

THE SUPPLY CHAIN STREET

ISSUE-06 | AUGUST 2023

**TSCS
TALK**

WITH

**MR. EJAZUR
RAHMAN**

AN ANALYSIS OF
**SUPPLY CHAIN
PREPAREDNESS**

**LOGISTICS
FOR A
SUSTAINABLE
TOMORROW**

LPG
INDUSTRY OF
BANGLADESH

“Pop culture is not about depth. It's about marketing, supply and demand, consumerism.”

- Trevor Dunn



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Md. Nabeeul Islam Khan
Supply Chain Director
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It is my privilege to inform you all that The Supply Chain Street is going to publish its 6th issue. This issue addressed the critical importance of a robust and resilient supply chain network as it is the backbone that supports businesses of all sizes, from small enterprises to multinational corporations. Therefore, it is imperative that we work together to build a supply chain ecosystem that is agile, sustainable, and capable of withstanding disruptions. I hope you all will like this issue and best wishes to the whole team of The Supply Chain Street.

Habibur Rahman
Director
Production and Supply, Syngenta Bangladesh

I am pleased to inform you about the 6th issue of "The Supply Chain Street" magazine. As a member of the advisory board, I believe it is essential to give you some insight into this issue. We feature articles authored by industry experts, who share their perspectives on the future of supply chain management. The past couple of years have seen unprecedented disruptions in global supply chains, ranging from natural disasters to pandemics. It is imperative for organizations to prioritize building resilient supply chains. I am confident that the contents of this issue will provide you with valuable knowledge, strategic insights, and practical solutions to stay at the forefront of supply chain excellence.



Wahid Anwar
General Manager
Supply Chain, r-pac Bangladesh

In today's globalized and interconnected world, supply chains play a critical role in enabling organizations to achieve operational excellence, meet customer demands, and gain a competitive edge. Geopolitical dynamics and trade policies continue to impact global supply chains. It is essential for supply chain professionals to stay informed about changing regulations, trade agreements, and market trends. The Supply Chain Street magazine always keeps professionals informed about the latest news, trends, developments and innovations in the field.

In the 6th Issue of The Supply Chain Street, team members remain committed to providing valuable insights and guidance to support your supply chain journey. Happy reading!



Mohammad Ashraf Islam Khan

*Former Head of Supply Chain Advisory Services
KPMG Bangladesh*

As the President of The Supply Chain Street (TSCS), I would like to emphasize the critical challenges and opportunities faced by supply chains in today's interconnected world. In order to remain competitive on a global scale, it is imperative that we adapt and innovate continuously, considering factors such as escalating customer expectations and the rapid pace of technological advancements.

The impact of unforeseen events like natural disasters, global health crises, war, and trade disruptions has been profound, highlighting the urgent need for proactive risk management, contingency planning, and collaboration among all stakeholders. I firmly believe that collaboration and innovation are the cornerstones of success in this ever-changing landscape. Governments, businesses, and stakeholders must come together to construct more resilient, sustainable, and agile supply chains.

At TSCS, we understand the importance of addressing these ongoing issues, and as such, we frequently organize open discussion programs with supply chain leaders and professionals. Additionally, we collaborate with esteemed universities such as BUET and ZNRF University to conduct training programs aimed at equipping individuals with the necessary skills and knowledge. Our aim is to foster international collaboration and cooperation as we navigate the intricacies of an increasingly interconnected global supply chain landscape.

I would like to extend my sincere appreciation for the invaluable work that the entire team at The Supply Chain Street has put into the 6th issue. We are confident that you will find this edition informative and inspiring as we delve into the topics of resilience, supply chain diversification, and the utilization of technology to enhance visibility, traceability, and response capabilities.

Thank you for your continued support, and we wish you an enlightening reading experience.

Best regards.



Mohammad Mamun Chowdhury

Head of Supply Chain Management
Rahimafrooz Storage Power Business (RSPB)

Dear readers,

Welcome to the latest edition (6th edition) of The Supply Chain Street! As we dive into the intricate world of supply chain management, we explore the evolving landscape and the innovative solutions that are shaping the industry. Our goal is to provide you with thought-provoking insights, industry trends, and practical strategies to help you navigate the complexities of modern supply chains.

In the previous issue we focused on business analytics, supply chain innovation and supply chain finance. Last year has been a testament to the resilience and adaptability of supply chain professionals worldwide.

In this issue, we aim to shed light on some of the most pressing issues facing the supply chain community and provide insights into emerging trends and best practices that can help organizations thrive in this new era.

Our featured articles offer a deep dive into key areas of interest. We explore the transformative potential of emerging technologies, such as supplier contribution, strategic procurement, etc. and how they are revolutionizing supply chain operations. We also delve into the importance of data analytics and real-time visibility in optimizing supply chain performance and enhancing decision-making processes. Our experts discuss sustainable sourcing, green logistics, and circular economy initiatives, providing insights into how organizations can align their supply chains with environmental stewardship while driving profitability.

We would like to express our sincere appreciation to our contributors, whose knowledge and expertise have enriched this issue. Their dedication to the field of supply chain management is evident in the quality of their insights and the innovative approaches they present.

We would like to thank you, our readers, for your continued support and engagement. Your feedback and contributions are invaluable to us. We encourage you to explore our online platforms, engage in discussions, and share your own experiences and expertise.

Wishing you an insightful reading experience.

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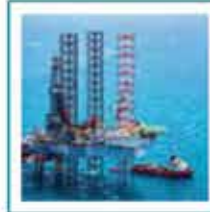
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STRENGTHENING THE RESILIENCE OF BANGLADESHI COMPANIES: AN ANALYSIS OF SUPPLY CHAIN PREPAREDNESS



Due to the disruptions brought on by the COVID-19 pandemic, the Ukraine-Russian War, and the current state of the world economy, supply chain resilience has become increasingly crucial for businesses globally. The ability of a supply chain to rapidly and effectively recover from any disruption or unforeseen catastrophe is referred to as supply chain resilience. Being flexible and adaptive, a resilient supply chain can respond to unforeseen changes without seriously impeding the flow of goods and services.

Bangladesh is a significant participant in the global supply chain system due to its flourishing apparel industry. However, the nation has been susceptible to disruptions because of things like political unrest, natural disasters, and now the epidemic, the Ukraine-Russia War, and the current state of the world's economy. The COVID-19 pandemic, the Ukraine-Russian War, and the current state of the world economy have all had a significant negative impact on Bangladesh's textile sector, which generates around 80% of the nation's exports. The reduction in orders and factory closures are the result of a sharp decline in the demand for clothing worldwide. The epidemic has shed light on the necessity for Bangladeshi businesses to strengthen supply chain resilience to lessen the effects of potential interruptions.

FACTORS AFFECTING SUPPLY CHAIN RESILIENCE:

While some Bangladeshi businesses have taken action to strengthen their supply chain resilience, others have lagged. In Bangladesh, only 16% of garment factories have a business continuity plan in place, and 51% of factories have no intentions to create one, according to a recent ILO survey.

Several factors can affect the supply chain resilience of Bangladeshi companies. These include:

■ Infrastructure:

Inadequate infrastructure in Bangladesh continues to cause delays and disruptions in the supply chain. The country's ports, highways, and railroads are often congested, leading to shipment delays and increased transportation costs.

According to the World Bank, Bangladesh's infrastructure quality ranks 114th out of 190 countries surveyed, and the country faces a significant infrastructure financing gap. While the government has made efforts to improve infrastructure in recent years, such as the development of the Padma Bridge and the expansion of the Chittagong Port, there is still a long way to go to meet the growing demand for infrastructure in the country.

■ Supply Chain Transparency:

Lack of supply chain transparency among many Bangladeshi businesses makes it challenging to spot possible hazards and take appropriate action. Implementing sustainability measures, such as guaranteeing moral working conditions and minimizing environmental consequences, can be difficult when there is a lack of transparency.



■ Financial Resources:

The lack of financial resources for investing in supply chain resilience measures remains a major challenge for businesses in Bangladesh, particularly for small and medium-sized enterprises (SMEs). According to a recent study by the International Finance Corporation (IFC), access to finance remains a significant barrier for SMEs in Bangladesh, with only 15% of firms having access to formal credit. Additionally, the COVID-19 pandemic has further exacerbated the financial constraints faced by businesses in the country, particularly SMEs. The government of Bangladesh has taken several steps to address the issue of access to finance for SMEs, including launching various loan programs and establishing a credit guarantee scheme.

However, these initiatives have had limited impact due to challenges such as bureaucratic hurdles and limited outreach to the most vulnerable and marginalized segments of the population. To build supply chain resilience, businesses in Bangladesh need access to financial resources to invest in measures such as building redundancies, diversifying suppliers, and implementing digital technologies. Therefore, there is a need for further efforts to improve access to finance for SMEs and to address the underlying challenges that hinder their access to formal credit.

■ **Human Resources:**

The resilience of Bangladeshi businesses may also be impacted by a lack of qualified human resources in supply chain management. To create a strong and flexible supply chain system, the country must invest in training its employees.

■ **Political Instability:**

Bangladesh has a history of political instability, which can lead to sudden changes in government policies, protests, and strikes. These disruptions can cause delays and damage to supply chains, particularly for companies that rely heavily on imported goods or that export to unstable regions.

■ **Natural Disasters:**

Bangladesh is prone to natural disasters such as floods, cyclones, and earthquakes. These can cause extensive damage to infrastructure, disrupt transportation and communication, and impact the supply chain's efficiency and effectiveness.

■ **Lack of Technology Adoption:**

Despite the growing importance of digital technologies in supply chain management, many companies in Bangladesh still rely on traditional methods, such as paper-based tracking and manual inventory management. This can result in errors, inefficiencies, and delays, which can negatively impact the overall resilience of the supply chain.

To address this challenge, several companies in Bangladesh have begun to adopt digital technologies to improve their supply chain resilience. For example, PRAN-RFL Group, one of the largest conglomerates in Bangladesh, has implemented an RFID-based inventory management system across its operations. The system enables real-time tracking of inventory levels and ensures that supplies are replenished on time, reducing the risk of stockouts and delays.

Similarly, RFL Electronics, a subsidiary of PRAN-RFL Group, has introduced a blockchain-based supply chain management system to enhance transparency and traceability across its supply chain. The system enables the company to track products from the point of origin to the point of consumption, reducing the risk of counterfeiting and improving overall supply chain resilience.

Another example is Grameenphone, the largest mobile network operator in Bangladesh, which has implemented an AI-powered supply chain optimization system. The system uses machine learning algorithms to forecast demand, optimize inventory levels, and improve delivery times, leading to a more resilient and efficient supply chain.

These examples demonstrate that adopting digital technologies can help improve supply chain resilience and enhance competitiveness for businesses in Bangladesh. However, there is a need for greater awareness and investment in such technologies, particularly among small and medium-sized enterprises, to fully realize the potential benefits of digitalization in supply chain management.

■ **Lack of Collaboration:**

Collaboration among different stakeholders in the supply chain, including suppliers, manufacturers, distributors, and retailers, is crucial for building resilience. However, in Bangladesh, there is often a lack of trust and cooperation among these parties, which can lead to delays, disruptions, and even supply chain breakdowns.

IMPROVING SUPPLY CHAIN RESILIENCE IN BANGLADESH:

To improve the supply chain resilience of Bangladeshi companies, several measures can be taken. These include:

1) Enhancing Supply Chain Transparency:

To find and mitigate potential risks, businesses should make their supply networks more transparent. This can be accomplished by putting in place traceability mechanisms, carrying out routine audits, and interacting with stakeholders and suppliers.

2) Developing Infrastructure:

To minimize snags and hiccups in the supply chain, the government must invest in building the nation's infrastructure. Reducing transportation costs and increasing the effectiveness of the supply chain system are two benefits of improving port infrastructure, roads, and railways.

3) Providing Financial Support:

To encourage SMEs to make investments in supply chain resilience measures, the government and other stakeholders should offer them financial support. This can involve offering low-interest loans and subsidies to assist infrastructure development and technology adoption.

4) Developing Human Resources:

The country must invest in the training of its employees in supply chain management. Programs for training and education as well as cooperation between enterprises, academic institutions, and the government can accomplish this.

5) Developing Agility, Flexibility, And Legality:

Agility, flexibility, and legality are key factors that impact supply chain resilience.



TECHNOLOGIES OF SUPPLY CHAIN TRANSPARENCY

A supply chain's agility is its capacity to quickly adjust to changes in demand, supply, or market circumstances. A responsive and flexible supply chain strategy, the use of technology and data analytics for forecasting and planning, and the implementation of backup plans can all help achieve this. Flexibility is the capacity of a supply chain to alter in response to modifications made to its systems, configurations, and processes. This can be done through partnering with suppliers and partners, investing in technology and automation, and establishing adaptable and flexible supply chain procedures.

The term "legality" describes how well a supply chain complies with pertinent laws and rules, such as import/export legislation, labor laws, and environmental laws. Having a solid legal and regulatory framework, working with compliant suppliers, and maintaining openness and accountability in the supply chain can all help achieve this.

By enabling a supply chain to adapt, change, and comply with changing conditions, lowering the risk of disruptions, and assuring continuity of supply, these variables work together to increase a supply network's overall resilience.



A survey by Deloitte in partnership with the Chartered Institute of Procurement & Supply in October 2022 identified the following observations which promote Agility, flexibility, and Legality for making a more resilient supply chain-

- 74% of respondents across all sectors report that they believe their procurement and supply chain functions have been resilient through disruption.
- 70% of private and 63% of public sector respondents have increased their level of dual or multisource sourcing within their strategic spend categories.
- 38% of survey respondents have entered into new supply markets to reduce their risk to continuity of supply.



6) Diversification Of Suppliers:

Over-reliance on a single supplier can create supply chain vulnerability. Diversification of suppliers can mitigate such risks, as it enables businesses to source goods and services from alternative sources in case of disruptions.

7) Building Relationships With Suppliers:

Developing strong relationships with suppliers can help mitigate risks in the supply chain. Open communication channels and trust can help businesses work together to manage risks and build resilience.

8) Investing In Technology:

Technology can be used to improve visibility, communication, and decision-making in the supply chain. Advanced analytics, real-time tracking, and cloud-based systems can help businesses monitor their supply chains and respond quickly to any disruptions.

9) Implementing Risk Management Strategies:

Companies can identify and evaluate risks in their supply chains and develop contingency plans to mitigate those risks. For example, having a backup inventory, identifying alternative transportation modes and routes, and establishing a crisis management team can help businesses respond to any unexpected events.

10) Conducting Regular Assessments:

Regular assessments of the supply chain can help businesses identify areas for improvement and mitigate risks. These assessments can include audits, surveys, and other tools to monitor performance and identify areas that need attention.



11) Collaboration And Partnerships:

Collaboration and partnerships among businesses, government agencies, and other stakeholders can help develop a coordinated response to supply chain disruptions. This can include sharing information, pooling resources, and coordinating responses to emergencies.

12) Ensuring Compliance With Legal And Regulatory Requirements:

Businesses should ensure compliance with legal and regulatory requirements to avoid penalties and reputational damage. This can include labor laws, environmental regulations, and safety standards. Compliance can also help build trust with customers and suppliers, enhancing the overall resilience of the supply chain.



In conclusion, the current state of the world has brought attention to the significance of supply chain resilience for businesses everywhere, including those in Bangladesh. While some businesses in the nation have taken steps to increase their resilience, many others have lagged. Bangladesh must strengthen its infrastructure, promote supply chain transparency, give SMEs financial support, invest in workforce skills, and foster agility, flexibility, and legality to increase supply chain resilience in the nation. To create a resilient and adaptable supply chain system that can endure unforeseen disruptions and sustain the nation's economic growth, the government, industry, academia, and other stakeholders must collaborate.

More Than 50%

of organizations have not yet actively started to build a roadmap for
SUPPLY CHAIN DIGITAL TRANSFORMATION.



Source: Gartner

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Sheikh Nafiz Ahmed
MCIPS

Senior Manager, Procurement
BRAC

LOGISTICS

FOR A SUSTAINABLE TOMORROW

“ Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Gro Harlem Brundtland (Ex-Prime Minister of Norway)

”

“ We're really playing a crazy game here with the atmosphere and the oceans. We're taking vast amounts of carbon from deep underground and putting this in the atmosphere — this is crazy.

(Elon Musk, Founder, CEO and Chief Engineer of SpaceX)

”



WHAT IS SUSTAINABILITY?

Sustainability means meeting our own needs without compromising the ability of future generations to meet their own needs. In addition to natural resources, we also need social and economic resources. Sustainability is not just environmentalism. Embedded in most definitions of sustainability we also find concerns for social equity and economic development. In the broadest sense, sustainability refers to the ability to maintain or support a process continuously over time. In business and policy contexts, sustainability seeks to prevent the depletion of natural or physical resources, so that they will remain available for the long term.

WHY SUSTAINABILITY IS A BUZZWORD NOWADAYS?

In the name of business expansion mankind has been destroying the environmental ecosystem which eventually strikes the economic and social balance.

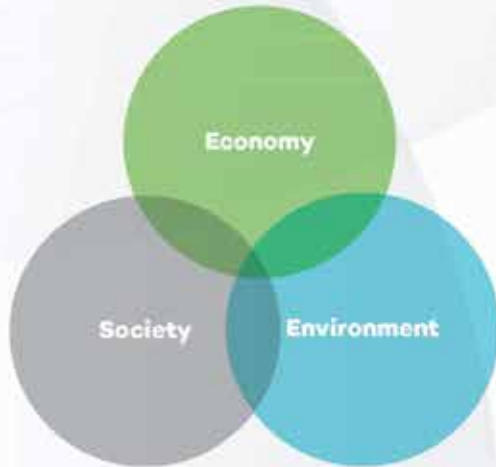


Fig 1: Three Pillars of Sustainability



CAUSES OF INCREASES IN CO₂ EMISSIONS

Human greenhouse gas emissions are accelerating global warming around the world.

