Warehousing to Supply Chain Management - Complementary or Supplementary

G Raghuram
Indian Institute of Management, Ahmedabad
• Situations of Competitive Advantage
• What is Supply Chain?
• Drivers for Supply Chain Management
• Poor Supply Chain Quality
• Key Actors
The concept of the supply chain has changed significantly for a bicycle company.

- It started from a factory that sourced raw materials, made components, assembled bicycles, had finished goods and branch warehousing, and then delivered to dealer.
- And changed to sourcing, kitting, warehousing, delivery to dealer, and assembly.
- The factory has lost its significance and the supply chain is leaner and more “straight”. The warehousing is essentially second level kitting. The bicycle company focuses more on marketing, design, and quality control.

**Sourcing, kitting, dealer development, focus on costs**
Situations of Competitive Advantage

- An automobile major has improved its inventory levels and inbound logistics costs by using a third party logistics service provider to source, kit, and deliver components. The staging is done through a warehouse.

*Third party logistics, kitting*
Situations of Competitive Advantage

• Dell Computers was a pioneer by recognizing the market segment which was (i) computer aware, (ii) customization sensitive, and (iii) price sensitive, and designing a channel for this.

• The channel offered mass customization and two-day delivery at a low price by leveraging online (remote) ordering, assembling to order at warehouses, and express parcel delivery.

Mass customization, focus on costs
Situations of Competitive Advantage

• A comprehensive example of supply chain integration with focus on quality is the case of NDDB and milk cooperatives.
  – Began with just milk procurement and processing.
  – Over 50 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.
  – Chilling centers (milk *warehouses*) and increasingly refrigerated trucks are improving quality.

*Cash logistics, quality assessment, development of key inputs and infrastructure*
• Situations of Competitive Advantage
• **What is Supply Chain?**
• Drivers for Supply Chain Management
• Poor Supply Chain Quality
• Key Actors
Flow of Value (Goods & Services)

Supplier → Manufacturer → Branch/ CFA → Wholesaler/ Retailer → Customer

T = Transporter
Flow of Value (Goods & Services)

- Procurement
- Outsourcing and conversion
- Distribution
- Inbound logistics
- Order processing, production, planning, scheduling & despatching
- Transportation
- Stock and sell
- Outbound logistics
- Customer service
- Customer

T = Transporter
Flow of Value (Goods & Services)

Upward Flow of Information

- procurement
- outsourcing and conversion
- distribution
- stock and sell
- usage and consumption

Downward Flow of Information

- inbound logistics
- order processing, production, planning scheduling & despatching
- outbound logistics
- customer service

T= Transporter

T= Supplier
T= Manufacturer
T= Branch/CFA
T= Wholesaler/Retailer
T= Customer

Flow of Finance
Supply Chain Management

Design and Operation of the Physical, Managerial, Informational and Financial Systems Needed to Transfer Goods and Services from VENDOR TO CUSTOMER (point of production to point of consumption) in an Efficient and Effective manner
EFFICIENT : Doing things right
  Productivity
  Cost minimization
  Supply driven

EFFECTIVE: Doing right things
  Quality, Flexibility, Service level
  Profit maximization
  Customer (demand) driven
• Situations of Competitive Advantage
• What is Supply Chain?
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• Poor Supply Chain Quality
• Key Actors
1 Customer Expectations

- Value addition in the product
- Response time
- Timeliness
- Delivery location
- Reverse logistics
- Reliability
- Cost sensitivity
2 Inventory Management

• Companies have more inventory than they need to (in their own perception)

• Lead times for procurement, manufacture and distribution significantly more than technological minimum

• Companies focusing attention on inventories could not only reduce inventory costs, but also stockouts due to faster access to market

• Inventory decisions are usually ‘local’ in the supply chain
3 Supply Chain Costs

- **Direct** (transportation and handling)
- **Indirect** (inventory, losses)
- **Hidden** (costs borne by other systems like infrastructure wear and tear, safety, pollution, distortions due to side payments)
- **Opportunity** (foregone sales transactions)
4 Facilitating Technologies

- Information Technology

- Flexible Manufacturing Technology
5 Facilitating Attitudes

• Partnership

• Integration

• Continuous Improvement
Result:

- Competitive Advantage not at a Firm Level,

  but at a Supply Chain Level
• Situations of Competitive Advantage
• What is Supply Chain?
• Drivers for Supply Chain Management
• **Poor Supply Chain Quality**
• Key Actors
Poor Supply Chain Quality

- Cargo logistics accounts for 13% to 15% of GDP
- This does not look at consequential costs due to losses arising out of
  - Poor handling and storage
  - Safety
  - Security
Poor Supply Chain Quality

• Product Availability and Service Quality
  – ECR study shows that product availability is low (30% stockouts). Inter regional comparison might show this to be a bigger problem in rural areas, leading to regional disparities.
  – Consequences are quite significant, especially in the context of medicines and food.
  – Reduction in choices leading to lower quality of life.

Source: Roadmap for Logistics Excellence: Need to Break the Unholy Equilibrium by G Raghuram and Janat Shah, 2004
Poor Supply Chain Quality

- Consequences and Responsiveness
  - Export/import disadvantages and higher inventories
  - Loss of life, injuries and loss of property
  - ‘Non forgiving’ situations
  - Impact on the ‘innocent’
Poor Supply Chain Quality – Unholy Equilibrium?

