Improving Logistics in India: The SWIFT Way

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Outline

- **Diagnostics**
- Case Studies
- Way Forward

Diagnostics: Where are We

Availability and Responsiveness	:	30% Stockouts, Poor Quality of Life, Disaster Consequences
Quality	:	Losses, Damages, Repair Mindset
Time	:	Congestion, Inventories, Higher Asset Use but Lower Effectiveness
Reliability	:	Coordination, Followup Culture
Sustainability	:	Various Forms of Public Cost
Cost	:	13-14% of GDP

Logistics less than Desirable

Diagnostics: Where are We

Logistics Performance Index: World Bank

2018: Rank 44: 3.18, (2016: Rank 35 : 3.42)

- Efficiency of the clearance process: 2.96 (3.17)
- Quality of trade and transport related infrastructure: 2.91 (3.34)
- Ease of arranging competitively priced shipments: 3.21(3.36)
- Competence and quality of logistics services: 3.13 (3.39)
- Ability to track and trace consignments: 3.32(3.52)
- Timeliness of shipments in reaching destination within the scheduled or expected delivery time: 3.50(3.74)

Sources: World Bank, https://lpi.worldbank.org/international/scorecard/radar/8/C/IND/2018, accessed on October 09 2018

Diagnostics: Where are We

Global Competitiveness Index: World Economic Forum

2018: Rank 58, (2017: Rank 40)

Out of 12 pillars, five have a closer connect to Logistics

- Infrastructure: 63

- Market size: 3

- ICT adoption: 117

- Business dynamism: 58

- Innovation capability: 31

Sources:
World Economic Forum, accessed from http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017–2018.pdf,
http://www3.weforum.org/docs/GCR2018/05FullReport/TheGlobalCompetitivenessReport2018.pdf on December 06, 2018

Diagnostics: Where are We

Ease of Doing Business: World Bank Group

2019: Rank 77, (2018: Rank 100)

Out of ten Indicators, one has a close connect to Logistics

- Trading Across Borders: 80 (146)

Diagnostics: Major Gaps

- **S**ustainability
- **W**arehousing
- **I**nformation and Communication Technology (ICT)
- **F**ragmentation
- **T**ransport Infrastructure.

With a focus on

- *Product Flow*
- *Information Flow*
- *Cash Flow*

Sustainability

- High dependence on road leading to relatively higher levels of pollution and lower levels of safety

- Agri supply chains have higher losses, especially in perishable products

- Reverse supply chains are to be in order

Warehousing

- Consumer Products
- E-commerce
- Cold chains for agricultural products
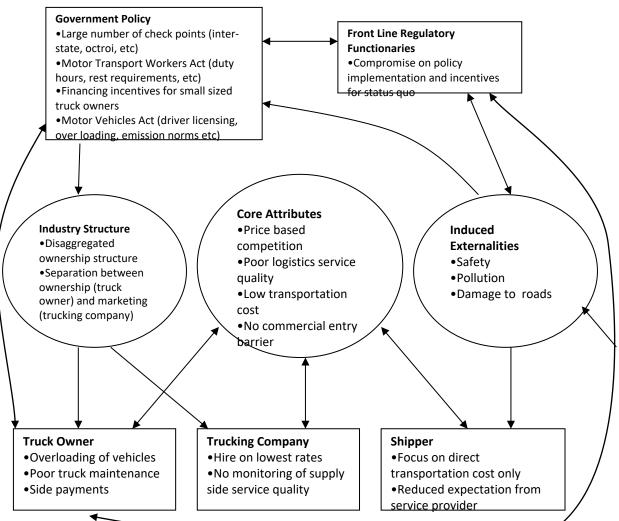- Bulk storage for food grains

Information and Communication Technology

- Lack of technology adoption and systems orientation

- Unskilled manpower

- Traditional business methods promoting a manual "follow up" culture

- Undemanding and quality-neutral clients who are used to a non-standard product and service, resulting in more emphasis on price than quality

Fragmentation

- Service Providers: vendors, freight forwarders, distributors, retailers

- Transporters: trucking, rail, ocean/coastal/IWT, air

- Hubs: warehouses/stockyards, rail terminals, sea ports, ICD/CFS, airports

- Regulators: customs, tax authorities, vehicle inspectors

- Shipments change a lot of hands. There is low visibility over delivery networks. Integration of systems gets challenging.