CO₂ EMISSION

IMPACT ON ENVIRONMENT

Climate change is altering our planet, causing extreme weather events like tropical storms, wildfires, severe droughts, and heat waves, negatively affecting crop production, causing disruption to animals' natural habitats, and more.

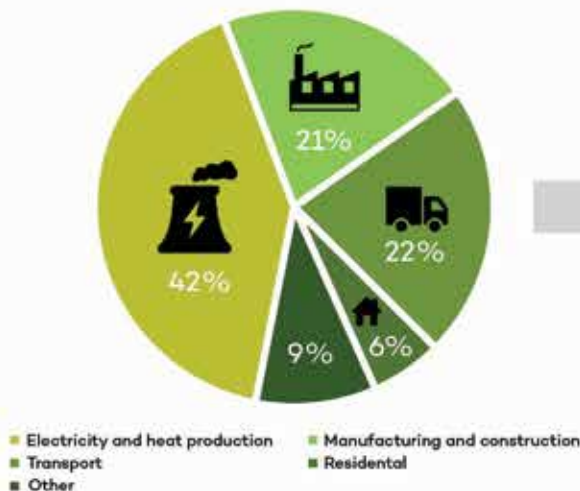
Carbon emissions affect the planet significantly, as they are the greenhouse gas with the highest levels of emissions in the atmosphere. This, of course, causes global warming and ultimately, climate change.

Carbon dioxide is released into the atmosphere when fossil fuels: coal, natural gas, and oil are burned which are widely used in the production and logistics sector.

Increases in CO₂ emissions are coming from 3 main human sources:



CO₂ Emissions by Economic Sector



CO₂ Emissions by the Transport Sector

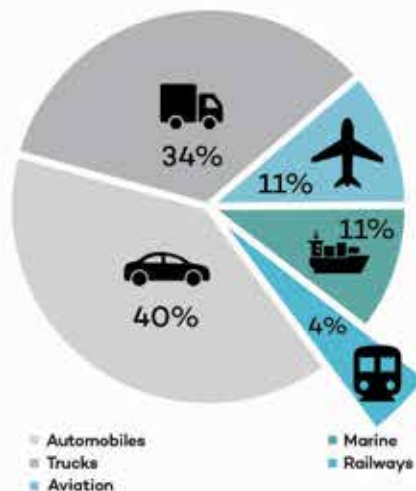
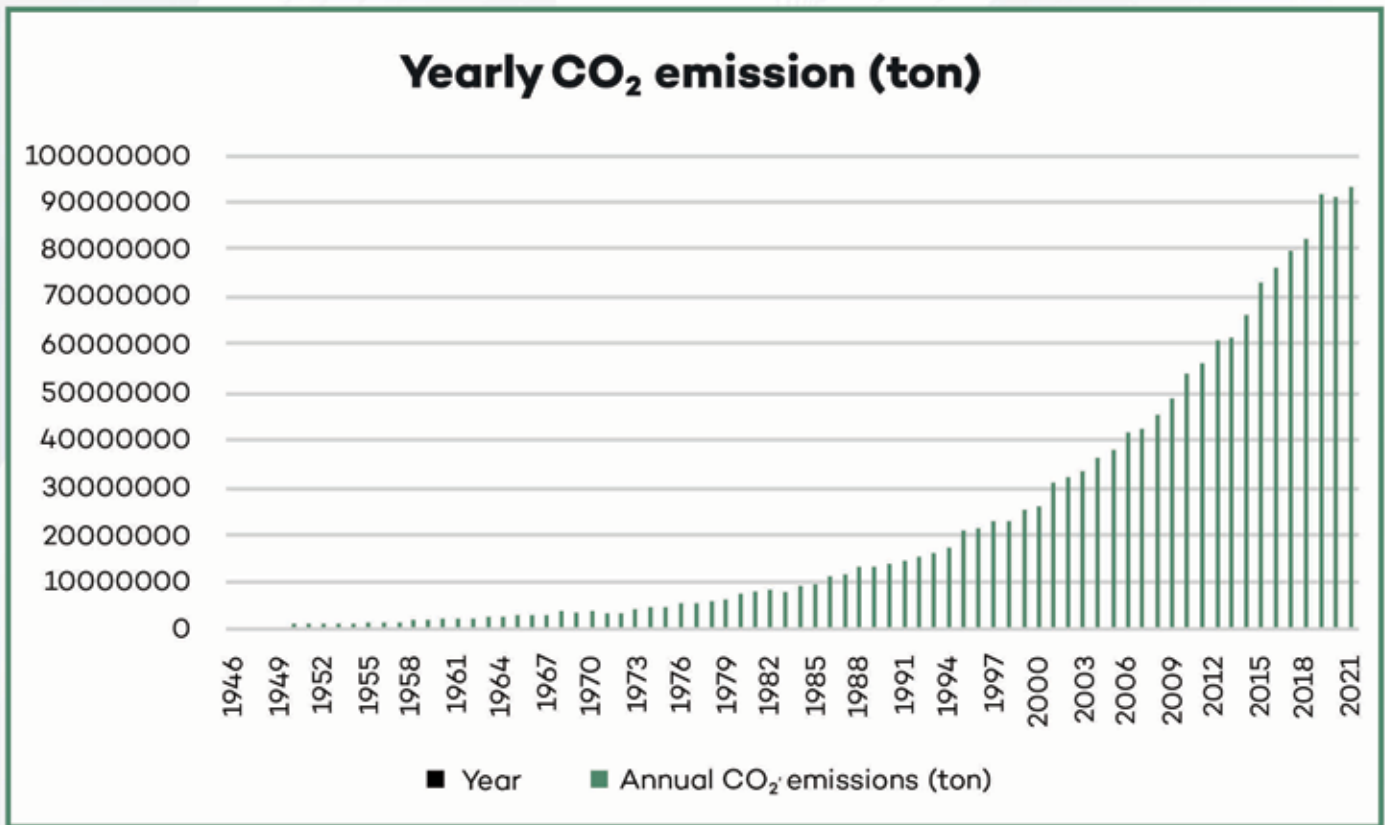


Fig 2: Sector wise Carbon Emission (%)

Transportation accounts for about 20% of greenhouse gas emissions, with road transportation accounting for three-quarters of this share. The facts and figures show the massive amount of carbon emission by logistics specifically domestic transport in Bangladesh. As the world grapples with the urgent need to address climate change, industries are increasingly exploring innovative strategies to reduce their carbon footprint. The impact is known to all and time has already gone by to take some measures which shall minimize the emission level.

Fig 3: Annual CO₂ emission in Bangladesh

FEW STEPS IN THE REALM OF LOGISTICS TO LOWER CARBON EMISSION

1. Backhauling in Reverse Logistics

Backhauling refers to the process of utilizing empty cargo space during return trips of vehicles. Traditionally, logistics operations involve shipping goods from point A to point B and then returning empty, resulting in wasted resources and increased carbon emissions. Backhauling aims to optimize this process by ensuring that return trips are productive, reducing the number of empty miles traveled, and maximizing vehicle utilization.

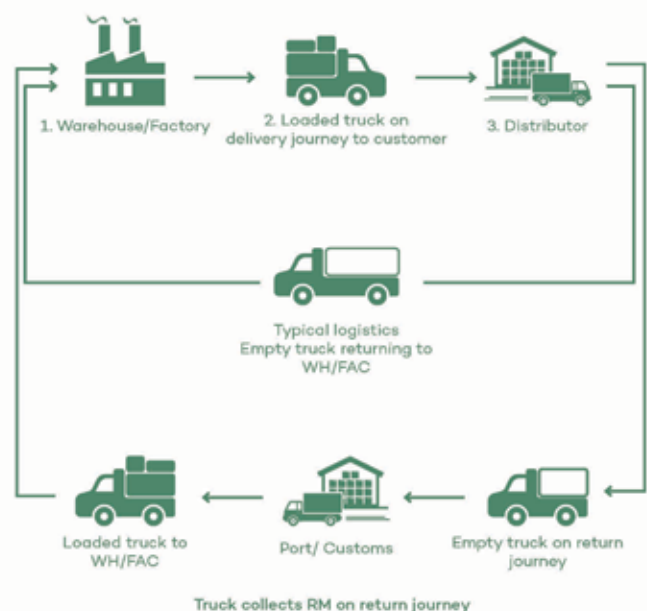


Fig 4: How backhauling works

ANNUAL EMISSION WILL BE
409.41 MILLION
 TONS BY 2030



HOW BACKHAULING REDUCES CARBON FOOTPRINT »»

SOME KEY NOTES:

Outbound Transportation: Finished goods transportation from WH (warehouse)/ Fac (Factory) to nationwide distributors/customers.

Inbound Transportation: Raw/packaging materials transportation from port/ customs to WH/ Fac.

Let's assume, a company needs 500 trips of big (23 feet) covered vans in outbound per month in a zone near to port/ customs and 200 trips in inbound from port/customs for carrying raw materials.

Suppose, the distance from WH to customer is 250 km. Hence, 1 van in outbound would cross 500 km distance per trip including up and down (250+250 km = 500 km). In Bangladesh all the covered vans use diesel for fuel.

Considering an avg. mileage of 5 km/Ltr. in the highway, it would need 100 Ltr. of diesel for the 500 km up and down trip. One liter of diesel creates 2.68 kg of CO₂.

So one truck would add 268 kg of Carbon to the atmosphere. For one month operation the number of carbon emission is $500 \times 268 = 134,000$ kg, for one year it is 1,608 tons of CO₂. And this is only for outbound transportation (500 trips a month).

For inbound transportation the number would be 643 tons of carbon per year. In total (outbound + inbound) the amount of carbon emission in a year is 2,251 tons.

After incorporating backhauling, the company can avoid 500 km running distance in one trip which will eventually reduce carbon emission by the amount of 643 tons, same as the amount of emission in inbound. The percentage of lowering carbon by backhauling in this case is almost 28%.

In addition to this economic benefit can be estimated as return trip is ensured. It's the negotiation part with transporter.

Establishing partnerships and collaborations between logistics companies, manufacturers, and customers is vital for successful backhauling. By sharing information, coordinating schedules, and optimizing routes, organizations can identify opportunities for backhauling and ensure the smooth flow of goods during return trips.

Embracing technological advancements can streamline backhauling processes. Advanced data analytics, route optimization software, and tracking systems enable logistics providers to identify backhaul opportunities, match cargo with available space, and optimize delivery routes. Automation and real-time visibility empower businesses to make data-driven decisions, enhancing the efficiency and effectiveness of backhauling operations.

2. Direct Shipment from Factory to customers

Direct shipment from factories to distributors has emerged as a promising solution for lowering carbon emission. By bypassing intermediate warehousing and transportation stages, this approach minimizes resource consumption, optimizes efficiency, and promotes sustainability within the supply chain.

WHAT IS DIRECT SHIPMENT?

Direct shipment entails shipping products directly from manufacturing facilities to distributors, bypassing the traditional warehousing and intermediate transportation steps. Rather than storing goods in regional distribution centers, this approach streamlines the supply chain, reducing the time and resources required for handling and storage. The direct movement of products from factories to end destinations not only enhances efficiency but also presents a valuable opportunity for reducing carbon emissions.

Direct shipment plays a pivotal role in reducing carbon emissions throughout the supply chain. By eliminating the need for intermediate warehousing and transportation, fewer vehicles are required, resulting in decreased fuel consumption and greenhouse gas emissions. The more direct the route, the shorter the distance traveled, leading to a significant reduction in the carbon footprint of the logistics process.

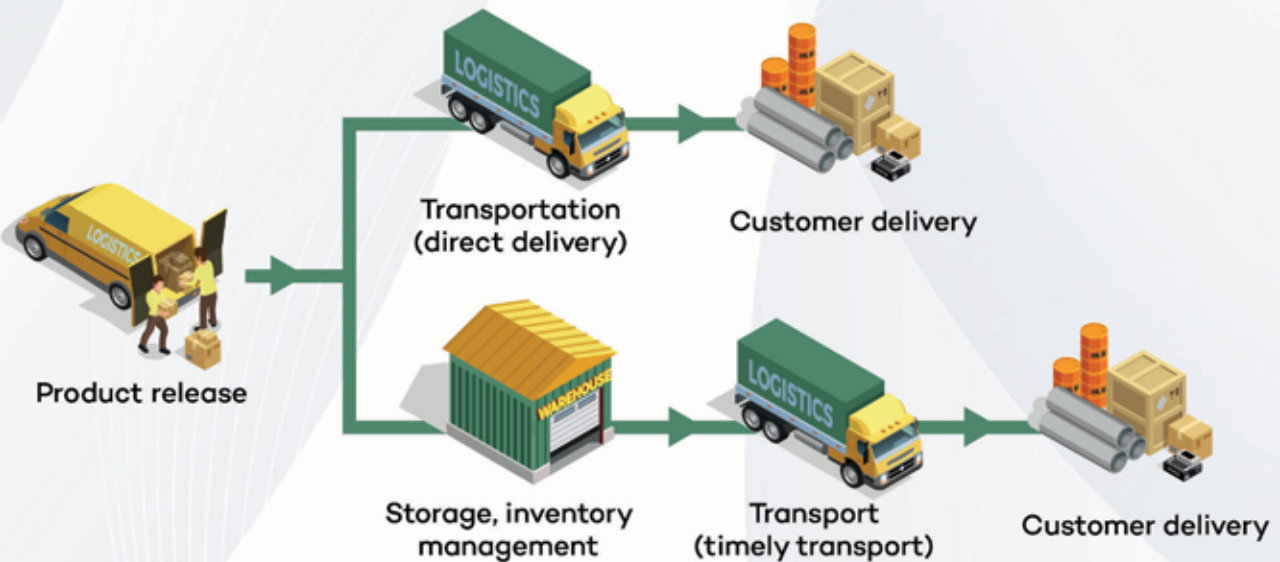


Fig 5: Direct shipment vs. Traditional shipment

HOW DIRECT SHIPMENT REDUCES CARBON FOOTPRINT

Let's say a company operates 1,000 trips in a month for primary shipment (from Fac to WH/DC-Distribution Center). The distance from Fac to WH/DC is 30 km. Considering the avg. mileage of 5 km/Ltr. one covered van needs 12 Ltr. of diesel to complete one up and down trip (30 km up and 30 km down). Hence, 12,000 Ltr. of diesel required per month and it would eventually discharge $12,000 \times 2.68 \text{ kg} = 32,160 \text{ kg}$ of carbon/month. If just 10% of the total primary shipment can be converted into direct shipment the reduction of carbon emission would be 38 tons in a year.

Calculation : $100 \text{ trip} \times 60 \text{ km} = 6,000 \text{ km/month}$,
Diesel burnt : $6,000 \text{ km} / 5 \text{ km/Ltr.} = 1200 \text{ Ltr.}$
Carbon emission for 1200 Ltr. : $1200 \times 2.68 = 3,216 \text{ kg/month}$, 38 tons/yr.

Additionally, adopting direct shipment can result in substantial cost savings for businesses. By cutting out intermediate steps, companies can reduce inventory carrying costs, warehousing expenses, and transportation fees.

Optimizing packaging practices is crucial for the success of direct shipment. Companies should strive to reduce excess packaging materials, choose eco-friendly materials whenever possible, and design packaging that maximizes space utilization and protects products during transit. Efficient packaging minimizes waste and reduces the overall carbon footprint associated with shipping. Route optimization software and real-time tracking systems can enhance transport efficiency in direct shipment. By leveraging data-driven insights, businesses can make informed decisions and streamline their transportation operations.

3. Usage of trailer in place of covered vans in Primary Shipment

This segment explores the potential of using 40-foot trailers instead of 23-foot covered vans for factory-to-warehouse shipments as an effective strategy to minimize carbon emissions. By maximizing cargo capacity and reducing the number of trips required, this shift in transportation mode can significantly contribute to a greener and more efficient supply chain. The transition from using 23-foot covered vans to 40-foot trailers involves replacing smaller vehicles with larger trailers capable of accommodating more cargo. Traditional logistics operations often rely on smaller vans due to their flexibility and ease of access to urban areas. However, this approach may result in multiple trips and increased carbon emissions. By employing larger trailers, businesses can consolidate shipments and transport a greater volume of goods in a single journey, thereby optimizing efficiency and reducing environmental impact.

Theoretically, one 23 feet covered van has 966 cubic feet space and one 40 feet trailer has 2,365 cubic feet. Hence, technically 2.5 nos. of covered van can be replaced by 1 trailer. So, 100 trips by covered van can be executed by 40 trips of trailer.

CARBON CALCULATION

Carbon discharge by van for 100 trips, considering 30 km distance from Factory to WH/DC: 3,216 kg. (Mileage: 5 km/ltr., total up and down distance/trip: 60 km).

Carbon discharge by trailer for 40 trips: 2,573 Kg. (Mileage: 2.5 km/ltr)

Upgrading infrastructure, such as loading docks and storage facilities, to accommodate 40 feet trailers is essential. Ensuring adequate space and accessibility at both the factory and warehouse locations is crucial for seamless loading and unloading operations. Collaborating with infrastructure providers and logistics partners can help facilitate this transition.

To execute this particular project a company can get a financial hit as the rent of trailer and prime mover would cost higher than a covered van. All things considered, industry has to think for larger aspect to save our beloved planet.

