Supply Chain & Logistics

Innovation, dedication, and technology

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Introduction

Supply Chain & Logistics can be regarded as the **movement of goods and people (services) from point of origin to the destination**.

An **efficient supply chain and logistics planning ensures timely delivery at any point in the chain** and the **quality of the products and services are intact throughout the process.**
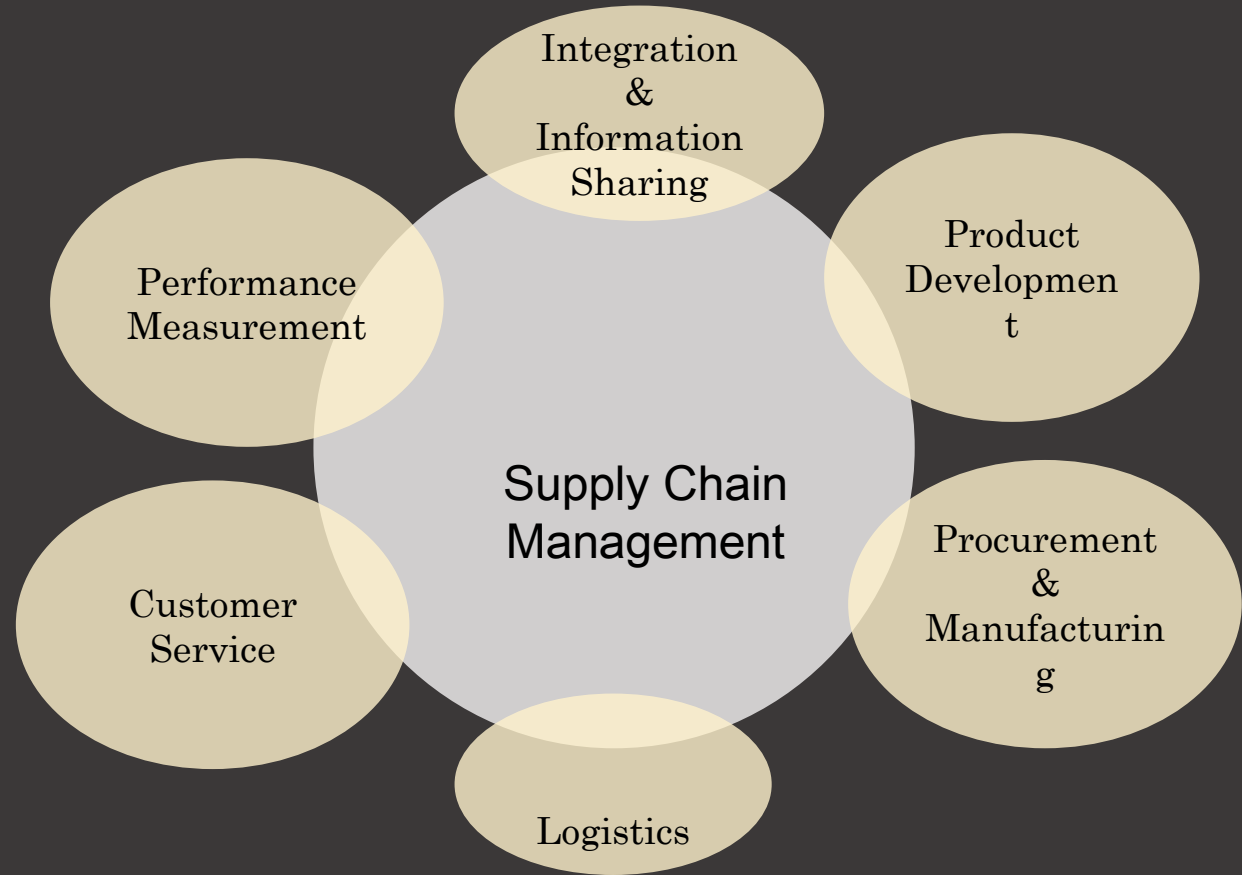
Supply Chain Management