Fragmentation
Unholy Equilibrium in the Road Transportation Sector

Government Policy
- Large number of check points (inter-state, octroi, etc)
- Motor Transport Workers Act (duty hours, rest requirements, etc)
- Financing incentives for small sized truck owners
- Motor Vehicles Act (driver licensing, over loading, emission norms etc)

Front Line Regulatory Functionaries
- Compromise on policy implementation and incentives for status quo

Industry Structure
- Disaggregated ownership structure
- Separation between ownership (truck owner) and marketing (trucking company)

Core Attributes
- Price based competition
- Poor logistics service quality
- Low transportation cost
- No commercial entry barrier

Induced Externalities
- Safety
- Pollution
- Damage to roads

Truck Owner
- Overloading of vehicles
- Poor truck maintenance
- Side payments

Trucking Company
- Hire on lowest rates
- No monitoring of supply side service quality

Shipper
- Focus on direct transportation cost only
- Reduced expectation from service provider

Source: Figure 2, http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.567.8182&rep=rep1&type=pdf, accessed on December 15, 2015

Transport Infrastructure

- Lack of technology adoption and systems orientation

- Problem of unskilled manpower

- Traditional business methods promoting a manual "follow up" culture

- Undemanding and quality-neutral client who is used to a non-standard product and service

- More emphasis on price than quality

Transport Infrastructure: *Congestion*

- Average speed of truck: 300-325 km/day compared to 700 km/day in developed countries

- Average wagon turn-round time in Railways: 5.32 days, of which only 23.4 hours (0.97 days) was the revenue earning run over an average lead of 561 km, with an average speed of 24 kmph (2016-17)

- Average ship turn-round time: 2.64 days as compared to the international desirable average of 1.0 days (Upto January 2017)

Source:
Indian Railways Statistical Publications 2015-16, Ministry of Railways, Government of India, accessed from http://www.indianrailways.gov.in/railwayboard/view_section.jsp?lang=0&id=0,1,304,366,554,1964,1967
Accessed on April 13, 2018
Press Release, Ministry of Shipping*, accessed* http://pib.nic.in/newsite/PrintRelease.aspx?relid=159030 on March 14, 2017, http://pib.nic.in/PressReleaseIframePage.aspx?PRID=1513281 accessed on December 06,2018

Outline

- Diagnostics
- **Case Studies**
- Way Forward

Sustainability
Case Study: Lubricant

- Castrol had innovative packaging solutions for transporting lubricants, with focus on reverse logistics.

- Trucks were not allowed to transport lubricants at night. Drivers were also given special training on road safety.

Health, Safety, Security and Environment

Ross Burnham Collection

Source: http://www.hankstruckpictures.com/burnham22.htm accessed December 15, 2015

Warehousing
Case Study: Food Grains

Most 'scientific' warehousing in India is in the Government sector. These were developed in response to the Green Revolution, under FCI, CWC and SWCs, during the 60s-80s. However, over the years, they have suffered from inability to keep up with demand and lack of maintenance. Most do not qualify for Warehouse Receipts for improved cash flow. Public-Private Partnerships and private provisioning of warehousing are viewed as the way forward. RSWC (Rajasthan) is one example.

Cash Flow, Public-Private Partnerships

Source: https://www.thehindubusinessline.com/economy/agri-business/govt-plans-to-build-rice-silos-in-main-growing-states/article22657540.ece accessed on April 13, 2018

ICT- Marico:Copra

- Marico introduced an intranet portal for sourcing and buying Copra from the farmers. This rid the auction process of intermediaries and shortened the procurement cycle. Further, the quality of Copra was self-certified by the farmers for dispatching to the factory.
- However, this was not effective fully due to lack of internet connectivity, having to visit internet cafes and password challenges.
- Marico then turned to mobile SMS for the auction process.
- It is a pioneering example of e-Procurement.

Disintermediation, Self Regulation of Quality, Collection Centers

Fragmentation
Case Study: Milk

A comprehensive example of supply chain integration with focus on quality is the case of GCMMF/NDDB.

- Began with just milk procurement and processing.

- Over 60 years, they have forward integrated the chain to include distribution, value added products, and retailing.

- They have backward integrated into animal husbandry, animal feed, and packaging.