COVERED VAN VS. TRAILER SHIPMENT



Fig 6: Covered van vs. Trailer shipment

In conclusion, addressing and lowering carbon emissions in the logistics realm is a crucial step towards a more sustainable future. As the demand for transportation and goods continues to rise, it becomes imperative to prioritize eco-friendly practices. This can be achieved through a combination of strategies, including improving vehicle fuel efficiency, adopting alternative fuels, optimizing route planning to minimize distances traveled, implementing intelligent logistics systems, and exploring innovative technologies like electric and hybrid vehicles. Furthermore, collaboration among industry stakeholders, governments, and policymakers is essential to establish and enforce regulations that promote sustainable practices. By embracing these measures, the logistics sector can play a pivotal role in reducing carbon emissions, mitigating climate change, and fostering a greener planet for generations to come.



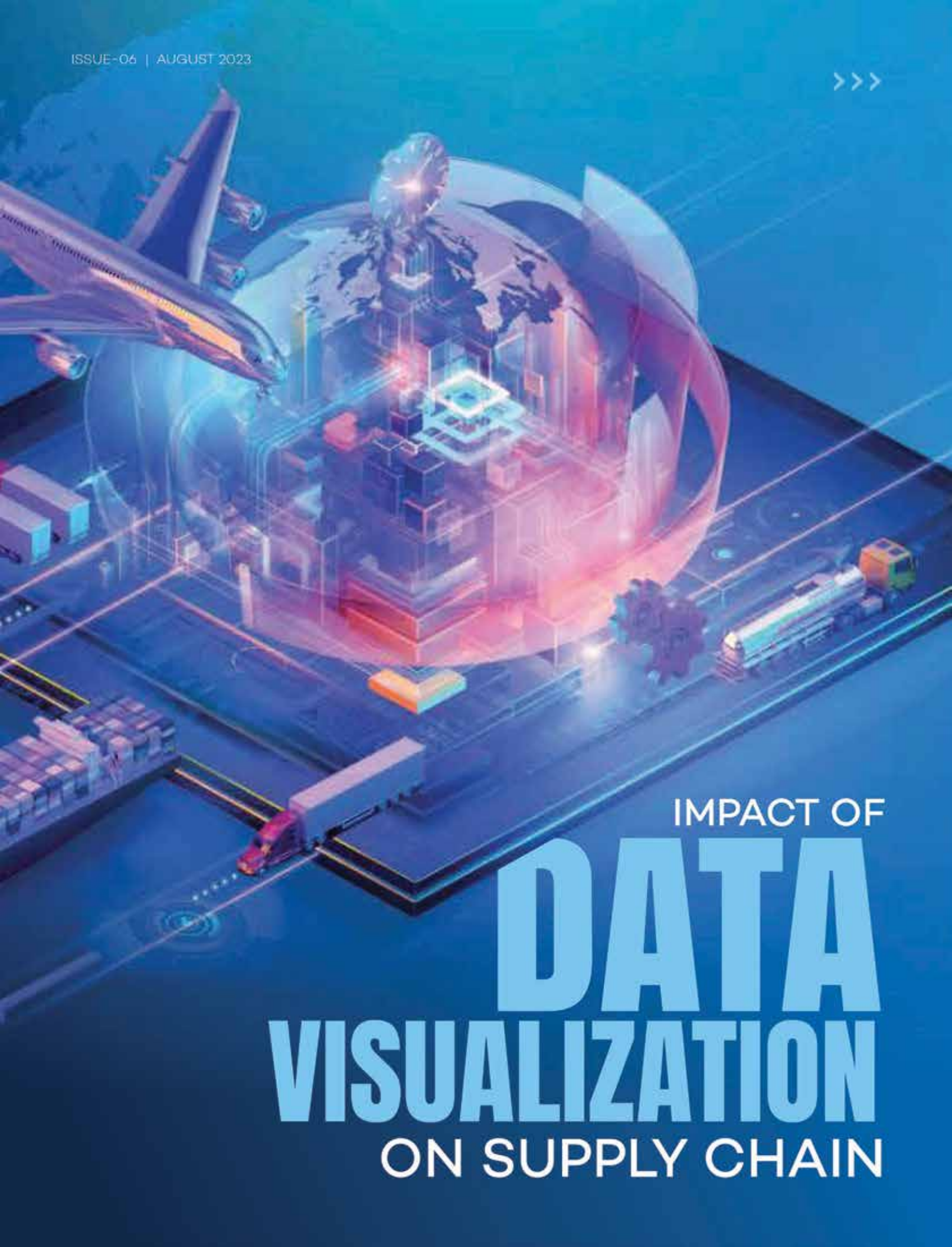
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IMPACT OF
DATA
VISUALIZATION
ON SUPPLY CHAIN

Data visualization is the art of envisioning insight from data. According to IBM, data visualization is the representation of data through the use of common graphics, such as charts, plots, infographics, and even animations. It is one of the core elements of data analytics. Typically, data analytics comprises three core elements—data collection, data processing, and data visualization. In modern-day supply chains, the availability of data plays a vital role in enhancing performance. With numerous decisions to be made within the supply chain operations, it is essential to rely on data-driven decision-making to mitigate risks and capitalize on opportunities. However, dealing with large volumes of data can be challenging. Suppose you have accumulated a market study dataset of your organization's supply chain. Simply having the data is not enough; the key lies in extracting valuable insights from it. Firstly, you have to analyze the data to clean up any redundancy. Then the data is to be aggregated or segregated based on requirements. Now while making a decision based on that data, the insight from the data should be comprehensible to all the stakeholders. That's where data visualization comes into play.

1. DATA ANALYTICS

2. DATA COLLECTION

3. DATA PROCESSING

4. DATA VISUALIZATION

The main advantage of using data visualization tools is the ease with which the underlying story within the data can be perceived. When presented with a series of numbers, it can be difficult to comprehend the overall impact they convey. However, when those numbers are represented through visual diagrams, understanding the data becomes easier. Also, data presentation becomes more meaningful and comprehensive when communicating with stakeholders. The choice of appropriate visuals is crucial, as different types of visuals are effective for expressing different insights. For example, bar charts can represent year-on-year growth, while waterfall charts are more effective in visualizing contributing factors behind growth or de-growth with their respective contribution percentages. Therefore, data analysts in the supply chain must carefully select the most suitable visual representations for presenting data. Another significant advantage of data visualization tools is the ability to slice and dice data effortlessly with a single click. Individuals can delve into granular data while maintaining consistency in their analysis.

 **Power BI**

 **tableau**

 **Zoho Analytics**

 **K**



Typical supply chains generate data relating to sales, inventory, procurement, production, logistics, finances, etc. every moment. However, all of the data is not required by all the entities of the supply chain. It creates a sense of priority to track only the required data by each team and process the data accordingly to create relevant reports. The problem arises when different insights are found from different teams on the same issue from the same set of data. This occurs due to the way of analyzing the data or the limitation in computation. Whatever the reason is, such situations bring inefficiencies to the organizations. If a unifying platform can be developed for such visualization of data, then it will reduce the effort of individuals as well as the redundancy of multiple insights. This can be referred to as the one single truth of the organization. In such a scenario, individuals will be involved in analyzing the data rather than just preparing the reports.



Data visualization has been made easier by Business Intelligence (BI) software like Power BI, Tableau, Klipfolio, Looker, Zoho Analytics, etc. Due to the high number of Microsoft product users in Bangladesh, Power BI is achieving a competitive advantage here. The basic version of Power BI is open-source making it easily accessible for download and learning. Additionally, it offers flexibility in connecting to a wide range of data sources, from Excel files to SQL databases. It can also be integrated with data repositories, allowing real-time data visualization. Another feature is Power Query which helps in processing the data.

The impact of these data visualization tools on supply chains is immense. By enabling organizations to make faster and smarter decisions, data visualization reduces lead time in processes. Effective and efficient decision-making also provides organizations with a competitive edge in terms of cost management. Visual representations of data are more accessible and easily understandable to a diverse range of individuals, fostering effective communication and alignment throughout the supply chain. It allows different teams to share insights, align their strategies, and work together towards common goals. Moreover, data visualization tools enable real-time monitoring and tracking of key performance indicators (KPIs) across the supply chain. This real-time visibility helps identify bottlenecks, delays, or inefficiencies, allowing prompt corrective actions to be taken.



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IMPROVING THE CONSUMPTION OF NUTRITIOUS

and safe food for all people

Healthier diets
FOR ALL



THE CRITICAL NEXUS:

EXPLORING THE CRUCIAL ROLE OF FOOD SUPPLY CHAINS FOR BANGLADESH AND BEYOND



In today's interconnected world, the importance of a well-functioning food supply chain cannot be overstated. This holds true not only for Bangladesh but also on a global scale. The resilience and efficiency of food supply chains play a critical role in ensuring food security, economic stability, and overall societal well-being.

In Bangladesh, where agriculture serves as a vital sector, a robust food supply chain is paramount for meeting the dietary needs of its growing population. With a rapidly increasing population, it is crucial to ensure that food production, distribution, and retailing are well-coordinated to prevent shortages and price fluctuations. An efficient food supply chain enables timely and reliable access to nutritious food, particularly for vulnerable communities, ultimately promoting public health and reducing malnutrition.

On a global scale, food supply chains are essential for addressing the challenges of food scarcity and global hunger. With a world population projected to reach 9.7 billion by 2050, effective food supply chains are essential to sustainably produce, transport, and distribute food to meet the rising demand. Moreover, in an era of globalization, interconnected supply chains facilitate international trade, allowing countries to access a diverse range of food products and achieve food security even in times of local production shortfalls or disruptions.

However, the COVID-19 pandemic has highlighted the vulnerabilities and complexities within global food supply chains. Lockdowns, border closures, and restrictions on transportation have disrupted the flow of goods, leading to supply chain bottlenecks and food shortages in many regions. This crisis underscores the need for resilient and adaptable food supply chains that can withstand unforeseen shocks, including natural disasters, conflicts, or health emergencies.

The food supply chain is a complex system that encompasses all the stages involved in bringing food from farms to consumers. It begins with agricultural producers who cultivate crops or raise livestock, ensuring a bountiful harvest. The harvested food products then undergo processing, including washing, sorting, packaging, and sometimes cooking or freezing, to enhance safety and quality. The next stage involves transportation, where processed goods are moved from manufacturing plants to warehouses, distribution centers, and local retailers. Consumers play a vital role by making choices in grocery stores, restaurants, or online platforms, shaping the industry's production and sustainability. Challenges such as weather, transportation disruptions, and global pandemics can impact the supply chain, emphasizing the need for collaboration and resilience. Ultimately, the food supply chain strives to provide a sustained flow of nourishment from farm to table, ensuring a resilient, sustainable, and accessible food system for all.

An agricultural revolution is underway, as new technologies transform the way we produce food and the way we consume it—triggered by the world's growing population, threats to global food security and the demand for sustainable food production.

What we eat, how it is produced and how it gets from the farm to our tables will dramatically change in the next two decades. In fact, the agricultural sector will be the industry that experiences the most significant digital transformation thanks to powerful technologies such as The Internet of Things (IoT), drones, robots, artificial intelligence (AI) and edge computing.



Many current concerns about global supply chain issues, sustainability and the world's food supply, carbon footprints and climate change will be resolved in the next two decades. Will be harnessed to make the world a better place – one in which we protect the environment and feed the world in a sustainable way.

The food supply chain and food security are intertwined, working in tandem to ensure a sustainable and resilient food system. A well-functioning supply chain is crucial for achieving food security by facilitating the efficient flow of food from production to consumption, reducing the risk of shortages. Simultaneously, food security influences the supply chain by providing stable demand and consumption patterns, allowing for improved planning and resource optimization. Collaboration among stakeholders within the supply chain is vital for addressing challenges and promoting food security, including climate change impacts and price volatility. Moreover, supporting local food production and distribution systems can enhance food security by reducing dependence on long-distance transportation and bolstering local economies. By prioritizing equitable access to nutritious food, investing in infrastructure, and fostering collaboration, we can create a stronger, more inclusive food system that ensures both the efficiency of the supply chain and the goal of food security for all.

Bangladesh has made significant progress in strengthening its food supply chain in recent years. The government has implemented various initiatives to enhance food security and ensure a smooth flow of food from production to consumption. For example, they have invested in improving transportation infrastructure, including roads and bridges, to facilitate the movement of agricultural products across the country.

Additionally, Bangladesh has emphasized the adoption of modern agricultural practices, such as high-yield crop varieties, efficient irrigation systems, and improved post-harvest storage facilities. These measures have helped to increase agricultural productivity, reduce food losses, and enhance the overall efficiency of the supply chain.



Bangladesh's food supply chain faces several fragilities and susceptibilities that can impact its efficiency and resilience. Here are some key factors:

CLIMATE VULNERABILITY

Bangladesh is highly susceptible to climate change impacts, including floods, cyclones, and droughts. These extreme weather events can disrupt agricultural production, damage infrastructure, and hamper the transportation of food, leading to supply chain disruptions.

INFRASTRUCTURE CHALLENGES

Limited transportation infrastructure, including roads, bridges, and storage facilities, can hinder the smooth movement of agricultural products from rural areas to urban markets. Inadequate cold storage facilities can also lead to post-harvest losses and reduce the shelf life of perishable goods.

SMALLHOLDER FARMING SYSTEM

Bangladesh's agricultural sector is predominantly comprised of smallholder farmers with limited access to resources, technology, and market information. This can result in productivity challenges and difficulties in meeting demand, affecting the overall efficiency of the supply chain.

PRICE VOLATILITY

Fluctuations in commodity prices, influenced by factors such as global market trends, production variability, and market manipulation, can affect the stability and affordability of food within the supply chain. This volatility can create challenges for both producers and consumers.

FOOD SAFETY AND QUALITY CONCERNS

Ensuring food safety and quality throughout the supply chain remains a significant challenge. Inadequate hygiene practices, insufficient quality control measures, and a lack of consumer awareness can contribute to foodborne illnesses and undermine consumer confidence.

DEPENDENCE ON IMPORTS

Bangladesh relies on imports for certain food items, including essentials like rice and edible oils. Disruptions in international trade, price fluctuations, or supply chain disruptions in exporting countries can impact the availability and affordability of these imported goods.

Addressing these fragilities and susceptibilities requires comprehensive strategies and interventions. This can include investments in climate-resilient infrastructure, improving agricultural practices and technologies, enhancing storage and processing facilities, strengthening market linkages for smallholder farmers, implementing robust quality control systems, and promoting sustainable and diversified agriculture to reduce dependence on imports. By addressing these challenges, Bangladesh can build a more resilient and sustainable food supply chain, ensuring food security for its population.

To stabilize the food supply chain in Bangladesh, several strategies can be implemented. **Firstly**, investing in resilient infrastructure, including transportation networks, storage facilities, and cold chains, is crucial. This will ensure the smooth movement of agricultural products from farms to markets, minimizing post-harvest losses and extending the shelf life of perishable goods. **Secondly**, promoting climate-smart agricultural practices, such as water-efficient irrigation, crop diversification, and resilient seed varieties, can help mitigate the impact of climate change on agricultural production. **Thirdly**, strengthening market linkages between farmers and consumers through improved market information systems, farmer cooperatives, and contract farming

can enhance price stability and reduce post-harvest losses. **Fourthly**, enhancing access to financial services and agricultural inputs for smallholder farmers can improve their productivity and resilience, enabling them to contribute more effectively to the supply chain. **Lastly**, implementing robust food safety and quality control measures, along with consumer awareness campaigns, will instill confidence in the food supply chain and protect public health. By adopting these strategies, Bangladesh can stabilize its food supply chain, ensuring a sustained flow of safe and nutritious food to its population.

The supply chain community in Bangladesh plays a vital role in ensuring the smooth functioning and optimization of the food supply chain. This community encompasses various stakeholders, including farmers, processors, distributors, retailers, logistics providers, and policymakers. Firstly, farmers are at the forefront, responsible for producing crops and raising livestock. Their adoption of sustainable practices, such as efficient resource utilization and responsible land management, contributes to the overall resilience and productivity of the supply chain.

Processors, through their expertise in food processing and packaging, add value to the agricultural produce, improving its quality and extending its shelf life. Distributors and retailers play a critical role in connecting producers with consumers, ensuring timely delivery and availability of food products. The logistics providers contribute by efficiently transporting goods across the country, reducing delivery times and minimizing losses. Policymakers provide the necessary regulatory framework, incentives, and support to foster a conducive environment for the supply chain's growth and development. Through collaboration, knowledge-sharing, and coordination, the supply chain community in Bangladesh can address challenges, promote innovation, and collectively work towards a resilient and sustainable food supply chain that meets the needs of the population.

Global warming has significant implications for the food supply chain in Bangladesh. Rising temperatures, changing rainfall patterns, and increased frequency of extreme weather events pose substantial challenges to agricultural production and the overall supply chain.



Firstly, changing climate patterns can disrupt crop cycles, leading to decreased yields and compromised quality of agricultural produce. Heat stress, prolonged droughts, and increased pest infestations can further exacerbate these challenges. **Secondly**, frequent floods and cyclones can damage infrastructure, including roads, bridges, and storage facilities, hindering the transportation and storage of food. **Thirdly**, saltwater intrusion due to sea-level rise threatens fertile agricultural lands, particularly in coastal regions, impacting agricultural productivity. These climate-related impacts disrupt the stability and reliability of the food supply chain, leading to reduced availability, increased prices, and potential food shortages. Adaptation measures such as promoting climate-resilient farming practices, strengthening infrastructure, and enhancing early warning systems are essential for minimizing the adverse effects of global warming on the food supply chain in Bangladesh.