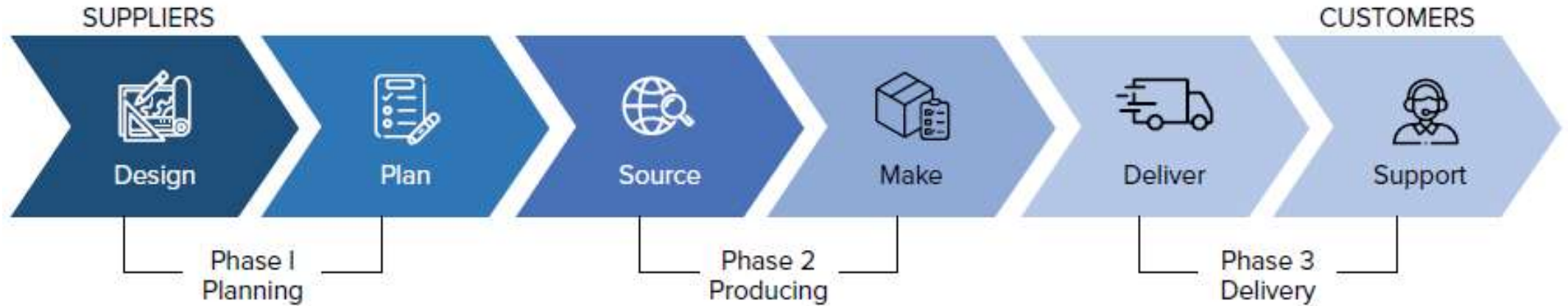The planning, production, and delivery of goods, and handling of returns, are all covered by supply chain management

Logistic

Logistics is concerned with getting the appropriate goods to the right place at the right time

Efficient Supply Chain Management

Integration & Information Sharing

Product Development

Performance Measurement

Supply Chain Management

Procurement & Manufacturing

Customer Service

Logistics

Role of Technologies in Different Facets of Supply Chain and Logistics

SUPPLIERS

CUSTOMERS

Design | Plan | Source | Make | Deliver | Support

Phase 1
Planning

Phase 2
Producing

Phase 3
Delivery

GIS
GPS
GNSS
IoT
Remote Sensing
Drones
3D Modelling

GIS
Automation
& Robotics
3D Modelling
AI/ML
Cloud

GIS
GNSS
GPS
Block Chain
AI
Automation &
Robotics
Drones

- Better decision making

- Process transparency

- Consolidation of information

- Asset utilization

- Warehouse efficiency

- Tagging, labelling, sorting, and placing product carts and shelves to rationalize costs
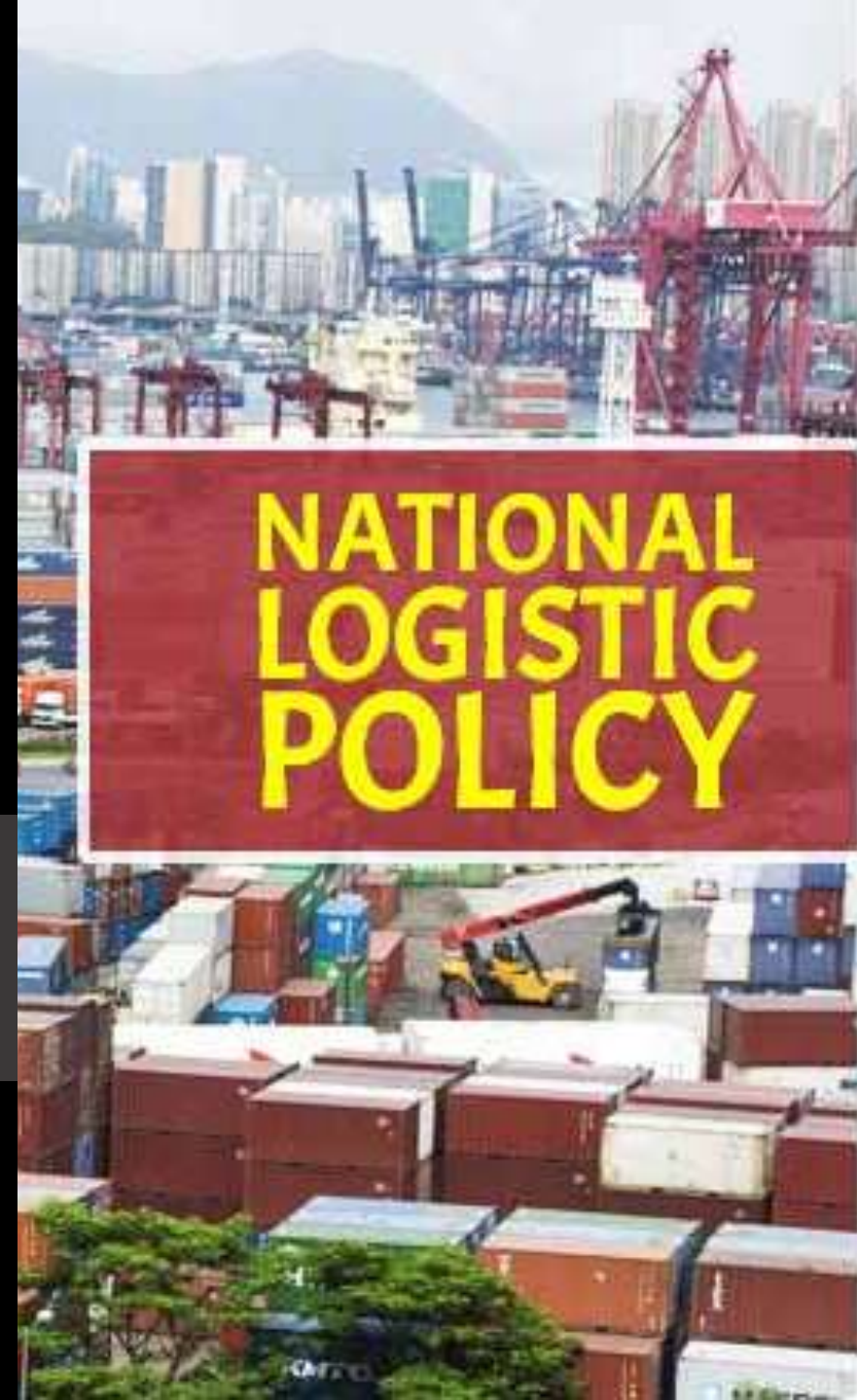
- Improving communication flow