- GCMMF has 18 member unions in 33 districts with a network spread across 18,700 villages and nearly 3.6 million producer members. (2016-17)

- GCMMF procurement:
  - 21.1 million litres per day during 2016-17 or 7701.5 million litre per annum
  - Rs 41,000 crore Turnover for Amul brand in 2017-18, of which 80-85% is passed on to milk producer members
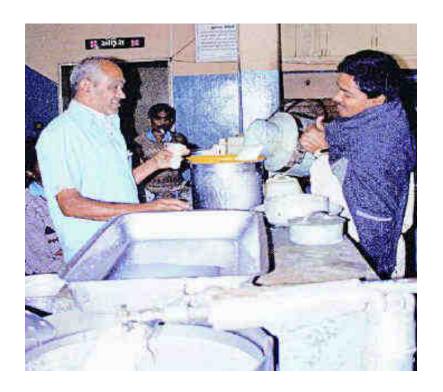 - Expected to be around 20 million litres per day by 2020

Cash Flow, Quality Assessment, Developments of Key Inputs, Vertical Integration

Source:
http://www.amul.com/m/organisation, accessed on April 13, 2018

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Fragmentation
Case Study: Milk

- GCMMF pays Rs. 89.86 crores per day, at the rate of Rs. 42.60/litre, to farmer members of which Rs 15 crores (?) is in cash.

- India is today the largest milk producer in the world. (176350 million litre in 2017-18)-US is the second largest (for year 2017, the milk production was 215,466 million pounds or 97,733.73 million litre)

- GCMMF annual milk production of 7701.5 million litre is 4.4% of the country's annual milk production of 176350 million litre

Cash Flow, Quality Assessment, Developments of Key Inputs, Vertical Integration

Source:
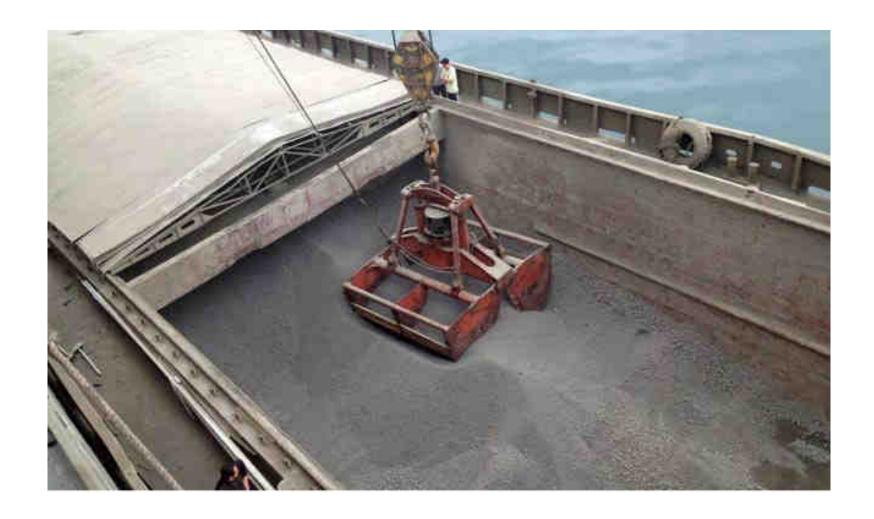http://www.amul.com/m/organisation, accessed on April 13, 2018

Transport Infrastructure
Case Study: Cement

- The cement industry has enabled better market choice and flexibility in transportation (use of open wagons instead of only covered wagons, coastal transportation) by making cement in two stages, first as clinker near the raw material source, then grinding, blending and bagging near the market.

- The road infrastructure has significantly improved in the country, primarily through NHAI, some state highways and the PMGSY. The Ministry has been very open in continuously improving the model for PPPs with an appropriate sharing of risk.

- Container handling capacity at ports has improved to such an extent that we now over capacity

Flexibility, Postponement

Source: http://www.peakward.com/gallery-1.htm accessed on December 15, 2015

Outline

- Diagnostics
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Way Forward

- Policy Makers
- Principals/Service Providers
- Industry
- Researchers/Think Tanks

Policy Makers

Sustainability

- Bring in PPPs in rail and coastal/IWT
- Implement stringent pollution norms.

Warehousing

- Promote modern warehousing including logistics parks
- Bring in PPPs: huge scope for OMT

ICT

- Facilitate the build-up of quality human resources infrastructure through education and research. NSDC has provided a focus (transportation and logistics, warehousing and packaging).
- Electronic tolling should be stabilised and proliferated.