During my time in Winnipeg, Canada, I've been keen on understanding the local food supply chain practices. I discovered that Maple Leaf Foods, a prominent Canadian company, stands out for its exceptional approach. With a strong emphasis on sustainability, transparency, and food safety, Maple Leaf Foods has established itself as an industry leader. They prioritize reducing environmental impacts through responsible sourcing, waste reduction, and energy conservation initiatives. Additionally, the company demonstrates a commitment to animal welfare, investing significantly in this aspect. To maintain the highest standards, Maple Leaf Foods has implemented robust food safety systems and rigorous quality control measures. Their dedication to sustainability has garnered recognition, including being named one of the world's most sustainable companies by Corporate Knights and achieving Carbon Neutrality in their operations. It's impressive to witness such exemplary food supply chain practices right here in Winnipeg.

In conclusion, the importance of food supply chains in Bangladesh and globally cannot be overstated. These intricate networks are crucial for ensuring food security, economic stability, and public health. In Bangladesh, a well-functioning food supply chain is essential for meeting the dietary needs of its growing population and reducing malnutrition. On a global scale, efficient supply chains are vital to address food scarcity, sustainably meet rising demand, and enable international trade.



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WHEN FEARS DRIVE MARKETS:

UNDERSTANDING THE IMPACTS OF PANIC BUYING ON THE SUPPLY CHAIN ECONOMY AND PROPOSED SOLUTIONS

Panic buying occurs when people feel afraid or anxious about potential shortages and rush to stockpile essential items. This behavior is driven by fear, the fear of missing out, and the influence of others. Panic buying disrupts supply chains, creating imbalances in product availability and negatively affecting suppliers, manufacturers, and small businesses. The COVID-19 pandemic in Australia highlighted the severe consequences of panic buying, causing shortages and disrupting supply chains. Psychological triggers like fear, uncertainty, herd mentality, and societal factors such as media influence and trust in institutions contribute to panic buying. This article explores the phenomenon of panic buying, focusing on its impacts on global business and supply chains. To address this issue, the article suggests strengthening communication and collaboration among supply chain partners, improving flexibility and agility in supply chains, using technology and data analytics for demand forecasting, conducting public education campaigns, and implementing measures to stabilize the market during crises. Understanding the causes and implications of panic buying is crucial for businesses, supply chains, and governments to effectively tackle this behavior, minimize its impact, and foster a resilient and fair market environment.

1. UNDERSTANDING PANIC BUYING: CAUSES AND CHARACTERISTICS

Consumer preference has become a significant concern in today's businesses, especially within global supply chains. The fluctuating demands of consumers for various commodities can profoundly impact businesses and their supply chains. One notable phenomenon that has emerged recently, particularly during disruptive periods of the COVID-19 pandemic, is the panic buying of essential products such as healthcare items, food, and medicine. These panic buying episodes have regularly occurred in a volatile, uncertain, complex, and ambiguous (VUCA) world. Therefore, it is essential to understand the causes and characteristics of panic buying to address its impacts on businesses and supply chains effectively.

In today's fast-paced world, consumers are constantly seeking convenience and instant satisfaction. They are accustomed to having their needs met promptly, and any disruptions to the regular supply of essential products can trigger panic buying behavior. During times of uncertainty, such as natural disasters, political instability, or health emergencies, consumers may become conscious of a potential shortage or unavailability of essential items. This perception leads them to engage in panic buying, where they stockpile goods out of fear and a desire to secure their immediate needs (Shen & Sun, 2023).

One prominent cause of panic buying is the psychological factor known as the fear of missing out. When consumers observe others engaging in panic buying or observe empty store shelves, they experience a sense of urgency and fear that they may not be able to obtain necessary products in the future. This fear drives them to join the frenzy and stock up on items, even if it means purchasing more than they immediately need. Additionally, media coverage and social media exaggeration of panic buying incidents contribute to spreading fear, further fueling the phenomenon (Singh et al., 2023).

Moreover, panic buying is often influenced by the herd mentality, where individuals imitate the actions of others in a group. Seeing fellow consumers rushing to purchase essential items creates a sense of social pressure, pushing individuals to conform and participate in panic buying to avoid feeling left behind or disadvantaged. This collective behavior amplifies the demand surge and disrupts supply chains, making it challenging for businesses to meet the sudden spike in orders.

The characteristics of panic buying are diverse and encompass various consumer behaviors. Firstly, panic buying tends to focus on essential products required for survival or maintaining well-being, such as food, water, medical supplies, and hygiene products. Consumers prioritize securing these items above non-essential purchases during times of uncertainty. Consequently,

the demand for these essential products skyrockets, placing significant disruption on supply chains that may not be prepared to handle such sudden surges (Kent et al., 2022).

Secondly, panic buying often leads to stockpiling or hoarding behavior. Consumers purchase more than they immediately need, driven by the fear of future scarcity. This hoarding mentality contributes to temporary shortages and exacerbates the challenges businesses and supply chains face in replenishing finished stocks. It also creates imbalances in the availability of products, with some regions experiencing shortages while others have excess inventory.

Furthermore, panic buying can disrupt the regular flow of goods within supply chains.

Manufacturers and retailers face difficulties in accurately predicting and meeting consumer demands, as panic buying introduces volatility and unpredictability into the system. The sudden surge in demand often surpasses the available production, warehousing, and transportation capacity, leading to delays in replenishing store shelves and fulfilling orders. Consequently, businesses must adapt their supply chain strategies to address these disruptions effectively (Rahman et al., 2022).

Therefore, consumer preference and its impacts on global supply chains have become significant business concerns. Panic buying of essential products during disruptive times has become a common occurrence in today's VUCA world. Understanding the causes and characteristics of panic buying is crucial for businesses and supply chains to mitigate its impacts effectively. By addressing consumer fears, leveraging technology, fostering collaboration, and enhancing supply chain flexibility, companies can better adapt to panic buying dynamics and ensure essential goods' availability to meet consumer demands.

2. THE RIPPLE EFFECT: IMPACTS OF PANIC BUYING ON SUPPLY CHAINS AND MARKETS

In recent years, the world has witnessed numerous instances of panic buying, where consumers rush to stockpile essential goods in anticipation of a crisis or shortage. From toilet paper and hand sanitizer to canned goods and cleaning supplies, panic buying has become a familiar phenomenon during times of uncertainty. However, what may seem like a temporary surge in demand can have far-reaching consequences beyond supermarket aisles. The ripple effect of panic buying can drastically impact the smooth supply chain network and disrupt the market's stability (Rahman et al., 2021).

One of the most immediate consequences of panic buying is supply chain disruption. When consumers suddenly engage in hoarding behavior, the demand for certain essential products skyrockets, overwhelming the capacity of manufacturers, distributors, and retailers. Suppliers face the challenge of meeting this sudden surge in demand, often resulting in shortages and stockouts. As a result, shelves become empty, leaving other consumers without access to the products they need. Panic buying, driven by fear and uncertainty, creates a self-perpetuating cycle that exacerbates the problem it seeks to alleviate.

The impacts of panic buying are not limited to the availability of goods. The supply chain disruptions caused by panic buying can have far-reaching consequences for the market and economy as a whole. Suppliers and manufacturers may be forced to allocate resources and production capacity to meet the inflated demand for certain products, diverting them from other critical areas. This reallocation can lead to imbalances in the supply and demand dynamics of the market, creating artificial scarcity and driving up prices. As prices soar, vulnerable populations and those with limited financial resources are severely affected, further exacerbating social and economic inequalities (Scala & Lindsay, 2021).

Moreover, panic buying can disrupt the normal equilibrium of global supply chains. In today's interconnected world, raw materials, components, and finished products often travel across borders before reaching consumers. Disruptions at one end of the supply chain can have a cascading effect, impacting suppliers, manufacturers, and retailers in distant regions. For instance, a panic-driven surge in demand for a specific raw material may cause shortages, affecting the production of multiple goods across different industries. These disruptions can have a domino effect, amplifying the initial panic and creating a ripple effect throughout the global market (Shen & Sun, 2023).

Another critical aspect of panic buying is its impact on small businesses and local producers. While panic buying may lead to short-term gains for some large manufacturers and retailers, it can be detrimental to smaller players in the market. Small businesses often lack the resources and capacity to respond rapidly to sudden surges in demand. As panic buying concentrates demand on a few major suppliers, local producers may struggle to compete, leading to revenue losses and potential closures. The long-term consequences can include a loss of diversity in the market, reduced consumer choice, and the erosion of local economies (Karmaker et al., 2021).



Ultimately, the ripple effect of panic buying goes beyond the immediate rush for goods. It affects the stability of the supply chain, distorts market dynamics, and amplifies social and economic inequalities. Recognizing the impacts of panic buying and taking proactive measures to address them is crucial for fostering a resilient and equitable market environment. By working together, consumers, businesses, and governments can mitigate the negative consequences of panic buying and build a more sustainable and robust future for all.

3. PANIC BUYING AMPLIFIED: THE ROLES OF THE COVID-19 PANDEMIC

The outbreak of the COVID-19 pandemic in early 2020 sent shockwaves throughout the world, disrupting lives and economies in unprecedented ways. As the virus spread rapidly, it triggered an unexpected response among people – panic buying. Panic buying is the act of excessively stocking up on essential goods due to fear and uncertainty, often resulting in shortages and empty store shelves. This phenomenon took hold globally, and Australia was no exception, experiencing its fair share of panic buying (Paul et al., 2023).

In Australia, panic buying peaked during the initial stages of the pandemic, particularly in March 2020, when the country implemented strict lockdown measures. Australians rushed to supermarkets and cleared the shelves of items like toilet paper, hand sanitizers, canned food, and other essential supplies. The sudden surge in demand overwhelmed the supply chain, causing shortages and leaving many without access to basic necessities (Paul et al., 2023).

Statistics from Australia during the peak of panic buying are staggering. Statista's research in March 2020 revealed that toilet paper sales in Italy surpassed predictions by 140%, while in Australia, the sales exceeded estimates by 98%. Similarly, in Spain and the UK, toilet paper sales were 82% and 80% higher than anticipated, respectively (Buchholz, 2020). The study further revealed that a large number of households experienced difficulties in purchasing essential items. The surge in demand was most pronounced for toilet paper, with reports of hoarding and empty shelves dominating headlines. Please refer to Figure 1 for the situation of panic buying of essential products, such as food, medicine and toiletries, in 2019-2020 in Australia.

Panic buying of the essentials intensifies



Figure 1: Panic buying of essential products during 2019-2020 (Prentice et al., 2020).

The most sought-after products included toilet paper, essential food items like rice and pasta, medicine for flu symptoms, durable goods, canned and frozen food, and electronic devices. Retail food expenditure saw a 35% surge, spending on pharmacy and toiletry items increased by 60%, and electronic purchases witnessed a 22% growth (Prentice et al., 2020). Figure 2 shows the gradual increase in purchasing of grocery items, pushing the retail growth in Australia. The panic buying phenomenon was not limited to physical stores alone. Online shopping platforms also experienced a significant surge in demand. In Australia, major online retailers reported an unprecedented increase in orders during the peak of panic buying. According to eBay Australia, the demand for grocery items surged rapidly in March 2020 compared to the previous year's period. Similarly, Coles, one of Australia's largest supermarket chains, reported a huge increase in online orders, causing delivery slots to be fully booked for weeks in advance.



Off the charts grocery spending is pushing up retail growth

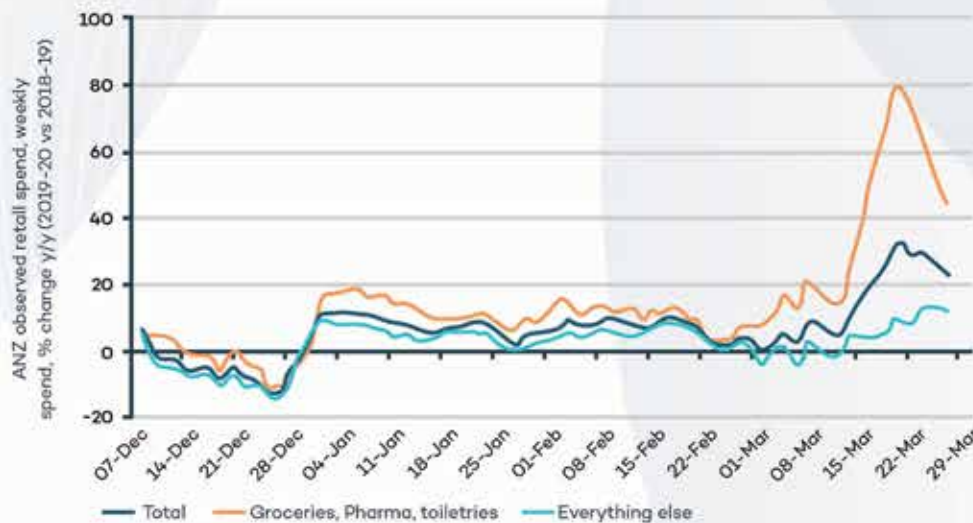


Figure 2: Instances of increase in purchasing of grocery items in Australia during 2019-20 (Prentice et al., 2020).

The reasons behind panic buying in disruptive times such as COVID-19 are multi-faceted. Fear of the unknown, scarce mindset and misinformation played significant roles in fueling this behavior. As COVID-19 cases escalated, uncertainty about the duration and severity of the pandemic gripped the population. Faced with the prospect of prolonged lockdowns and supply chain disruptions, individuals resorted to panic buying as a coping mechanism. Moreover, the rapid spread of misinformation through social media platforms exacerbated the situation, leading to increased anxiety and panic (Dohale et al., 2023).

The consequences of panic buying were far-reaching. Vulnerable individuals, such as the elderly and low-income families, were disproportionately affected by the shortages caused by panic buying. Hoarding essential items created artificial scarcity, making it difficult to access for those needing basic supplies. Moreover, panic buying disrupted the supply chain, leading to delays in restocking and increased pressure on essential workers, who tirelessly worked to meet the skyrocketing demand (Bastas & Garza-Reyes, 2022).

In response to the panic buying crisis, the Australian government and retailers took various measures to mitigate the situation. Supermarkets implemented purchasing limits on essential items to ensure fair distribution, and strict hygiene measures were implemented to protect both staff and customers. The government launched public awareness campaigns to educate the public about the consequences of panic buying and encourage responsible shopping (Rahman et al., 2022).

In conclusion, panic buying became an amplified phenomenon during the COVID-19 pandemic in Australia. Empty supermarket shelves and shortages of essential items became a common sight as fear and uncertainty gripped the nation. The statistics from Australia during the peak of panic buying paint a vivid picture of the magnitude of the issue. However, it is essential to learn from this experience and cultivate resilience, empathy, and responsible shopping habits to prevent similar situations in the future.

4. TRIGGERS OF PANIC BUYING: PSYCHOLOGICAL AND SOCIETAL FACTORS

Panic buying, characterized by excessive and often irrational purchases of goods in response to a perceived threat or crisis, has been a prevalent phenomenon in various situations, from natural disasters to global pandemics. While this behavior may initially seem perplexing, it can be attributed to psychological and societal factors influencing human behavior. This article aims to explore the triggers behind panic buying, provide a deeper understanding of its underlying causes, and critically analyze its implications.

One of the key psychological factors that contribute to panic buying is fear and uncertainty. During times of crisis, individuals experience heightened levels of fear and anxiety about the future. In the face of uncertainty, they seek a sense of control and security, leading to the impulse to stockpile essential items. The perception that supplies may become scarce fuels the fear, creating a self-perpetuating cycle of panic buying. However, it is important to recognize that, in many cases, the fear of scarcity is disproportionate to the actual risk. This heightened fear drives individuals to engage in panic buying, even if the rational analysis of the situation may suggest otherwise (Barnes et al., 2021).

Loss aversion, another psychological factor, also plays a significant role in triggering panic buying. Loss aversion refers to the tendency of individuals to be more motivated to avoid losses than to acquire gains. When faced with the potential loss of not having enough supplies, people prioritize the avoidance of shortages, even if it means overstocking their own supplies. This behavior is driven by the belief that the perceived loss of not having essential goods outweighs the actual gain of having extra items.

However, it is essential to recognize the potential negative consequences of this behavior, such as contributing to shortages and hoarding, which can exacerbate the situation for others in need (Nicomedes & Avila, 2020).

Herd mentality is another psychological trigger that fuels panic buying. Humans are social beings influenced by the behavior of others. When individuals observe others engaging in panic buying, they feel compelled to follow suit, driven by the fear of being left without essential items. The perceived scarcity intensifies, creating a domino effect that leads to widespread panic buying. While this behavior may be rooted in a genuine need for security, it can quickly spiral into a situation where rationality and consideration for others are disregarded. The influence of herd mentality highlights the power of social dynamics in shaping individual behavior (Loxton et al., 2020).

In addition to psychological factors, societal factors also contribute to panic buying. Media influence plays a crucial role in shaping public perception and behavior during crises. Exaggerating news coverage, images of empty shelves, and stories of scarcity can amplify fear and anxiety, triggering panic buying. Media outlets are responsible for providing balanced reporting and guidance to prevent exacerbating societal panic buying tendencies. Accurate and responsible reporting can help alleviate unnecessary panic and ensure individuals make informed decisions.

The level of trust people have in institutions, such as governments and healthcare systems, also impacts their response to crises. If individuals perceive a lack of preparedness or competence on the part of these institutions, they may feel compelled to take matters into their own hands and engage in panic buying. Building trust and ensuring transparent communication can help alleviate these concerns and reduce the likelihood of panic buying (Kent et al., 2022).