- Streamlined inventory and supply availability

- Improves last-mile delivery with building-recognition and indoor navigation

Government Programs and Policies

- The National Logistics Policy 2022 aims to reduce the cost of logistics from its current 14 percent of GDP to less than 10 percent.

- The goal of the programme is to increase the competitiveness of Indian exports while also encouraging economic expansion and job creation.

- The policy's focal points include EXIM (Export-Import) Logistics, State Engagement, Integrated Digital Logistics Systems, Standardization of Physical Assets and Benchmarking of Service Quality Standards, Facilitation of Development of Logistics Parks, and Service Improvement Framework.

Opportunity for Geospatial and Emerging Technologies

- Integration of modern technologies like Artificial Intelligence (AI), Machine Learning and Internet of Things (IoT) for seamless distribution of operations
- Application of GIS and GPS technologies for efficient real time tracking of goods and assets

PM Gatishakti — National Master Plan for Multi-Modal Connectivity

- Aim is to develop Multi-modal Connectivity, a digital platform to bring 16 Ministries including Railways and Roadways together for integrated planning and blended execution of infrastructure connectivity undertakings.

- The multi-modal connectivity will deliver integrated and seamless connectivity for the movement of individuals, goods and services from one mode of transport to another.

The infrastructure plans of several Ministries and State Administrations, such as
- Bharatmala,
- Sagarmala,
- inland waterways,
- dry/land ports,
- UDAN, etc., are included in PM Gati Shakti

Made extensive use of technology, such as spatial planning software and ISRO (Indian Space Research Organization) photos created by BiSAG-N. (Bhaskaracharya National Institute for Space Applications and Geoinformatics).

The portal would include 200+ layers of geospatial data, including

During and post-pandemic, this industry has turned into a 'frontrunner' for national and international trade, and has become the lifeline of smaller businesses and start-ups.

In 2022, the key trends in the industry involve building resilience and agility into the supply chain.

RISE OF DIGITAL FREIGHT PLATFORMS

Increases the efficiency of freight transfer by connecting to more available capacity with shippers and logistics companies, thereby improving the utilization of logistics equipment and vehicles.

COLLABORATIVE ROBOTICS

Enables interoperability of more solutions, thereby improving efficiency, safety, and retention.