Source: http://www.iimahd.ernet.in/assets/snippets/workingpaperpdf/2004-08-02graghu.pdf, accessed on December 6, 2015)

Policy Makers

Fragmentation

- GST Introduction should help removal of interstate check posts distortionary points of sale, rationalize distribution structure, warehouse location and consolidation

- Review incentives that create the small sized operator, since it creates distortions in the industry structure

Transport Infrastructure

- Re-energise the focus on physical infrastructure development (transportation, including cold chains and integration with warehousing)

- Bring in PPPs in rail and coastal/IWT

Source: http://www.iimahd.ernet.in/assets/snippets/workingpaperpdf/2004-08-02graghu.pdf, accessed on December 6, 2015

Government Initiatives

- Central government has created a division under the Ministry of Commerce to coordinate across different supply side ministries like Civil Aviation, Railways, Road Transport, Shipping, etc. They would also represent the user perspective on behalf of the industry.

- Logistics Division has been given the mandate to develop an Action Plan for the integrated development of the logistics sector in the country, by way of policy changes, improvement in existing procedures, identification of bottlenecks and gaps and introduction of technology in this sector

Government Initiatives

- Many state governments, including Gujarat, Haryana, Uttar Pradesh and Telangana have evolved logistics policies.

- West Bengal government has recently come up with a policy for Logistics Park Development and Promotion with the vision to 'position West Bengal as a global leading integrated Logistics Hub by creating an efficient network of transportation and storage infrastructure to fuel the growth of state's overall economy

Principals/Service Providers

Other than business as usual:

Sustainability

- Reverse supply chains
- Green, safe and secure supply chains

Warehousing

- Value Added Services
- Quality to target Warehouse Receipts
- E-commerce

ICT

- Sensors/RFID/Apps
- E-commerce
- Analytics

Principals/Service Providers

Other than business as usual:

Fragmentation

- Aggregator services
- Value added services

Transport Infrastructure

- Design thinking
- New vehicle types: EVs, autonomous, drones
- Asset based services
- Value added services

Disruptors in Logistics

- Recent disruptors: Rivigo, Delhivery, Blackbuck
- Out of 22 impact making startups, all of which have started since 2011, at least 18 are by IIT/NIT/Top Management school graduates
- Majority initiatives in road transport and value-added service domain
- Huge untapped opportunity in rail, coastal shipping and Inland Water Transport

Service Provider: Rivigo

- Founded in 2014

- Founders: Gazal Kalra (Stanford Graduate School of Business) and Deepak Garg (IIT Kanpur+IIM Lucknow)

- Fleet size: 3000+ trucks

- Revenue in FY17: Rs 400 crore

- What they do: Use driver-relay model to achieve 50-70% reduction in transit times

https://www.theindianwire.com/startups/top-20-logistics-startups-india-74303/, https://www.business-standard.com/article/companies/logistics-firm-rivigo-builds-a-long-haul-trip-with-drivers-118042400040_1.html, https://www.rivigo.com/products accessed on December 10,2018

Service Provider: Delhivery

- Founded in 2011

- Founders: Sahil Barua (IIM Bangalore), Mohit Tandon (IIT Kanpur), Bhavesh Manglani (IIM Calcutta), Suraj Saharan (IIT Bombay), and Kapil Bharati (IIT Delhi)

- Revenue in FY17: Rs 751 crore

- Presence in 12000+ pin codes and over 1200 cities

- What they do: provide a technology platform to enable efficient end-to-end logistics solutions across different transportation modes with complete visibility. They also provide warehousing services in order to provide comprehensive solutions to its clients

https://www.theindianwire.com/startups/top-20-logistics-startups-india-74303/, https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/as-growth-zooms-to-30-action-is-shifting-to-ecomm-logistics-space/articleshow/63262818.cms,
https://www.delhivery.com/about/ accessed on December 10,2018

Service Provider: Blackbuck

- Founded in 2015

- Founders: Rajesh Yabaji (IIT Kharagpur), Chanakya Hridaya (IIT Kharagpur), and Ramasubramaniam B (IIT Kharagpur)