Moreover, panic buying can be viewed as an expression of self-interest in societies that emphasize individualism. The desire to protect oneself and one's immediate family leads individuals to prioritize their own needs over collective well-being. This individualistic mindset can further intensify panic buying, as people may disregard the potential negative consequences for others in their pursuit of personal security. Recognizing this societal aspect is crucial for developing strategies that promote cooperation, empathy, and community support during times of crisis.

In summary, panic buying is a complex behavior driven by a combination of psychological and societal factors. Fear, uncertainty, loss aversion, herd mentality, media influence, trust in institutions, and individualistic values all trigger and perpetuate panic buying. Recognizing and understanding these factors can aid in developing strategies to mitigate the effects of panic buying during times of crisis. Encouraging calmness, promoting accurate information, fostering trust and transparent communication, and emphasizing collective well-being over individualistic tendencies can help alleviate the impulses that drive panic buying, ensuring a more rational and empathetic response to challenging situations.



By keeping the public well-informed, panic buying tendencies can be mitigated, and confidence in the system can be restored.

Another key aspect in managing panic buying is establishing clear guidelines and implementing appropriate regulations. Retailers can set purchase limits on high-demand items to prevent hoarding and ensure fair distribution. These limits should be communicated clearly to customers, emphasizing the importance of responsible shopping and considering the needs of others in the community. Additionally, governments can introduce temporary legislation to regulate stockpiling and price gouging, discouraging individuals from engaging in panic buying behavior. Implementing these measures can instill a sense of equity and fairness, discouraging panic buying tendencies.

5. RESTORING NORMALCY AND SEIZING OPPORTUNITIES: STRATEGIES FOR MANAGING PANIC BUYING

In times of uncertainty and crisis, panic buying has become a recurring phenomenon, characterized by excessive purchases of essential items driven by fear and a sense of urgency. The COVID-19 pandemic served as a crucial reminder of the impacts panic buying can have on society, leading to empty store shelves and scarcity of vital supplies. To restore normalcy and effectively manage panic buying, it is crucial to implement strategies that address the underlying causes and provide practical solutions.

Firstly, communication plays a pivotal role in combating panic buying. Transparent and timely information dissemination can alleviate fears and provide reassurance to the public. Government agencies, local authorities, and retailers must collaborate to deliver accurate updates regarding the availability of essential goods, supply chain stability, and any measures being taken to address shortages. This can be achieved through various channels such as social media, official websites, and press releases.



Collaboration between stakeholders is essential to managing panic buying effectively. Governments, retailers, and community organizations should work together to develop contingency plans and emergency response strategies. By coordinating efforts, resources can be efficiently allocated to areas experiencing shortages, ensuring a more equitable distribution of essential items. Local communities can also play a vital role by organizing volunteer networks to support vulnerable individuals and facilitate access to necessary supplies. These collective efforts create a sense of solidarity and enable a more coordinated response to panic buying situations.

Furthermore, businesses can seize the opportunity caused by panic buying to adapt and innovate. Retailers can explore alternative distribution methods, such as online shopping platforms and delivery services, to minimize physical contact and ensure uninterrupted access to essential goods. Governments can support this transition through financial incentives and infrastructure development. Additionally, businesses can diversify their supply chains and explore local sourcing options to reduce reliance on a single region or country. Such adaptations address immediate challenges and contribute to long-term resilience and sustainability.

In conclusion, managing panic buying requires a multi-faceted approach encompassing effective communication, clear guidelines, stakeholder collaboration, and adaptability. By addressing the underlying causes of panic buying and providing practical solutions, normalcy can be restored, and opportunities can be seized. Through transparent information dissemination, responsible regulations, and collective efforts, societies can build resilience, maintain stability, and ensure the equitable distribution of essential items during times of crisis. By learning from past experiences and implementing proactive strategies, we can navigate uncertain times more effectively and foster a stronger, more resilient future.



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TSGS TALK

A man in a grey suit and dark shirt stands in front of a shelf filled with various awards and certificates. He is leaning his right arm on the shelf and has his left hand in his pocket. The background is slightly blurred, focusing attention on the man and the awards.

FEATURING

Ejazur Rahman

*MD, Mind Mapper Bangladesh &
CEO, ISCEA Asia*

Mr. Ejazur Rahman has ushered in a new era of supply chain virtuosity in Bangladesh. He is one of the best supply chain minds, a consultant, and an inspirational speaker in the country. He is widely regarded as the best corporate trainer in Bangladesh. During his about 15 years tenure at Coats, he took Coats Bangladesh and Sri Lanka's supply chain practices to a new level by thriving in every role, which eventually saw him become supply chain director in just a decade. He also contributed to two national organizations as COO/CEO, before starting his own training and consultancy venture called "Mind Mapper". Mr. Ejazur Rahman is also the CEO of ISCEA Asia and together with a good number of corporate leaders he has trained over 7,000 supply chain professionals in CSCM, CPLM, CSCA, PGDSCM, and PGDASC programs under the ISCEA banner.



TSCS: STARTING FROM A FRESH MANAGEMENT TRAINEE AT COATS BANGLADESH TO BECOMING THE MOST SOUGHT CORPORATE TRAINER IN BANGLADESH, HOW HAS THE JOURNEY BEEN FOR YOU?

ER: To me it was not very difficult to transition from one phase of career to another. Primarily for two reasons that I can think of; i) I believed in myself ii) I grew up in a very disciplined family environment and I worked at a great organization – 'Coats.' My family and Coats both helped me grow in an all-rounded way. In the sense, while I was encouraged to achieve life and organizational KPIs, I also was guided to live the family and company values. That made me learn and live strong principles that are supportive of personal, organizational, and social growth.

My parental family and my first organization – 'Coats' taught me the importance and benefits of being honest and fair, being respectful to others, being helpful, being friendly, being kind, having empathy, and most importantly being responsible.

So, I remained sincere with my profession all along and always tried to care for others. Also, all through I mainly focused on possibilities not problems. I believe these three qualities have significantly contributed to the making of today's myself.

TSCS: FOR DECADES, SUPPLY CHAIN HAD BEEN A FAIRLY OVERLOOKED FUNCTION IN BANGLADESH. AT WHAT POINT DID YOU FEEL YOU ARE GOING TO BE A BIG SUCCESS IN THE FIELD OF SUPPLY CHAIN IN BANGLADESH?

ER: Firstly, I never worry much about being successful through achieving a particular milestone. Competing with others was never my life's agenda. I simply tried doing things in the best possible manner. I'd say that I tried to become a better myself all the time.

Secondly, as I grew up in Supply Chain and received global exposure to supply chain management best practices, I always felt excited to do something good in this field. So, towards the end of 2010 when I decided to become a corporate consultant and trainer, I thought of exploring the possibilities of promoting supply chain education and training and creating better resources for the country.

Off course I probably had the mission living inside me from before. In 2009, I worked to introduce the country's first Supply Chain major in the MBA program at East Delta University. That was the right beginning of a new era in Bangladesh.

TSCS: DURING YOUR PERIOD AT COATS, YOU WORKED AS THE HEAD OF THE SUPPLY CHAIN IN SRI LANKA FOR FOUR YEARS. WHAT WAS THE EXPERIENCE LIKE? HOW DIFFERENT DO YOU THINK SRI LANKA'S SUPPLY CHAIN CHALLENGES ARE COMPARED TO BANGLADESH'S?

ER: I had a remarkable experience in Sri Lanka, being among the first Asians to hold a division head role there. The cultural contrast was notable. Coats Sri Lanka had been established for 25 years, whereas Coats Bangladesh was only 14 years old. As part of Coats Sri Lanka's management committee, I initially reported to Managing Director Graham Brownlie, a proponent of personal excellence. Later, I reported to Kevin Finn, both of whom shaped my growth professionally and personally despite their distinct leadership approaches.

Coats Sri Lanka stood out as the most profitable unit globally within the Coats group. Its well-established brand and market leadership mirrored other Coats branches worldwide. Unlike Bangladesh, Sri Lanka employed unique marketing and sales strategies. Initially, I found their processes to be over-engineered, a contrast to Bangladesh's value-conscious market. Eventually, I learned that Coats Sri Lanka could command premium prices due to their exceptional customer satisfaction, unlike Bangladesh, which was price-sensitive.

Despite similar revenue levels, Sri Lanka's volume was surprisingly lower than Bangladesh's. During my tenure at Coats Sri Lanka, I introduced a Customer Service Policy and implemented a shared Supply Chain KPI system, addressing previous supply chain deficiencies. I navigated the challenging SAP implementation and streamlined inventory through better policies, reducing costs and improving service delivery. This transformation earned us recognition from the Coats group and significantly enhanced working capital management.

Over four years, I fostered strong relationships with colleagues across functions, enabling collaborative success even among seemingly competing areas. About 6 months after leaving Coats Sri Lanka, Kevin Finn, who was a very demanding leader, sent me a special thank you note mentioning that all the good work I did were paying off heavily in the Sri Lankan business. I guess that was the highlight of my time at Coats Sri Lanka.

TSCS: AFTER YOUR TENURE AT COATS, YOU HAVE WORKED FOR RENOWNED NATIONAL ORGANIZATIONS AS COO/CEO. STRATEGICALLY FROM THE BUSINESS PERSPECTIVE, WHAT WERE THE MAJOR DIFFERENCES BETWEEN MULTINATIONAL ORGANIZATIONS AND NATIONAL ORGANIZATIONS IN BANGLADESH?

ER: After Coats, I led two national companies and in both cases, my supervisor was the Owner/Managing Director. The two organizations were Sanmar and Haque Group of Industries. I always wanted national organizations to grow and achieve greater success. So, I joined these organizations to help them establish best practices and achieve a sustainable future.

Compared with the top multinationals, most of our national organizations have a lot of room for improvement. Establishing the right processes and optimizing them, implementing a continuous improvement culture, ensuring ethical business practices, creating a culture of trust, encouraging leadership, and creating a learning organization are a few examples of where national organizations can improve significantly.

TSCS: WHAT ARE SOME OF THE MOST IMPORTANT QUALITIES A SUCCESSFUL CEO NEEDS TO HAVE?

ER: When considering CEOs, two types emerge: owner CEOs and professional employee CEOs.

Owner CEOs function as entrepreneurs, recognizing they can't possess every skill. Thus, they need to hire experts in various fields to handle areas like Finance, Marketing, or Operations while they focus on expansion and innovation.

Successful professional CEOs display traits like optimism, accountability, loyalty, trustworthiness, critical thinking, confidence, inspiration, passion, and curiosity. These qualities cultivate a thriving environment where employees align with values, feel purposeful, safe, and rewarded.

In essence, a CEO's role involves cultivating a motivating atmosphere, aligning with the company's vision, and facilitating collaboration among employees. While not necessarily the best performer, the CEO sets the rhythm and ensures everyone works harmoniously, fostering security, acceptance, and contentment.

TSCS: WOULD YOU SHARE WITH US THE TOUGHEST PROFESSIONAL DECISION YOU HAVE EVER HAD TO MAKE?

ER: The toughest professional decision for me was to leave the corporate world for my training and consulting profession. Because when I left my corporate life as an employee, I was at the peak of my reputation and earning. But I somehow felt something was missing from the feeling of fulfillment. I asked myself the question, "Do I love what I do?" Surprisingly I repetitively got the answer, "No!" Suddenly, I found this revolutionary self-discovery, "I have always loved to teach!" By that time, unknowingly, I already had 8 years of teaching experience at IBA, BUET, DU, NSU, and even at several universities in Sri Lanka during my time at Coats. Another important thing that motivated me was, everywhere I taught, after every class people always said that they had a great class. So, I wanted to try with conviction. And that's how Mind Mapper was born.

TSCS: YOU HAVE REVOLUTIONIZED BANGLADESH'S CORPORATE TRAINING, MORE SPECIFICALLY SUPPLY CHAIN TRAINING. HOW DID YOU DO IT? WHAT MOTIVATION WORKED BEHIND IT?

ER: My corporate journey holds unique significance. Within my 15-year tenure at Coats, 10 years were devoted to strategic roles, setting me apart from industry norms. International projects and attachments took me across various Coats-operating countries, fueling the realization that the supply chain holds the future's key. This insight fueled my aspiration to reshape and popularize our nation's supply chain industry, solidified by earning the CSCM certification from ISCEA.

My unwavering passion drives me. While many struggle for career fulfillment in their 30s, 40s, or 50s, I find daily fulfillment. Engaging in physically intensive training, I accumulate 10,000 to 16,000 steps during day-long sessions, despite being over 50. Physical fatigue contrasts with my unwavering mental readiness, fueled by eagerness from the learners. The anticipation of a receptive audience inspires and propels me, guided by the mantra "Growing by Giving." This ethos defines my life, ensuring meaningful contributions. The demand for my training arises from the relevance, practicality, and authenticity I bring. This sentiment has positioned me as the most demanded corporate trainer in the nation.



TSCS: IN YOUR SESSIONS, YOU OFTEN MENTION TONY ROBBINS AS ONE OF YOUR INFLUENCERS. WHAT UNIQUE QUALITIES DO YOU THINK SET HIM APART FROM THE OTHER WORLD-CLASS TRAINERS?

ER: The primary principle of an authentic trainer is the dedication to giving. Whether in marketing, training, or any endeavor, the act of giving attracts recognition globally. A skilled trainer not only motivates but also inspires and engages participants toward meaningful actions. Tony Robbins embodies this approach.

What I like about Tony Robbins is that he is a strategist. He identifies six fundamental psychological needs driving human behavior: connection, significance, certainty, variety, growth, and contribution. His training offers actionable strategies intertwined with these needs. The core message is, "Your decisions, not circumstances, shape your destiny."

I've attended multiple sessions of his unique training style. In his four-day sessions, sitting for more than 10 minutes is not allowed. Picture a dynamic environment with large LED screens, vibrant music, and thousands dancing. His methods are distinct. Notably, he has coached global figures like Mother Teresa, Bill Clinton, Princess Diana, Serena Williams, Andre Agassi, and Leonardo DiCaprio.

Since 2019 I have been the only inner circle member in Bangladesh for his promoter organization, Success Resources.

TSCS: YOU HAVE HAD A GLORIOUS PROFESSIONAL LIFE. WHAT IS THE BEST LEARNING YOU EVER HAD?

ER: The best learning of life is, no matter what the situation is in life you need to remain true to yourself. Because if the situation pushes you to alter your true self, you probably have challenges with your core values in life.

And the childhood learning, 'Honesty is the Best Policy' actually has worked for me and so I embedded the same in me in the best possible way I can. For me, being honest and fair always worked as the right option in any situation. Another thing about honesty is, when you are honest, no matter how deprived you are, you always feel the strength inside of you.

TSCS: WE WOULD LIKE TO KNOW THE TOP THREE THINGS YOU LEARNED DURING THE PANDEMIC PERIOD.

ER: During difficult times like the pandemic, people become skeptical. But I actually have some interesting learning.

Firstly, I re-learned that we should not focus on the problems, we should always focus on the possibilities. When everyone focuses on the uncertainty and you focus more on the possibilities, then you excel. Mind Mapper bagged the highest number of participants in different training and certification programs in the year 2020. I firmly believe in the equation of Focus = Feelings = Life.

Secondly, Sticking together is the key. When bad times come you always need to stick with your family and your colleagues and your organization. My company Mind Mapper stood by all of its members. We didn't get rid of anyone in such a difficult time. Finally, whenever there is a crisis. You have the opportunity to do more and give more to your family and your society. You should also go the extra mile for them during the crisis time. I believe giving is the easiest way to create a legacy!

TSCS: IF YOU HAD TO GIVE THREE PIECES OF ADVICE TO YOUR YOUNGER SELF, WHAT WOULD THOSE BE?

ER: Speaking of my younger self, I have to talk about the impacts my father had on my life. He was my best friend. He was a very disciplined officer of Bangladesh Navy, but very friendly and easy-going in his personal life. He always advised his family members not to deprive themselves of other peoples' blessings. In this one piece of advice, many other pieces followed which helped me to avoid mistakes and become successful in life.

Three pieces of advice to my younger self would include-

Firstly, selecting the association very carefully. Being optimistic is great and it brings one success. But being prudent is better. A good relationship is critical to a fulfilling life.

Secondly, being too good and being completely selfless hurts. Make time for yourself, reflect on your life, and look after yourself.

Finally, manage your finance. Although I have been a bad money manager for myself. I have no regrets about that. But I believe managing money a little better could have been useful.



TSCS: WE WOULD LIKE TO KNOW ABOUT YOUR GREATEST ACHIEVEMENT.

ER: My greatest achievement is in work-in-progress, which is to become a good human being. For me everything else is social. At the time of leaving this world, if I feel fulfilled because I have been a good human, that will be my greatest achievement.

Thinking differently, if I were to feel very good about a few of my achievements so far, then the list will be as follows:

- Unconditional love and care from my family
- Priceless respect and love from the people I served
- Creating a supply chain learning revolution in Bangladesh
- Creating a standard for Bangladesh's learning and development industry
- Blessings by the Almighty to touch hundreds of lives with my work and worth

TSCS: WHAT ARE THE BIGGEST CHALLENGES THAT SUPPLY CHAIN PROFESSIONALS FACE NOWADAYS?

ER: Supply chain management is full of challenges all the time. In my view, supply chain professionals are the best troubleshooters in an organization and in the world.

Anyone embracing the true supply chain philosophy would agree with me that collaboration is the biggest stake of the modern supply chain. Key big challenges our supply chain professionals are facing nowadays include supply volatility due to the pandemic and geo-political issues, fund management, exchange rate fluctuation, foreign currency crisis, increasing freight prices, digital transformation and integration, changing consumer behavior, and national political turmoil.

