Understanding Challenges in Ocean Freight Operation: Evidence from Smart Shipping Services

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ABSTRACT

Air freight is crucial to current global trade. It allows fast, secure, and reliable cross-border movement of high-value, time-sensitive, and perishable goods. This article reviews air freight services and their operational, financial, and regulatory issues. The study examines speed, safety, paperwork, cargo capacity, cost, and technology innovation using primary survey data from 44 logistics professionals at Greenwich Meridian Logistics (India) Pvt. Ltd. and secondary sources and industry reports. 95.5% of respondents believe air freight is essential to modern logistics, but high and unpredictable freight costs, capacity shortages during peak seasons, cumbersome customs procedures, weather delays, and increased environmental sustainability are still major obstacles. It offers practical solutions and explores air freight's future in a rapidly changing global logistics world.

1. Introduction

The term "logistics" finds its roots in the Greek *logos*, signifying calculation and reason. Historically, it evolved from military requirements to ensure the supply of troops in forward positions. In the modern business context, logistics is the strategic management of the flow and storage of materials and information from origin to consumption to meet customer requirements.

Freight forwarders act as intermediaries or "travel agents" for cargo, organizing shipments for individuals or corporations by contracting with various carriers across sea, air, and land. Despite their expertise in documentation and international regulations, these entities face increasing pressure from globalized supply chains and shifting carrier priorities.

2. Role and Functions of Logistics

Logistics management aims to achieve the desired level of customer service at the lowest possible cost.

2.1 Key Objectives

- **Rapid Response:** Satisfying customer requirements in a timely manner through IT-enabled operations.
- **Cost Reduction:** Minimizing total distribution costs, including transportation and warehousing.
- **Quality Improvement:** Maintaining high standards through Total Quality Management (TQM) to prevent defective service.
- **Inventory Reduction:** Keeping stock levels at a minimum to free up capital.

2.2 Core Functions

Logistics delivers value through three main phases:

1. **Inbound Logistics:** Operations preceding manufacturing, such as moving raw materials from suppliers.
2. **Process Logistics:** Internal movement and storage within manufacturing premises.
3. **Outbound Logistics:** Post-production warehousing and distribution of finished goods

Era	Key Development	Impact on Air Freight
World War II	Military air logistics scaled massively	Demonstrated air transport's cargo potential
1950s–1960s	Wide-body jets (e.g. Boeing 747) introduced	Large-scale international cargo became viable
1970s–1980s	FedEx overnight delivery; dedicated cargo airlines	Express logistics revolution; hub-and-spoke models
1990s–2000s	Globalisation; digital documentation EDI systems	Faster customs, real-time tracking, global networks
2010s–Present	E-commerce boom; drone delivery; AI logistics	Surging demand; automation; sustainability pressures

3. Freight Forwarding Operations

Freight forwarders provide comprehensive door-to-door solutions, handling both direct and consolidated shipments.

3.1 Types of Forwarders

- **IATA Agents:** Certified by the International Air Transport Association, they represent shippers to airlines and handle documentation like air waybills.
- **NVOCC:** Non-Vessel Operating Common Carriers act as ocean freight consolidators, publishing their own rates and issuing House Bills of Lading.

3.2 Operational Challenges

The industry faces significant hurdles, such as:

- **Carrier Market Dominance:** Difficulty in negotiating favorable terms due to the superior bargaining power of carriers.
- **Technological Gaps:** Challenges in adapting to diverse carrier platforms for booking and tracking.
- **Customs Complexity:** Navigating varied international regulations and documentation requirements.

Metric	Current Value
Projected Market Size (2029)	USD 201.57 billion
CAGR (2024–2029)	5.92%
Total Companies	7,400+
Total Employees	627,600+
Patents Filed	690+
Funding Rounds	640+ (avg. USD 56.7M each)
Annual Search Growth	6.98%
News Articles (last year)	3,500+

4. Research Methodology

This study utilizes **Descriptive Research** to analyze the current state of freight forwarding.

- **Sampling:** A convenient sample of employees from Smart Shipping Services in Chennai was selected.
- **Data Collection:** Primary data was gathered via a structured questionnaire; secondary data was sourced from journals and industry books.
- **Statistical Tools:** SPSS and Microsoft Excel were used for Percentage Analysis, Chi-square Analysis, Correlation, and Weighted Average methods.

5. Data Interpretation and Analysis

Analysis of 43 respondents at Smart Shipping Services revealed the following demographic and operational insights:

5.1 Demographic Profile

Category	Metric	Percentag
Age	20-30 years	70%
Gender	Male	70%
Educatio	Post-Gradua	56%
Experien	0-5 years	64%

5.2 Key Operational Insights

- **Technology Adaptation:** 45% of respondents agree that adapting to carrier technological platforms is a challenge.
- **Contract Negotiation:** 50% agree that carrier market dominance makes negotiating favorable terms difficult.
- **Carrier Priorities:** A weighted average score of **3.8** indicates general agreement that carriers prioritize direct relationships with shippers over forwarder partnerships.
- **Customs Efficiency:** 33% of respondents find the current customs clearance process efficient, while 14% disagree.

5.3 Statistical Tests

- **Correlation:** The Pearson correlation coefficient (r) between carrier market dominance and prioritization of direct relationships was **0**, indicating no linear correlation between these specific variables in this dataset.

- **Chi-Square:** Tests were conducted to evaluate associations between variables such as tracking accuracy and fee transparency, generally supporting the null hypothesis in certain operational categories.

6. Findings and Recommendations

6.1 Findings

- The majority of the workforce is young (under 30) and highly educated (PG level).
- Unexpected surcharges and difficulties in obtaining timely tracking information from carriers remain primary pain points.
- Communication between forwarders and customers is often seen as a neutral area, suggesting room for improvement.

6.2 Suggestions

1. **Digital Transformation:** Update documentation processes to be fully computerized to reduce errors and improve speed.
2. **Rate Modification:** Modify freight rates effectively to attract more business and increase customer satisfaction.
3. **Infrastructure Support:** Enhance 24/7 customer care and provide full assurance against theft and damage to build brand image.
4. **Strategic Partnerships:** Form alliances with local logistics providers to improve last-mile delivery and operational efficiency.

7. Conclusion

The freight forwarding sector is a vital part of the global economy, yet it remains vulnerable to external factors beyond its direct control, such as carrier behavior and infrastructure bottlenecks. Forwarders like **Smart Shipping Services** must expand their global networks and increase the accuracy of their commitments to remain competitive in a "global village". Embracing technological tools and emphasizing logistical customer service will be the key differentiates for success in the evolving supply chain landscape.

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