerce platforms in the world, Amazon, has put a number of tactics into place to effectively combat RTO fraud issues. First off, in order to confirm return requests,

Amazon has implemented rigorous verification procedures. They ensure that returns are legitimate and adhere to their return policy by validating the identities of clients and the justifications for them. Amazon has made investments in cutting-edge technology solutions for product identification in

order to combat fraudulent returns. For instance, they make use of distinctive identifiers like barcodes and serial numbers to confirm the legitimacy of returned goods. This lessens the likelihood of fraudulent operations where products are erroneously alleged to be imitations or counterfeits.

C. Alibaba: Cooperation with Local Authorities

This case study explores Alibaba's collaborative efforts with local authorities to combat RTO fraud. By actively cooperating with law enforcement agencies, Alibaba aims to enforce regulations, raise awareness about fraudulent activities, and deter individuals from engaging in RTO fraud. This partnership not only aids in the fight against RTO fraud but also strongly warns potential fraudsters about the repercussions of engaging in criminal activity. It reinforces the legal framework governing e-commerce transactions and helps to have a deterrent effect.

The collaboration between Alibaba and local authorities highlights the value of a multi-stakeholder strategy in preventing RTO fraud. E-commerce platforms can effectively handle this issue, safeguard consumer interests, and uphold the integrity of the online retail ecosystem by collaborating closely with law enforcement organisations.

Overall, these case studies demonstrate the proactive steps major e-commerce platforms have made to combat RTO fraud. These platforms are making significant progress in battling RTO fraud and developing a safer and more secure online shopping environment through strict verification procedures, cutting-edge technology solutions, education and training, fraud detection algorithms, and cooperation with law enforcement agencies.

8. Conclusion

A. Summary of Findings

Return to Origin is still a very big issue faced by many E-commerce companies. We have seen a big rise in the E-commerce industry and it will again raise in the coming years, due to this the problem of return to origin and return to origin frauds are also increasing at a rapid pace. This issue drains the company's resources to a great extent because of the time and money loss which happens and also the man power required to keep a track of this issue.

Many companies are still trying to find an efficient solution to this problem. Return to origin frauds becomes a complex issue because tracking the source of fraud becomes a tiring job. As a product has to go through several checkpoints, it becomes difficult to actually track the actual source of the fraud. One big challenge is that we cannot even directly blame the hubs or the 3PL parties who are involved in this process of return to origin.

Given the possible risks posed by RTO, it seems sense to consider ways to prevent RTOs from happening frequently in ecommerce. This terrifying query has a simpler solution than you would imagine. You only need to adhere to the proper procedures to resolve the issue. Here are a few strategies for decreasing site visits.

B. Recommendations for Future Research

We can determine the likelihood or chances of RTO by

identifying incorrect addresses, detecting fraudulent registration or signup, and risky or fraudulent users. The appropriate steps can be taken depending on how serious the risk is, such as:

- Turning off COD for an order
- Prohibiting a user from making a purchase
- Changing the return or cancellation policy for that user, such as imposing a fee in the event of a lot of RTOs
- Educating staff, confirming client IDs, and changing policies can all help combat return fraud, but businesses that adopt an AI-driven strategy are much more likely to stay one step ahead of fraudsters.
- To assist teams in foreseeing hazards, make sure their anti-fraud solutions can identify typical fraud scenarios and estimate future risks.
- By adding an AI layer to already-existing tools, this may be accomplished quickly and affordably because it does not necessitate a complete system overhaul.
- Use a solution that is highly configurable and allows you to create unique rule sets to prevent fraud types that pose a specific threat. Use a platform that optimizes warnings across different payment chains and enables businesses to react to shifting fraud risks in almost real-time.

C. Conclusion

There is a lot of room for expansion in India's developing e-commerce market. However, expansion is not without its own set of difficulties, including those related to management, compliance, regulation, and operational issues, as well as shifting consumer preferences.

One of the most underappreciated and unacknowledged issues in the sector has been reducing RTO in e-commerce stores. For many years, the issue has been slowing down sellers, but no one realised how serious it was.

Sellers are seeing a huge inflow of orders as e-commerce starts to spread widely over the entire nation. We may anticipate an exponential rise in the quantity of suppliers and purchasers as internet penetration expands and makes inroads into India.

The growing number of internet users and online shoppers suggests that e-commerce businesses should concentrate on customer experience and technology developments to spur growth. In addition, businesses should make sure that their websites load more quickly and create mobile applications that are simpler to use to improve user experience to offer a variety of services and expand their reach.

RTO is still one of the main problems for e-commerce businesses. It accounts for roughly 30% of orders and costs INR 100–200 each transaction to transport, package, use petrol, and process each RTO.

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