TSCS: SEVERAL BANGLADESHI UNIVERSITIES ARE CURRENTLY OFFERING SUPPLY CHAIN MANAGEMENT MAJORS PREDOMINANTLY IN THE BBA AND MBA PROGRAMS. DO YOU THINK THE COURSE CONTENTS AND THE FACULTIES WISE HAVE ENOUGH QUALITY TO PRODUCE FUTURE-PROOF SUPPLY CHAIN PROFESSIONALS?

ER: I highly appreciate this initiative. I think for the last few years it has been a move in the right direction. Future supply chain youngsters are getting some opportunities to explore the world of supply chains. It's a new teaching experience for the teachers as well. However, I think the industry-academia collaboration has a lot of room for improvement. We need to make it a priority now. And also Supply Chain is always evolving, so the course content needs to be upgraded accordingly to keep up with modern supply chain challenges and practices.

TSCS: FROM THE GET-GO, YOU HAVE BEEN A GREAT SUPPORTER OF OUR MAGAZINE "THE SUPPLY CHAIN STREET". WHAT THING HAS IMPRESSED YOU THE MOST ABOUT "THE SUPPLY CHAIN STREET"? ALSO, SHARE WITH US YOUR THOUGHTS AND EXPECTATIONS FROM "THE SUPPLY CHAIN STREET" IN THE FUTURE.

ER: I'm most impressed with the passion and focus of people who put their efforts together and publish "The Supply Chain Street."

I see that, with time this magazine has been maturing and it created newer expectations and confidence among its readers. It would continue to grow and flourish further as it remains focused on its core purpose. So long as the magazine continues to bring more benefits for its readers and other stakeholders, it would continue to achieve more success.

I believe through more collaboration with other supply chain bodies, forums, and relevant stakeholders, "The Supply Chain Street" can become a most sought supply chain magazine in the years ahead.

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BUILDING & MANAGING SUPPLIER PANEL IN SOURCING EXCELLENCE



STRATEGIC SOURCING

process involves determining procurement categories and setting a clear strategy for each category. A spend analysis per category may also be conducted at this point. It is about building and managing a dynamic and performative panel of suppliers in a sustainable way to answer the need of the organization in the short, mid and long-term perspective.

The key is to ensure the right number of suppliers, and the right suppliers in the panel. Each supplier must have a unique role to play. The relationship management with each supplier need to be different according to their role in the panel to ensure expected result.

CATEGORIES & CATEGORY STRATEGY

A category in terms of sourcing is a group of purchased goods or services and the suppliers that provide them. The organization should create categories that are relevant to the management of suppliers and the overall spending on purchasing. The categories themselves are also classified in several ways, including by total spend or number of suppliers. A portfolio analysis can also be used, which results in four general item categories: bottleneck, core competency, leverage, and commodity. Supplier segmentation is also used to determine how much each supplier depends on the company's business within a particular category. When deciding whether suppliers should be segmented as transactional, preferred, strategic, or owned, inputs such as the type of category and the information on relative leverage with the supplier are taken into consideration.

STRATEGIC IMPORTANCE & RELATED FACTORS

To conduct portfolio analysis, strategic importance and other product or service factors need to be determined. Strategic importance depends on cost, quality, delivery on time, delivery reliability, precision, elasticity, & flexibility. Cost speaks for itself but cost and quality often are inversely proportional. Quality and delivery are usually measure by number of defects or late orders or failed commitments and are often collectively rated by numbers of exchange using supplier history.

Precision is measured as degree of variance from specifications. Small variances in components from different vendors may prevent assembly. Flexibility is the ability of the supplier or manufacturer to deliver in varying quantities when given a specific number of days' notice. These criteria are strongly influenced by several factors related to the product or service: product factors of strategic importance and complexity and availability factors of the number of suppliers and supply uncertainty.

• STRATEGIC IMPORTANCE

The primary sourcing consideration is the strategic importance of the product or service. If the company cannot afford to make mistakes, it should produce the item in-house, even if this is more expensive. If the company lacks internal capability, it should form an alliance with one or more companies that can make the item or perform the service. Multiple sources provide a backup. Commodity products, by contrast, are widely available, have little strategic importance, and can be purchased at the lowest available price. This includes modular products and overhead items such as electricity.

• COMPLEXITY

The next factor is the complexity of the item and the steps required to produce it. Strategic alliances may be needed for complex items simply because of the level of collaborative planning needed to get the item right and within the necessary time frame. Examples include military technologies such as missiles. Many contractors may need to form strategic alliances to get all the components to work together and to provide the appropriate level of security. Airplanes also require alliances for many major systems, although minor systems can be sourced through lower-level relationships.

• NUMBER OF SUPPLIERS

The number of suppliers available for a product or service can determine how much the company should escalate the relationship. When one or very few suppliers are available to produce a required component, the company may need to form a strategic relationship to guarantee continued availability of the item. For example, Canon is one of the producers of high-quality engines suitable for use in laser printers, so Hewlett Packard has a strategic

alliance with them for this part even though both compete on printer sales directly. Focusing only on price or time to market with such a supplier would be a mistake.

• UNCERTAINTY

Finally supply uncertainty is the risk that the good or service may not be available or may have strong fluctuations in price or quality. Even if there are hundreds of suppliers of finished lumber on the market, there may be great variability in quality and in precision of milling. If a manufacturer that uses this lumber advertises its superior quality of lumber as selling point, then one shouldn't simply buy from the lowest-price supplier but should develop a partnership with one or more suppliers who can meet these stipulated levels of quality.

WAYS TO MANAGE A SUPPLIER PANEL

A supplier panel is a group of suppliers for a given perimeter. In this group of suppliers, some enter and some leave. Supplier panels are dynamic and change according to strategies, performances, and industrial contexts. Managing a supplier panel isn't a mathematical formula, it's more the art of management and leadership. But there are tactics and strategies to apply in building & managing supplier panel in **SOURCING EXCELLENCE**.



CASE - 01



The business is **STABLE**, and performances are **GOOD**. The supplier panel is **OK** to face tomorrow onwards context and increasing demands.

MAINTAIN !!!

If the supplier panel does a great job and if the business and risk management is **OK**, there is no reason to change the supplier panel.

CASE - 02



The supplier panel is delivering **GREAT PERFORMANCE** but few causing **TROUBLES**. The overall production capacity is **ENOUGH** to meet the demands.

KEEP THE SIZE, CHANGE THE MIX !!!

A supplier panel is dynamic, some enters and some leaves. The size of the supplier panel is important so is having the right Suppliers! Changing the repartition of activity within the panel often improves performance.

CASE - 03



Business **GROWS** a lot and the current panel of supplier is **UNABLE** to follow the demands.

INCREASE !!!

Increasing the supplier panel size is an important decision as it affects the operating costs. More suppliers lead to the need of having more resources into the company. The reasons for increasing the panel can be many, including growth, risk, competition etc.

CASE - 04



Business **GROWS** a lot. There are **TOO MANY** suppliers in the panel, making the business repartition **DIFFICULT**. Can't make anyone happy and there are small turnovers with some suppliers. The overall suppliers' performances are **NOT GOOD** enough to start a consolidation process; there is need for all the suppliers.

EXPAND THEN REDUCE !!!

The current suppliers are so inadequate that it is impossible to rely more heavily on them. So first introduce new suppliers to identify the best ones before cutting off the poor performers. It has to be ensured that introducing a new supplier will not bring another new problem. New suppliers must prove themselves, so need to add them to the panel to allow more choices for future supplier reduction. Consider it as a 2-step approach!

CASE - 05



The business **GROWS** a lot and there is a panel of **HIGHLY PERFORMING** and **ATTRACTIVE** suppliers. The intention is to engage in deeper relationship with the best suppliers.

REDUCE !!!

This option works best when there are already enough qualified suppliers. Just need to consolidate the panel with the existing best-in class suppliers.

Building the supplier panel is a continuous process. We always need to look who are the new players available in the market and can any of them could be a better fit with the sourcing strategy of the company. The panel of the suppliers should consist of the best suitable supplier at any point of time.

PORTFOLIO ANALYSIS

A portfolio analysis is a tool that can be used to segment sourcing into four categories so that the appropriate level of management attention and resources can be applied to the sourcing and procurement processes. If a partnership requires more than one of the intense collaboration levels noted above—for example, when a material is critical to the product's quality or there is uncertainty about an item's availability – then the need for higher collaborative intensity can be termed as “**HIGH STRATEGIC IMPORTANCE**”. Strategic importance can be considered one half of the overall equation. Difficulty, which includes the supply chain challenges of complexity, number of suppliers, and uncertainty, is the other portion of the equation.

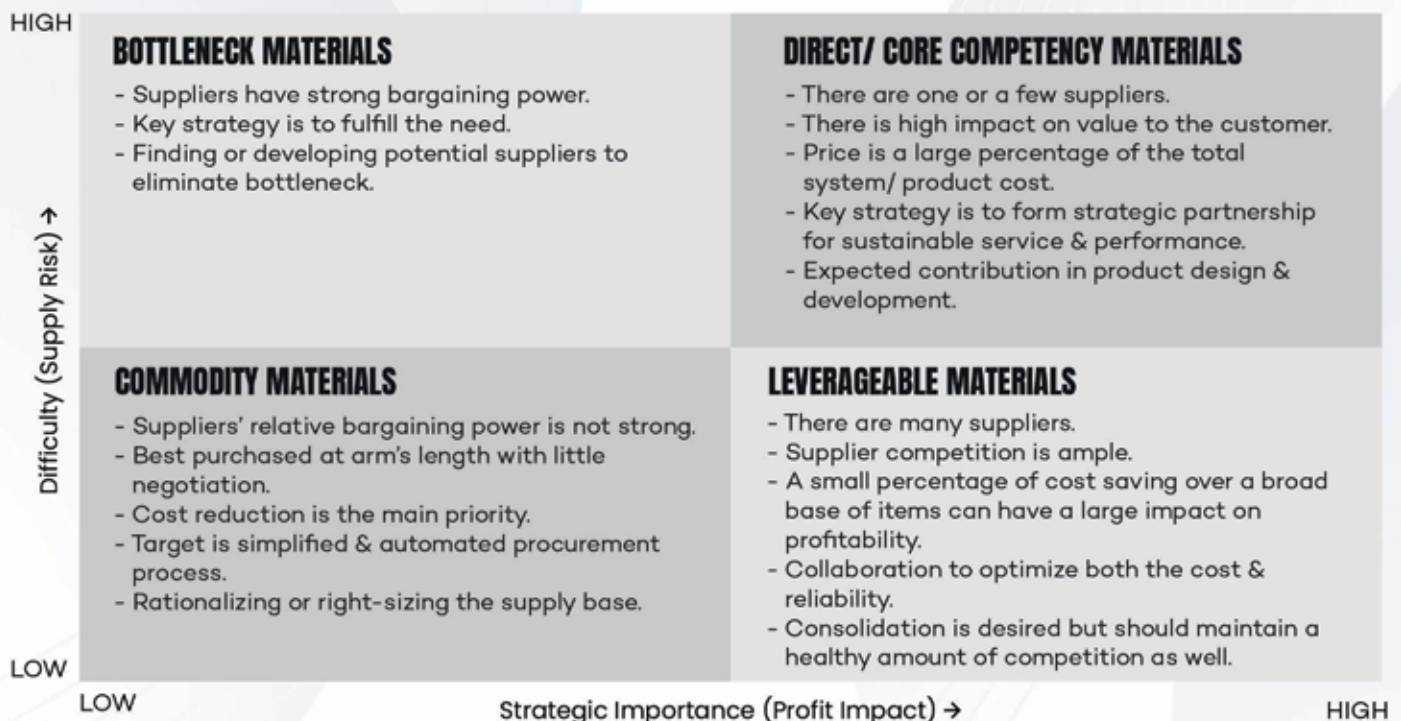


Fig-1: How a portfolio analysis creates four basic categories of goods.

SEGMENTED SOURCING STRATEGY

Treating some sourcing relationships as strategic priorities and sourcing all over the globe have increased the complexity of purchasing. From the purchasing organization's perspective, what were once routinely one-time transactions may now be recurring relationships that must be **PLANNED, MONITORED, and MEASURED** for their impact on business goals. The best supplier may not be the one that offers the lowest price but rather the one that can collaborate with the purchaser to achieve multiple interrelated business goals while still offering a desirable total cost of ownership. A segmented sourcing strategy creates a set of segments for suppliers. A supplier in each category can be in a **TRANSACTIONAL, PREFERRED, STRATEGIC** or **OWNERSHIP** segment.

HOW MUCH DOES THE SUPPLIER NEED YOU?

In addition to determine how much you need a particular type of supplier base on product portfolio classifications of commodity, leverageable, bottleneck, and core competency, it is also important to determine how much each specific supplier in each category needs the organization as a customer. This is determined by two factors:

- **Alignment of your purchases with their strategy**

If your purchases are the core thing the supplier sells and wants to sell in the future, you are more important. Other clues include suppliers offering new products or technologies or being responsive to your changing requirements.

- **Percentage of the supplier's business**

A customer is considered more important if they represent at least five to ten percent of the supplier's business. Related factors include the profit margins from sales, if multiple supplier then working locations with the organization, if the goods in multiple sourcing categories, or if they are small and need to highlight the customer's business in their marketing materials.

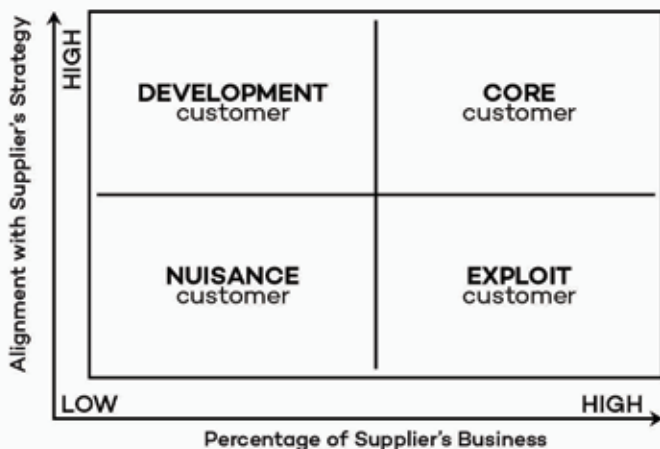


Fig-2: Customer Desirability Matrix.

If you are aligned well with a supplier's strategy and have a large share of their business, then you are a core customer. The supplier will make investment to keep you. If the opposite is true for both perspectives, you are a nuisance customer. The supplier will not make investments, and you may be ignored. When your account is attractive to the supplier, but you do little business with them, you are a development customer. The supplier will work to increase their business with you. Finally, if you are not attractive to the supplier but do a lot of business with them, you are an exploit customer. This type of supplier may raise prices or cut services since you are not part of their long-term plans.

There should be balanced dependency between the buyer & supplier in sustainable sourcing. The sourcing performance is driven by how the suppliers are performing and our way of management will create the difference.

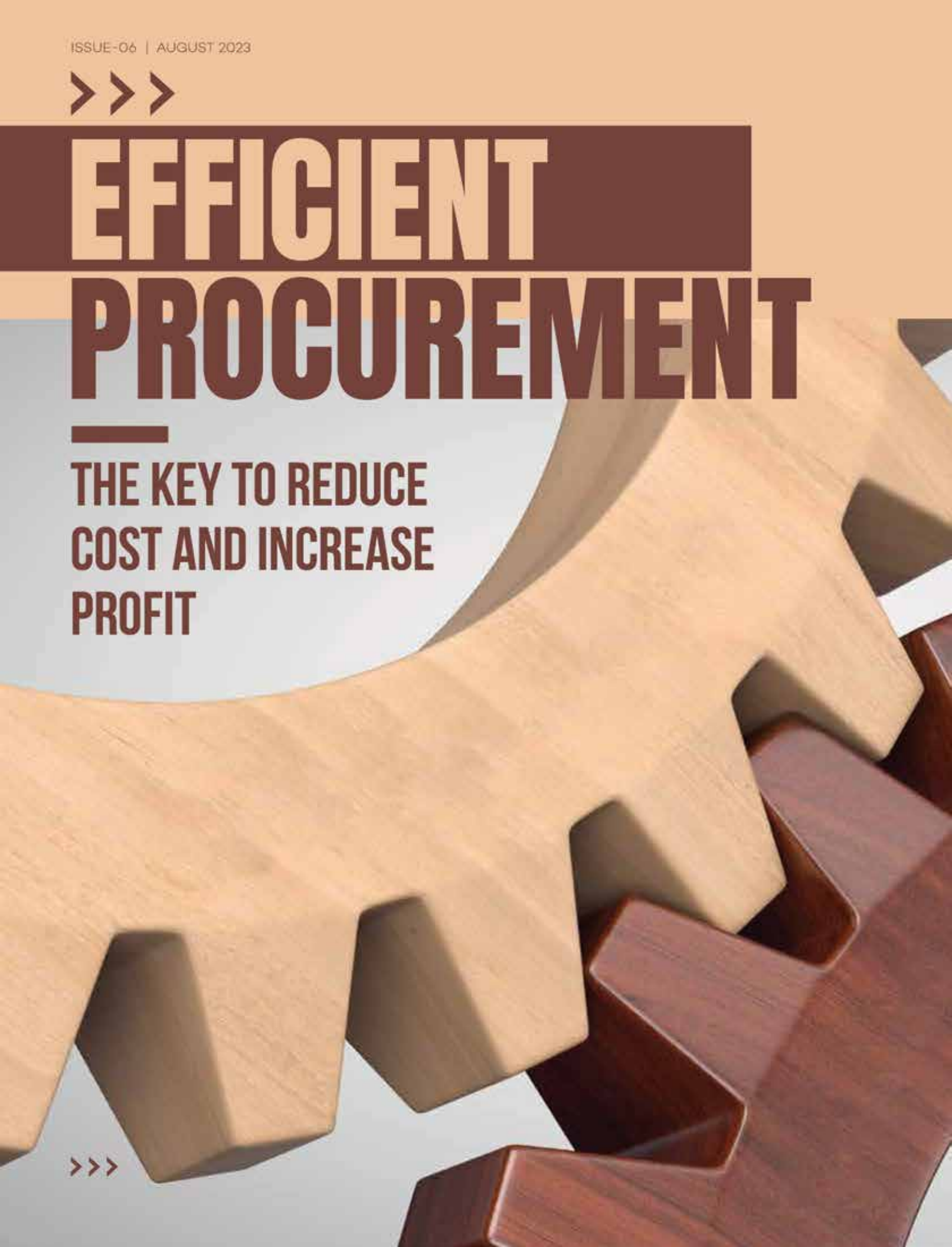
We don't need the best suppliers in the panel but the right fitted suppliers.