- 100,000+ trucks on the platform

- Revenue in FY17: Rs 566 crore

- What they do: integrate both demand and supply onto a single platform. Customers can track and analyse the shipments carried out on the platform. On the other hand, truckers are able to see customers' demands across the country through a mobile application

E-commerce in India

- Report based on research done by Google, Bain & Company and Omidyar Network in August 2018: about 50 million regular users of e-commerce, another 50 million drop out after their first use

- Probable reasons-
  - New users "can't relate" to online shopping sites - many of these new users aren't even familiar with a shopping cart icon because of their unfamiliarity with the modern physical retail
  - User interface for sites and apps is mostly in English and sometimes Hindi - rules out a very large number of new internet users from easily adapting themselves with online shopping
  - Touch and feel of internet shopping- complex user interface barrier
  - Trust factor- A customer sitting in say, Bareilly is concerned whether he will get a refund
  - social prejudices- prejudices in group of first-time internet users that don't allow women to access internet, cutting out a big potential group of shoppers

Disruptor in Rural E-commerce Space: StoreKing

- Founded in 2012 by Sridhar Gundaiah (University of Greenwich) and Govardhan Krishnappa (Adarsha Jain College)

- Parented by LocalCube Commerce Pvt Ltd, StoreKing has now expanded to over 1,200 towns

- StoreKing aims to be the digital touch point for rural India and highly focused to connect brand with consumers and enable Rural India to access technology*

- Operates through over 16,000 mobile kiosks

- Delivers over 1.5lakh orders every month, to a customer base of over 10 lakh

- Over 650 master franchisees, across eight southern and western States of India, namely Tamil Nadu, Kerala, Karnataka, Andhra Pradesh, Telangana, Maharashtra, Madhya Pradesh, Orissa and Gujarat

http://storeking.in/about, https://yourstory.com/2016/06/storeking-funding/ accessed on December 10,2018

Disruptor in Rural E-commerce Space: StoreKing

- The company gets in touch with any retail in the village, and convinces them to buy and install a StoreKing tablet or a kiosk in the store. The tablet contains the app that is loaded with over 80,000 products that the retailer helps the customer browse through, select a product and pay for it. Once the order is confirmed, the customer pays the retailer in whole and receives an SMS (in vernacular) from StoreKing.

- It only costs the retailer a little less than Rs 10,000, to install the device at his store, and he also receives 6-10 percent commission on sales made.

http://storeking.in/about, https://yourstory.com/2016/06/storeking-funding/ accessed on December 10,2018

Disruptor in Rural E-commerce Space: StoreKing

- Major problems faced by e-commerce firms in rural penetration: language barrier, non-specific addresses, trust and limited or no access to technology

- How StoreKing addresses these problems:
  - Language barrier: Once the order is placed, StoreKing communicates with the customers through mobile phones in their local language
  - Non-specific addresses and Limited or no access to technology: Goods are dispatched to a local retailer
  - Trust: StoreKing finds a trusted retailer who is known in the village so that people come to him to buy the things they want to and are willing to pay in full toward the product

https://srini108.wordpress.com/2016/06/09/storeking-taking-ecommerce-to-rural-india/, https://yourstory.com/2016/06/storeking-funding/, http://storeking.in/about accessed on December 10,2018

Disruptor in Cargo Handling: Ati Motors

- Founders: Dr. V Vinay (Ex-faculty IISc.) , Saurabh Chandra (IIT-BHU) and Saad Nasser (School drop-out and whiz kid)

- A level-4 autonomous cargo vehicle (one that is fully autonomous within private spaces, according to classifications set by the Society of Automotive Engineers), which could carry up to 1 ton of payload in a semi-private location like a factory or an airport, hit the sweet spot

Industry

Sustainability

- Insist on members complying with the law and standards.

Warehousing

- Evolve standards and certification systems for practices in warehousing and handling.

ICT

- Invest in the build-up of quality human resources infrastructure through education and research.

Industry

Fragmentation

- Organize the "people" sector: small suppliers, distribution intermediaries, transporters, and retailers.

Transport Infrastructure

- Evolve standards and certification systems for practices in transportation and contracts (for each vertical).

Source: http://www.iimahd.ernet.in/assets/snippets/workingpaperpdf/2004-08-02graghu.pdf, accessed on December 6, 2015

Researchers/Think Tanks

- Sustainability
- Warehousing
- ICT
- Fragmentation
- Transport Infrastructure

Thank You