IMPACT OF E-COMMERCE ON PROFILE OF SHIPMENTS

Reduces production costs, shortens demand response time and market change time, while enhancing overall service to customers.
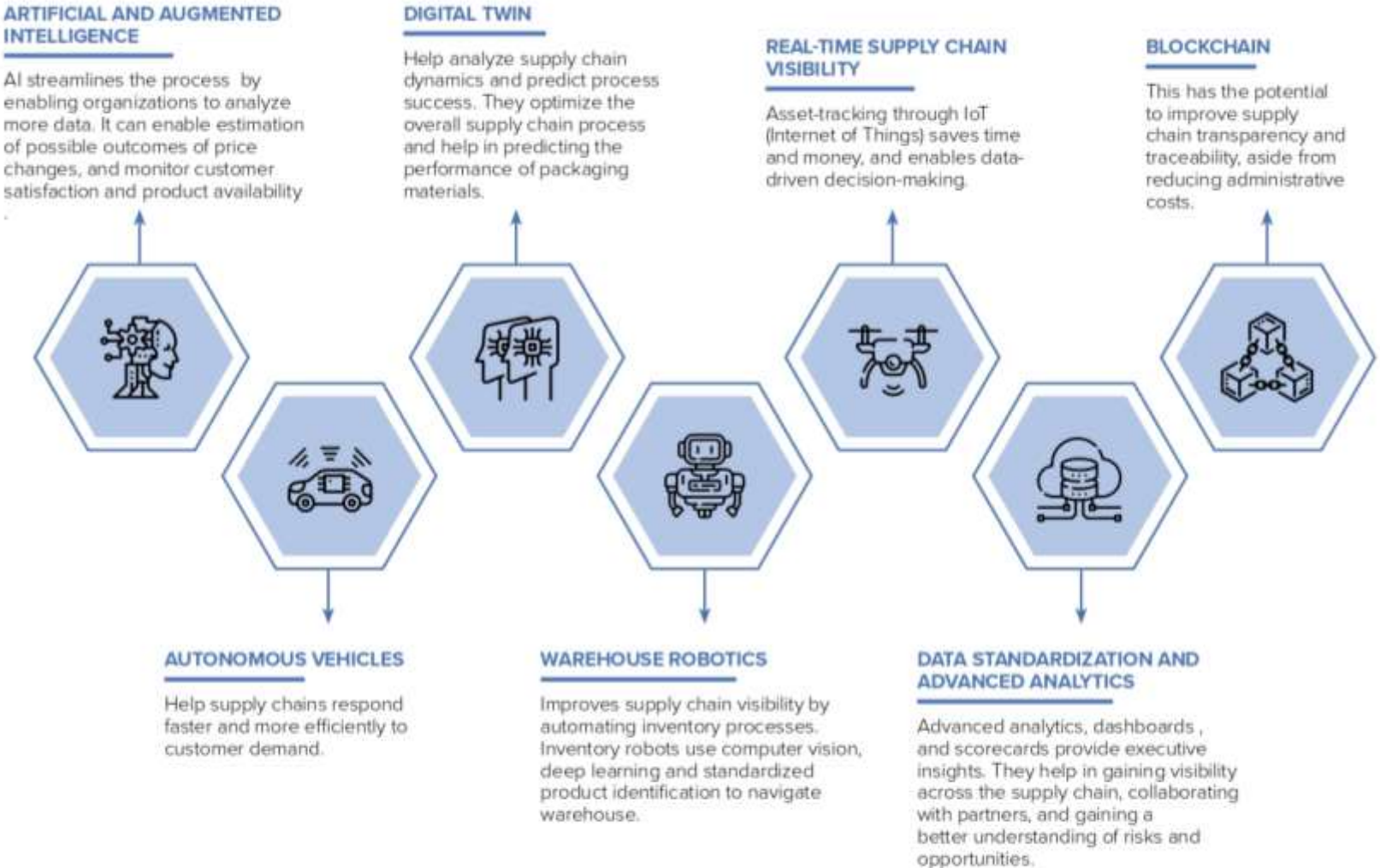
MASSIVE ADVANCEMENT IN TECHNOLOGY INTEGRATION

The growing pace of technological innovations like AI, advanced analytics, automation, etc., propels digital supply chain management solutions.

GROWING INDUSTRY NEWCOMERS

Start-ups are shaping the future of logistics and supply chain sector through emerging business models.

Future adoption of Technologies in Logistics & Supply Chain Sector

ARTIFICIAL AND AUGMENTED INTELLIGENCE

AI streamlines the process by enabling organizations to analyze more data. It can enable estimation of possible outcomes of price changes, and monitor customer satisfaction and product availability.

DIGITAL TWIN

Help analyze supply chain dynamics and predict process success. They optimize the overall supply chain process and help in predicting the performance of packaging materials.

REAL-TIME SUPPLY CHAIN VISIBILITY

Asset-tracking through IoT (Internet of Things) saves time and money, and enables data-driven decision-making.

BLOCKCHAIN

This has the potential to improve supply chain transparency and traceability, aside from reducing administrative costs.

AUTONOMOUS VEHICLES

Help supply chains respond faster and more efficiently to customer demand.

WAREHOUSE ROBOTICS

Improves supply chain visibility by automating inventory processes. Inventory robots use computer vision, deep learning and standardized product identification to navigate warehouse.

DATA STANDARDIZATION AND ADVANCED ANALYTICS

Advanced analytics, dashboards, and scorecards provide executive insights. They help in gaining visibility across the supply chain, collaborating with partners, and gaining a better understanding of risks and opportunities.

Source: Geospatial World Analysis

Thankyou