EFFICIENT PROCUREMENT

**THE KEY TO REDUCE
COST AND INCREASE
PROFIT**





Before we go into details of the topic, let us understand what is procurement? Procurement involves the process of selecting vendors or suppliers, establishing the different payment terms, strategic vetting of the different options, selecting suppliers to choose from, negotiating contracts and finally actual purchasing the goods. Further, it is also concerned with procuring all of the goods and services that are vital to an organization.

FUNCTIONS OF A PROCUREMENT TEAM

- Finding suppliers
- Getting quotes
- Negotiating prices and terms
- Putting contracts in place
- Placing purchase orders
- Managing day to day issues
- Supplier's relationship management
- Forecasting and planning capabilities
- Process improvement activities
- Cash cycle measurement
- Intelligence related to what is going on in the marketplace, with suppliers and competitors

In the procurement process of any organization, suppliers are an intrinsic part of the supply chain. It does not matter what business the organization is in or what products it makes, distributes or sells. It is very important to work together with the suppliers for a successful outcome of the organization.

There should always be a win-win strategy between suppliers and the procurement team of the company. A "supplier collaboration" approach by the procurement team of a company can be a winning tip. The focus needs to be on two-way communication and not just the procurement team ordering their requirements and pressing the suppliers for cut-throat prices for a one-sided win. A one-sided win in a business will never be a successful one.



Sometimes it may happen that the supplier is bigger than your company. The supplier has a strong position in the bargaining process between you and him. This can happen because of the sophistication of the items that the supplier is supplying in your production process.

Let me share with you a practical experience of mine. I was working in China in a LED TV manufacturing company. In the assembling of the LED TV, the most sophisticated component is the black front screen where we see the pictures, the LED panel. The companies that used to make the LED panel were limited in numbers. We used to buy the LED screen from Samsung company. So, in here Samsung was way bigger than our company both in size and cash flow.

So, when the supplier has an upper hand over your company in the bargaining process how do you deal with the situation? Below is the list of ways you can defend your position:

- **Building a Good Relationship:** Having a strong, positive relationship is absolutely essential. A great relationship will get you through, and over, a lot of problems. A poor relationship will only aggravate and deepen any problems. Spending the time to meet with suppliers after work hours for dinner or a coffee can be a great chance to build personal, but professional, relationships. It can give you, and the Supplier, a chance to know each other and establish a bond. People like doing business with people they know.
- **Not Getting Intimidated:** If you are lacking in confidence, being unduly deferential, or showing signs of nervousness or poor body language your suppliers will seize on that and this will further strengthen their position.

■ **Being Prepared:** Do your homework in every respect before entering negotiations with a supplier. You should understand every aspect of your requirements, your supplier's situation, benchmarks, industry trends, and more. You should have detailed analyses on hand whether that be for pricing, product characteristics, or terms and conditions.

■ **Focusing on Facts, Performance and Objectivity:** When dealing with the Supplier, it is always best to be objective and focus on facts and performance in your conversation.

■ **Always Looking for Alternative Suppliers:** If your Supplier is sole sourced there may come a time when some other company has developed materials that can be used as substitutes.

In any company or industry that sell products, the cost of the raw materials and components is often the single largest expense. In most cases, we can see there is a great level of planning applied before purchase orders are placed. But sometimes, buying decisions are made subjectively with very little focus. It is very important to have a well-researched, articulated and vetted strategy for every group of materials and commodities that the company purchases.

There are many factors we can see that affect the cost of acquiring goods from within the country or from abroad. At present time in our country, Bangladesh, the inflation rate has gone really high with all the raw materials costs sky rocketing. Further, there is a shortage of dollars in the bank with a high exchange rate. Companies cannot import sufficiently. So, it is very important to bring the highest efficiency with limited resources from the procurement team.

Many times, we can see the company's management pressing the procurement team to reduce the overall cost of procuring the products. So, the procurement team need to make the decisions strategically, focusing on all the factors that can affect the price of the input materials.

Besides doing the basic functions of the procurement team which are, finding suppliers, getting quotes, negotiating prices and terms, putting contracts in place, placing purchase orders, and managing day-to-day issues. They should also focus highly on supplier relationship management, forecasting and

planning capabilities, spend aggregation and controls, process improvement activities, cash cycle measurement and intelligence related to what is going on in the marketplace, with suppliers and competitors, and in the economy in general.

A procurement manager reaches companies and industries all over the world. He or she has access to, and the ability to manage, the resources of all of these external parties. A procurement manager can bring out the best negotiations with supplier parties to place a win-win situation on the table.

Finally, as a procurement manager, it is very important that you be honest and true to your work and don't deviate to the dark side. I have seen one of my ex-colleagues get fired. He was responsible for negotiating with the packaging suppliers. As it turns out he was taking table money. When that was discovered and verified, he was summarily dismissed.

Last but not the least, it is never worth compromising your morals, ethics, integrity, or your future in dealing with suppliers for your company's procurement process. A procurement team has a high stake in the company for the success and growth of the company.



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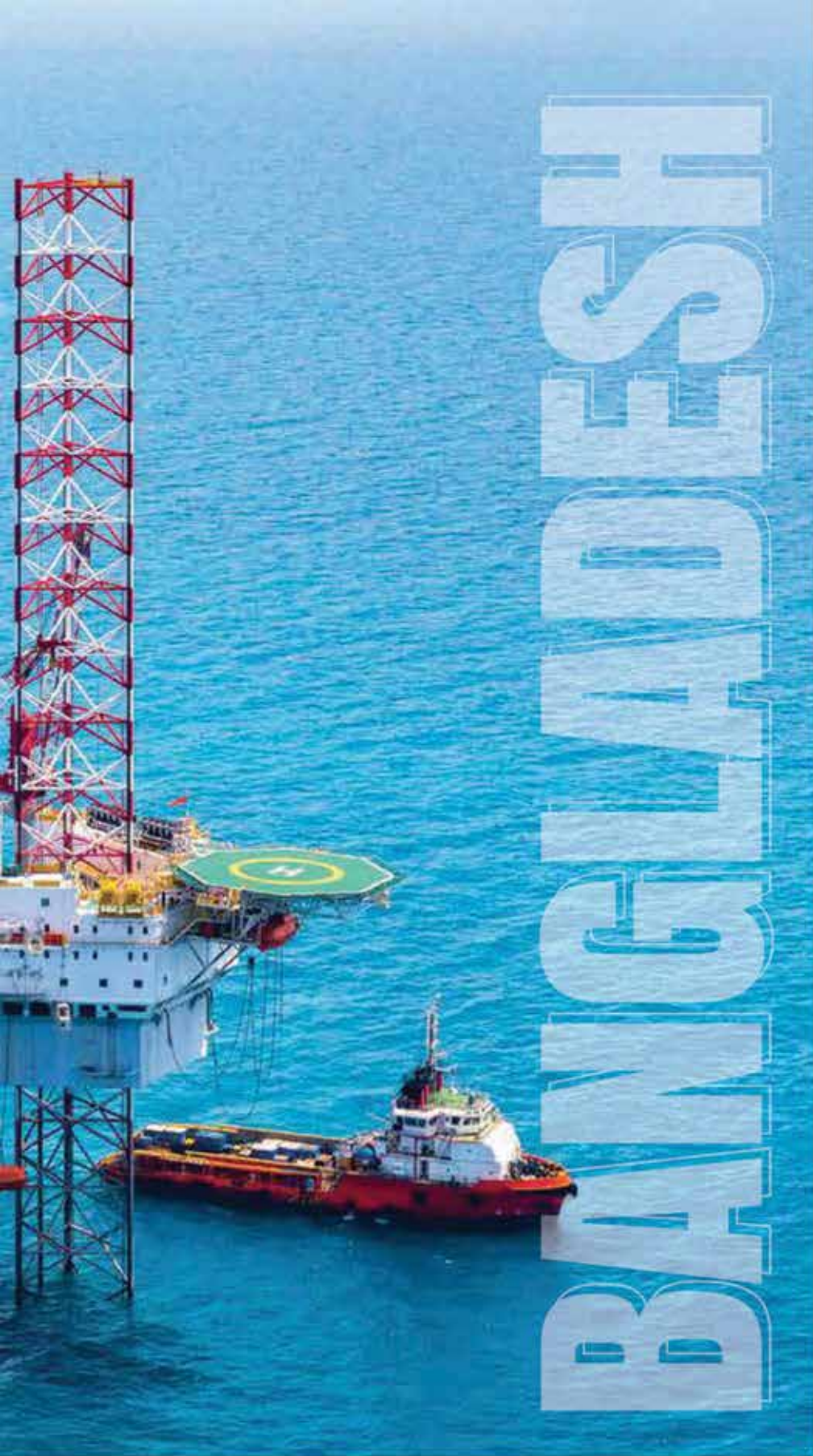
LPG

INDUSTRY OF BANGLADESH

A SUPPLY CHAIN CHALLENGE

LPG stands for Liquefied Petroleum Gas. It is a flammable hydrocarbon gas mixture that is commonly used as a fuel for various applications. LPG is primarily composed of propane (C_3H_8) and butane (C_4H_{10})

LPG is derived from natural gas processing and petroleum refining. It is produced by refining crude oil or extracting natural gas, followed by processes such as separation, purification, and compression. The resulting gas is then liquefied through pressurization, making it easier to store, transport, and handle.



LPG HAS SEVERAL CHARACTERISTICS THAT MAKE IT A POPULAR FUEL CHOICE

01

HIGH ENERGY CONTENT

LPG has a high energy content per unit volume, making it an efficient fuel for various applications.

02

VERSATILITY

LPG can be used for a wide range of applications, including residential cooking and heating, industrial processes, power generation, transportation (auto gas), and agricultural purposes.

03

CLEAN-BURNING

LPG is a cleaner-burning fuel compared to traditional fuels like coal and wood. It produces lower emissions of greenhouse gases, particulate matter, and sulfur oxides, contributing to improved air quality and reduced environmental impact.

04

CONVENIENT STORAGE AND TRANSPORTATION

LPG is stored and transported in a compressed and liquefied state, allowing for efficient storage and distribution. It can be easily transported in specialized tanks and cylinders.

05

SAFETY MEASURES

LPG has specific safety considerations due to its flammable nature. Safety measures, such as proper handling, storage, and ventilation, are essential to ensure its safe use.

BANGLADESH MARKET OVERVIEW

Growth of the LPG industry in Bangladesh started in 2008. That year, when the government stopped providing new connections of natural gas to households and various industries, state-owned and several private companies started importing LPG to meet the growing demand for gas in the country's residential and industrial sectors.

According to LPG facility providers, in 2019, the Bangladesh government had given licenses to 53 companies to operate in the LPG industry.

Currently, a total of 30 companies are operating in the LPG market of Bangladesh. They all have terminals either in Chittagong or Mongla. Few companies

The market size of the LPG industry in Bangladesh is \$3.2 billion. However, more than 98 percent of this industry is dependent on imports.

Geographical locations of terminals of LPG companies operating in Bangladesh. All the companies main terminals located either in Mongla or Chittagong, or at both port areas. Since both of these locations are port areas, for easy voyage movement, organizations chose these locations.



LPG SUPPLY CHAIN OPERATIONS

The LPG (liquefied petroleum gas) supply chain in Bangladesh involves various stages and stakeholders. Key components of the LPG supply chain in the country

- **LPG Production:** Bangladesh imports the majority of its LPG from international suppliers. LPG is primarily derived from natural gas processing or crude oil refining. The production of LPG occurs in other countries and is transported to Bangladesh through shipping vessels.
- **Importers and Suppliers:** Importers play a crucial role in the LPG supply chain in Bangladesh. They are responsible for procuring LPG from international sources and ensuring its availability in the domestic market. These importers often work with local suppliers who distribute LPG to various downstream stakeholders.



\$3.2
billion USD

- **Storage and Bottling Plants:** LPG importers and suppliers maintain storage facilities and bottling plants in different locations throughout Bangladesh. These plants receive bulk LPG shipments and store them in large tanks. The LPG is then bottled into smaller cylinders for distribution.
- **Distributors and Retailers:** Distributors serve as intermediaries between the suppliers and retailers. They receive bulk shipments of LPG from storage and bottling plants and distribute it to retailers across the country. Distributors may have their own fleets of trucks or engage third-party transporters to ensure timely and efficient delivery.
- **Retail Outlets:** Retail outlets are where end consumers purchase LPG cylinders for household or commercial use. These outlets can be independent retailers or affiliated with specific brands. They store and sell LPG cylinders to consumers, often using an exchange system where empty cylinders are replaced with full ones.
- **Transport and Logistics:** The transportation of LPG cylinders from storage facilities to distributors and retailers involves a network of trucks and delivery vehicles. Logistics play a crucial role in ensuring timely deliveries, optimizing routes, and managing inventory levels.
- **Safety and Regulatory Authorities:** The government of Bangladesh has regulatory bodies and safety standards in place to ensure the safe handling, storage, transportation, and use of LPG. These authorities enforce regulations, conduct inspections, and provide guidelines to ensure compliance with safety measures throughout the supply chain.



SUPPLY CHAIN CHALLENGES IN LPG INDUSTRY

The LPG supply chain in Bangladesh faces several challenges that impact the industry's efficiency, safety, and sustainability. Some key challenges in the LPG market of Bangladesh:

- **International Trade Dynamics:** Global factors such as geopolitical tensions, trade policies, and market dynamics can impact the import and export of LPG, affecting supply availability and pricing.
- **Supply and Demand Imbalance:** Balancing LPG supply and demand can be a challenge. Fluctuations in demand, changes in market dynamics, and unexpected disruptions in supply can lead to price volatility and supply shortages.
- **Import Dependence:** Bangladesh relies heavily on imported LPG to meet its domestic demand. Dependence on foreign suppliers makes the market vulnerable to price fluctuations, supply disruptions, and geopolitical risks. Any disruptions in import arrangements, such as delays in shipments or changes in international prices, can impact the availability and affordability of LPG in the local market.
- **Bottlenecks in Distribution Network:** Inefficient distribution networks and logistics can cause delays, product losses, and increased costs. Challenges may include inadequate transportation infrastructure, limited fleet size, and inefficient routing.
- **Safety Concerns:** Safety is a critical issue in the LPG supply chain. Mishandling, improper storage, and inadequate safety measures can lead to accidents, leaks, or explosions, posing risks to personnel, property, and the environment. Ensuring compliance with safety standards and promoting awareness among stakeholders is crucial.
- **Pricing & Subsidy Mechanism:** The pricing of LPG and the mechanisms for providing subsidies can be complex and subject to market fluctuations. Factors such as international market prices, exchange rates, taxes,

and subsidies influence LPG prices. Inconsistent pricing policies, delays in subsidy disbursement, and inadequate monitoring can create uncertainty and affect the affordability of LPG for consumers & market stability.

- **Illegal Market Activities:** The presence of an illegal or informal LPG market can undermine the formal supply chain and create unfair competition. It may involve unauthorized cylinders exchange points, adulteration, unauthorized bottling facilities, and unlicensed retailers. Addressing these activities requires robust enforcement and regulatory measures.
- **Scrapping of Cylinders:** Due to metal price fluctuation in market cylinder scrapping has been skyrocketed in LPG market. Cylinder is the only medium to carry LPG and the more cylinder is going in scrap market, organizations lose more market share.
- **Regulatory Framework:** The LPG industry operates within a framework of regulations and policies that vary from country to country. Unclear or inconsistent regulations, bureaucratic processes, and policy uncertainties can hinder industry growth and investment.
- **Competition from Alternative Fuels:** The LPG industry faces competition from other energy sources, such as natural gas, electricity, and renewable energy. Market dynamics, pricing, and consumer preferences can affect the demand for LPG.
- **Consumer Awareness and Acceptance:** Consumer awareness and acceptance of LPG as a clean and efficient energy source remain relatively low, especially in rural areas. Promoting education campaigns, addressing misconceptions, and providing subsidies or incentives can encourage wider adoption of LPG for cooking and other purposes.

LPG FUTURE IN BANGLADESH

The future of LPG in Bangladesh looks promising, with several factors contributing to its growth and development in the coming years. Some key aspects that indicate a positive future for LPG in Bangladesh:

- **Increasing Energy Demand:** Bangladesh has been experiencing rapid economic growth and urbanization, resulting in an increased demand for energy. LPG is seen as a cleaner and more efficient alternative to traditional fuels like wood and coal. As the demand for energy continues to rise, LPG is expected to play a significant role in meeting the energy needs of households, commercial establishments, and industries.
- **Government Support:** The Bangladeshi government has shown a strong commitment to promoting LPG as a clean cooking fuel. It has implemented policies and initiatives to encourage LPG adoption, such as subsidizing LPG prices, expanding distribution networks, and providing incentives for LPG-related infrastructure development. Continued government support is likely to drive the future growth of the LPG sector.
- **Infrastructure Development:** Bangladesh has been investing in the development of LPG infrastructure, including import terminals, storage facilities, bottling plants, and distribution networks. These infrastructure improvements aim to enhance the efficiency and reliability of the LPG supply chain, ensuring a steady and accessible supply of LPG across the country.
- **Environmental Considerations:** With increasing concerns about air pollution and deforestation caused by traditional fuel sources, there is a growing emphasis on cleaner and sustainable energy options. LPG, being a cleaner-burning fuel, offers environmental benefits by reducing carbon emissions and indoor air pollution. As environmental awareness grows, the demand for LPG as a cleaner fuel source is expected to increase.



- **LPG Auto-gas and Industrial Applications:** Apart from household consumption, the use of LPG in the transportation sector (auto-gas) and industrial applications is gaining traction in Bangladesh. LPG-powered vehicles offer economic and environmental benefits. Additionally, LPG is used in various industries such as textiles, ceramics, hospitality, and food processing. The expanding use of LPG in these sectors presents opportunities for market growth.
- **Technological Advancement:** Technological advancements in LPG storage, handling, and distribution are expected to improve efficiency, safety, and affordability. Innovations in LPG appliances, such as efficient burners and stoves, can enhance the user experience and promote LPG adoption.



While the future of LPG industry in Bangladesh appears promising, challenges mentioned herein can be the burden in the growth of LPG industry. It's important to note that these challenges can vary in their significance and impact depending on the specific country or region. Robust involvement of Industry stakeholders, governments, and regulatory bodies is obligatory to address these hurdles through policy reforms, infrastructure development, safety standards, improved distribution networks, market diversifications, and awareness campaigns to ensure the efficient and sustainable growth of the LPG market in Bangladesh.



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SUPPLIER AS PARTNER

& IMPACT OF SUPPLY CHAIN FINANCE

In contemporary business practices, the supplier has emerged as an integral stakeholder in the sustainable functioning of a company. The achievement of a sustainable Supply Chain necessitates comprehensive coordination among all stakeholders involved in the supply chain, notably the supplier, manufacturer, and customers.

Around 10-11 years back, there was a time when a common theory was that creating more pressure on the supplier would result in more returns.

Modern Supply Chain challenges the old practice, even though some companies still stick to it. However, some local company owners recognize the supply chain's impact on long-term profits, signaling an end to the outdated rope-plucking theory. Our success as a procurement officer relies on suppliers' support. Pressuring them to reduce costs by BDT 1 may result in a loss of support by BDT 5 and negative consequences for the company. Procurement professionals' deliverables questioned cause mental stress.

The contribution of suppliers in fostering the growth and success of a business should not be undervalued. A company's growth relies on the supplier just as much as the supplier relies on our business.

A real example can be given, a new vendor was hired by a reputable domestic retail business when sales were at BDT 8 lac/month. His initial target was BDT 16 lac/month, twice the previous sales. The sale started at BDT 22 lac, increased to BDT 50 lac, and exceeded BDT 1-1.5 crore. Then a senior manager and COO were assigned to manage the vendor. The procurement officer was transferred, and the new management imposed stricter targets and margins. If the vendor's credit term strains business support and predicts further decline. Inevitably, the business will lose profit.



It is beneficial to engage in negotiations with the vendor to obtain the most advantageous pricing and delivery terms while ensuring both parties benefit equally (win-win situation). And the whole process should be transparent as well. This will establish a positive relationship with the vendor to ensure sustained and optimal vendor support, which is vital to the company's future success.

Critical true is when a supplier business becomes big in an organization, I have seen many unfair decisions imposed on him beyond the agreement and he is forced to accept it by bow down for the sake of his business.

Here the crucial issue at hand is how to attain the best possible negotiation outcomes. To address this, we can explore various proven negotiation techniques, and one such method is known as "BATNA."

BATNA is an abbreviation that stands for Best Alternative to a Negotiated Agreement. It is the most advantageous alternative that a negotiating party can take if negotiations fail, and an agreement cannot be made.

BATNA is used in negotiation and should always be considered before a negotiation takes place. The value of knowing the best alternative to a negotiated agreement is that:

IDENTIFYING BATNA

- 1 List out all the strategies to make the negotiation possible.
- 2 Analyze the Best possible Alternative.
- 3 Analyze the cost of the Best Possible Alternative and compare it with the maximum cost of negotiation.
- 4 If the cost of the best possible alternative is lower than the maximum cost of negotiation, then the Best Alternative is said to be BATNA.

ADVANTAGES

- 1 The best Alternative to a Negotiated Agreement is used for cost-effective benefit.
- 2 It focuses on the importance of a backup plan.
- 3 It improves negotiation power.
- 4 BATNA improves analyzing skills.
- 5 It improves the efficiency of Business organizations.

DISADVANTAGES

- 1 It may increase the cost of business, like research and valuation costs.
- 2 It's a time-consuming process.
- 3 BATNA doesn't consider future uncertainties.

This negotiation technic may help to improve the transparency and sustainable relationship between procurement professionals and suppliers. And healthy relationships with suppliers can help organizations to save money as happy and loyal suppliers will be more than willing to extend deals, discounts, and incentives for the organization. It also helps increase company efficiency.

Currently, there is an opportunity to do something new to improve the supplier relationship, which is supply chain finance. A common practice we do is buying on credit from suppliers. This is high time to think about the cost-effectiveness of buying on credit. This is very common in the market that if we buy something on credit, eventually the pricing is higher than the regular price.

BATNA FEATURES

AID IN
 DETERMINING
 THE
 IMPORTANCE
 OF NEGOTIATION

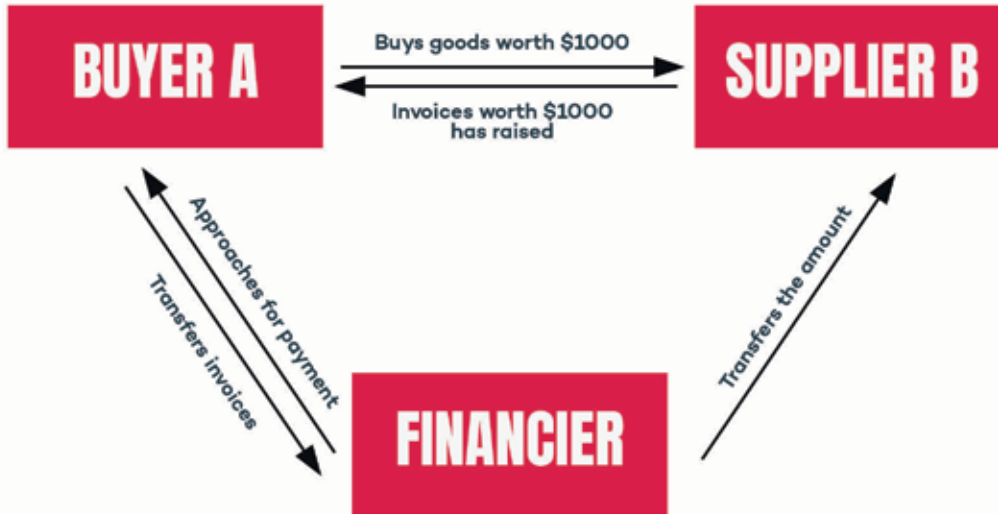
ANALYZE THE
 BEST
 ALTERNATIVE

HELPS TO
 REDUCE THE
 UNAVOIDABLE
 COST

DETERMINES
 THE
 STRATEGIES
 FOR
 NEGOTIATIONS

But recently, a trend of third-party financing is emerging, which I believe can be a major problem solver. In this module any third-party finance company ensures to pay the vendor on time on behalf of the company and the company will get the best support since the vendor has no obligation regarding payments.

SUPPLY CHAIN FINANCE



Nowadays this has been in practice, creating a good partnership among the supplier and organizations.

For example, suppose you are going to buy a product worth BDT 10 lac and there are 2 options to choose from.

Option 1: If the payment is in cash, then a 5% discount will be given on BDT 10 lac.

Option 2: If the payment is on 1-month credit, then there will be no discount.

Here, in the 1st option you will pay BDT 9,50,000 and in the 2nd option BDT 10,00,000, means if you choose the 1st option then the cost will be reduced by BDT 50,000 and if you choose the 2nd option then BDT 10,00,000 will allow you to invest in your company for 1 month and in return you will get BDT 80,000 as an interest with an average rate of 8%. BDT 30,000 extra income in the option 2 but in return the product delivery, and support service from the supplier will be in question, which will hamper the operational activities of the organization. If we let go of the BDT 30,000 extra income, the scenario will be quite the opposite resulting in superior service, quality, and timely delivery as well as healthy business relationships with the supplier.

Thus, Supply chain finance has the potential to significantly facilitate the formation of profitable business prospects between purchasers and vendors. It is imperative to recognize the significance of cultivating equitable partnerships with suppliers, as they play a crucial role in the development of the company as an integral part.



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"শুক পাওয়ায়,
পরিষ্কারের আসল পাওয়ায়"



STREAMLINING INVENTORY MANAGEMENT WITH ARTIFICIAL INTELLIGENCE (AI)

THINK OF YOUR FAVORITE SHOP!

Whether it's a local fashion house or a large superstore, ask yourself a couple of questions:

1. Are they consistently having the products in stock that you desire?
2. Do they have goods both in the store and online? If the answers are positive, most likely they have good control over their inventory management.

WHAT IS INVENTORY MANAGEMENT?

Inventory management, a vital aspect of supply chain management, involves tracking stock levels and the movement of goods, from raw materials reaching manufacturers to fulfilling orders for finished products. Efficient inventory management is the cornerstone of long-term success, helping businesses minimize costs, optimize cash flow, and boost profitability. Without proper inventory management, businesses risk encountering a range of issues, including mis-shipments, shortages, spoilage (for perishable items), overstocks, and mis-picks.



THE IMPORTANCE OF ARTIFICIAL INTELLIGENCE (AI) IN BUSINESS OPERATIONS

In the era of globalization, technology, and empowered consumers, businesses are embracing artificial intelligence (AI) to revolutionize inventory management. By leveraging AI-driven technologies, supply chain operators gain valuable insights to enhance performance, anticipate logistics anomalies, and identify areas where automation can provide significant scale advantages.

ARTIFICIAL INTELLIGENCE (AI)'S OPTIMIZATION OF INVENTORY MANAGEMENT

Let's explore how AI optimizes inventory management in three key areas:

Planning Inventory Replenishment

Predicting demand is often more challenging than forecasting supply. AI-driven data analysis plays a critical role in predicting allocation by considering historical supply and demand data, which contain uncertainties and anomalies. AI-powered inventory management solutions delve into customer behavior patterns to analyze fulfillment choices and shopping behaviors, ultimately improving store inventory levels.

Estimated Time to Arrival (ETA)

Communicating accurate product arrival estimates to customers is increasingly crucial for businesses aiming to meet and exceed expectations. The ability to provide delivery windows, as demonstrated by industry leaders like Amazon, is highly valued in today's competitive landscape. AI helps enhance the accuracy of delivery time estimates by incorporating various inputs and allowing retailers to simulate and drill down into each calculation. This ensures that fulfillment decisions align with the business's priorities, whether it's cost or speed.

Safety Stock Management

Traditional inventory management relied on static quantity or percentage levels, often disregarding e-commerce or omni-channel fulfillment. With evolving consumer expectations and omni-channel engagement, dynamic stock level adjustments are necessary to respond to incoming demand. AI-driven automated re-balancing helps mitigate risks such as tarnished brand loyalty due to unfulfilled promises or overselling and subsequently over-purchasing inventory. Innovative companies like REI leverage predictive rules to optimize in-store and warehouse inventory sourcing, meeting seasonal customer demands while maximizing margins.



SOME REAL-WORLD EXAMPLES OF AI IN INVENTORY MANAGEMENT

Amazon:

Amazon, renowned for its efficient warehouse operations, relies on AI-powered robots for product picking and packing. The company's AI systems enable real-time tracking of inventory levels, ensuring quick and accurate delivery to customers. Amazon's Sparrow robotic system leverages computer vision and AI to recognize and handle individual products, marking a significant advancement in industrial robotics. Similar technology is being used by FMCG companies like Coca-Cola. In addition to that, **Amazon Go** is a revolutionary retail store concept introduced by Amazon in 2018. The magic lies in the simplicity of the process. Shoppers can freely browse the store, select the products they want, and place them directly into their bags. When they're done shopping, they can simply walk out of the store without having to touch anything or go through a traditional payment process with a cashier or a POS machine.

Walmart:

Walmart utilizes AI across its global supply chain to forecast demand, optimize inventory levels, and track shipments. This AI-driven approach enables cost reduction and improved customer satisfaction. Walmart has also integrated AI into its online grocery ordering, utilizing deep learning algorithms to suggest suitable substitutes when selected items are out of stock. For example, the technology was first introduced at Sam's Clubs in 2019 before expanding to Walmart a year later. In 2021, Walmart also started utilizing AI to enhance online grocery ordering. For instance, the company is using deep learning AI to identify the best substitutes for customers if an item selected is out of stock.



IKEA:

IKEA has embraced AI by introducing interactive digital experiences for customers. Since 2022, with features like IKEA Kreativ, customers can design and visualize their living spaces using digitalized furniture through the IKEA app, eliminating the need to visit physical stores.

These examples illustrate how AI is already transforming inventory management. As AI continues to advance, we can expect further innovative and groundbreaking applications. The ability of AI to process large volumes of data, identify patterns, and make data-driven decisions offers businesses a competitive advantage in today's rapidly evolving market landscape.

In summary, AI-powered inventory management empowers businesses to optimize their supply chains, reduce costs, and deliver exceptional customer experiences. By harnessing the potential of AI, businesses can stay ahead in the competitive global marketplace, ensuring efficient inventory management that fuels long-term success.



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NAAFCO



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BRAC-Aarong, E-commerce

GLOBAL SUPPLY CHAIN

NEWS CORNER

PEPSICO ON
RECYCLING
MOVEMENT

88% of packaging that was recyclable, compostable, biodegradable or reusable in 2022. 7% of recycled content in the company's plastic packaging. 11% Growth in absolute tonnage of virgin plastic derived from nonrenewable sources.

INFLATION ON SC PEOPLE

Proxima's 2023 Supply Chain Barometer surveyed 2,000 CEOs in both the US and the UK — 1,000 in the U.S. and 1,000 in the U.K. — and found that 70% listed human or labor rights as a key supply chain concern. Roughly 36% of the U.S. CEOs said they will consider job cuts as a way to address inflation.

AI, THE NEW
OPTIMIZATION TOOL

AI and machine learning in reducing supply chain costs. McKinsey reports - users have reduced inventory expenses by 35%, and logistics costs by 15%.



AIR CARGO DEMANDS ATTENTION

The International Air Transport Association (IATA) projected air cargo demand will shrink by 3.8% and airline cargo revenues will retreat by a third to \$142.3 billion year over year. Cargo revenues of \$100 million as labor shortages and fuel expenses lead carriers to charge more for their services. IATA's most recent update showed the amount of cargo carried in April slid 6.6% from the prior year while capacity increased 134%. Aircraft space for freight now exceeds pre-COVID levels, by 3.2%, for the first time.

TAX CREDIT ON GREEN ENERGY

According to the International Energy Agency's Electricity Market Report 2023, power generation from renewable sources of energy in the global power generation mix could rise from 29% in 2022 to 35% in 2025. The 2022 U.S. Inflation Reduction Act (IRA) has committed \$400 billion in investment and subsidies to cut greenhouse gas emissions and offers an investment tax credit of up to 70% on green energy projects.

FDI REBUILDING
VIETNAM

Vietnam generated \$22.4bn from foreign direct investment projects in 2022, an increase of 13.5% over the previous year. Vietnam attracted 962 new FDI projects in the first five months of the year, up from 578 in 2022.

ACTIVITY HIGHLIGHTS

COLLABORATION WITH ZNRF UNIVERSITY OF MANAGEMENT SCIENCES (ZUMS)



UNVEILING THE 5TH ISSUE OF THE SUPPLY CHAIN STREET MAGAZINE & PITHA UTSHAB







THE SUPPLY CHAIN STREET (TSCS) & TREDX PRESENTS SEMINAR ON
DIGITAL FACTORING MARKETPLACE - IMPORTANCE AND FUTURE



SUPPLY CHAIN MEETUP & GRAND IFTAR



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LOGISTICS FOR A SUSTAINABLE TOMORROW

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THE CRITICAL NEXUS: EXPLORING THE CRUCIAL ROLE OF FOOD SUPPLY CHAINS FOR BANGLADESH AND BEYOND

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WHEN FEARS DRIVE MARKETS: UNDERSTANDING THE IMPACTS OF PANIC BUYING ON THE SUPPLY CHAIN ECONOMY AND PROPOSED SOLUTIONS

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EFFICIENT PROCUREMENT: THE KEY TO REDUCE COST AND INCREASE PROFIT

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STREAMLINING INVENTORY MANAGEMENT WITH ARTIFICIAL INTELLIGENCE (AI)

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ব্যবসা আপনার ভাবনা আমাদের

ব্যবসার চলতি মূলধন নিশ্চিত করতে লংকাবাংলা ফাইন্যান্স আপনার সাথে আছে সহজশর্তে ও জামানতবিহীন সাপ্লাই চেইন ফাইন্যান্সিং অর্থায়ন সুবিধা নিয়ে

লংকাবাংলা সাপ্লাই চেইন ফাইন্যান্স

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