• Disaggregated Semi-organized Road Transportation (resulting in the following increasing impact on costs)

• Non-scientific *Warehousing*

• End of Planning Period Syndrome

Source: Roadmap for Logistics Excellence: Need to Break the Unholy Equilibrium by G Raghuram and Janat Shah, 2004
• Situations of Competitive Advantage
• What is Supply Chain?
• Drivers for Supply Chain Management
• Poor Supply Chain Quality
• Key Actors
Key Actors

1. Shippers
2. Industry
3. Government
4. Infrastructure and Service Providers
Shippers - Strategic Decision Areas

1. Product design
2. Packaging
3. Choice of markets/sources
4. Production structure
   - Clustering of production activities
   - Outsourcing decisions
   - Sequencing of activities
5. Plant location and layout
6. Distribution/procurement network design
Shippers - Tactical Decision Areas

7. Marketing/despatch/production/purchase: planning horizon and process (inventory norms)
8. Out/in sourcing logistics
9. Plant level logistics
10. Warehouse location
11. Materials handling
12. Transportation: mode choice and contracting
Shippers - Operational Decision Areas

13. Marketing/despatch/production/purchase:
   batch sizes and scheduling (inventory levels)
14. Allocation decisions
15. Transportation: shipment size and routing
16. Warehouse operations
17. Performance monitoring
Industry

- Evolve standards and certification systems for practices in transportation, *warehousing*, handling and contracts (for each vertical).
- Lobby for Laws and Regulation
- Insist on members complying with the law and standards.
- Invest in the build-up of quality human resources infrastructure through education and research.
- Organize the “people” sector: small suppliers, distribution intermediaries, transporters, and retailers.
Government

• Develop
  – Infrastructure
  – Facilitating laws and taxation
  – Clusters with supply chain focus

• Have more mature frontline regulatory functionaries to ensure better compliance with the law

• Facilitate the build-up of quality human resources infrastructure through education and research
Infrastructure and Service Providers

• Determine the importance of your role in the overall supply chain of your customers
• Identify the important factors of your supply affecting your customers’ customer service
• Work on the important areas of your supply and service, in coordination with your customers, thereby reducing costs and improving value. Information technology is a big help here.
Downward Flow of Information

Flow of Value (Goods & Services)

Upward Flow of Information

Supplier | Manufacturer | Branch/CFA | Wholesaler/Retailer | Customer

T = Transporter

Downward Flow of Information

Flow of Finance
Disaggregation/Aggregation

• Product flows are often aggregated and then disaggregated
• Appropriate stage of segregation: kitting vs delayed differentiation
• Raw to packaged to raw
Marginal Redundancy in Capacity

- Reduces stock outs
- Improves lead times
- Gives better psychological space for planning
Performance Measures

• Move from those which focus on one actor to two actors
• Measure outputs rather than inputs
• Focus on distributions rather than averages
• Focus on service measures in addition to product measures
AVERAGE CAPACITY AND UTILISATION WITH % OF OCCUPANCY

(IN LAKH MT)

Source: Presentation on CWC profile
Performance Measures

- ‘Order processing time’ rather than ‘utilization’
- Age wise stocks rather than average
Why Warehousing?

• To transcend time between supply and demand
  – At a macro level, due to seasonality
  – At a micro level, due to need for flexibility from having to anticipate/coordinate arrivals (supplies) and departures (demands)

• To facilitate logistical efficiencies
  – Procurement/distribution network, including change of mode, requiring consolidation/break bulk and/or safe and secure handling
Why Warehousing?

• In short, whenever there is inventory, which fundamentally is due to
  – Seasonality
  – Buffer stocks and
  – Cycle stocks

• In a futuristic sense, focus on inventory reduction and logistical efficiencies due to lead times, handling etc will reduce need for warehousing. (Containerization is an example). (Even cross-docking!) The big opportunity is in value addition for mature economies.
Why Warehousing?

- In the Indian context, the level of supply chain maturity is still on a growth path, with scientific warehousing being a potential engine.
Opportunities

• Some verticals
  – Agriculture and food
  – Pharmaceuticals and health
  – Electronics
  – Construction

• Emerging domains
  – Exports
  – Projects
  – e-Procurement and e-Marketing
Opportunities for Marketing Oriented Warehouse Service Providers

<table>
<thead>
<tr>
<th>Distinguishing Characteristics</th>
<th>Sales-Oriented</th>
<th>Marketing-Oriented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perception of Business</td>
<td>- Warehousing</td>
<td>- Marketing Support</td>
</tr>
<tr>
<td>Perception of Positioning</td>
<td>- Main concern is the performance of warehousing tasks</td>
<td>- Main concern is the distribution network.</td>
</tr>
<tr>
<td></td>
<td>- Sees warehousing as an end</td>
<td>- Sees warehousing as a means to an end</td>
</tr>
<tr>
<td></td>
<td>- Focuses on operations</td>
<td>- Focuses on marketing</td>
</tr>
<tr>
<td>Strategic Approach</td>
<td>- Main concern are facilities and services</td>
<td>- Main concern is the whole marketing support system</td>
</tr>
<tr>
<td></td>
<td>- Emphasizes production concept</td>
<td>- Emphasizes marketing concept</td>
</tr>
<tr>
<td></td>
<td>- Focuses on customers’ warehousing needs</td>
<td>- Focuses on marketing and distribution needs</td>
</tr>
</tbody>
</table>
Thank You
Warehousing to Supply Chain Management

2nd March 2007
WAREHOUSING FOR EFFICIENT SUPPLY CHAIN MANAGEMENT (SCM): THE CRITICALITY

- A critical node in the SCM
  - To provide efficient interlink between various modes of transport
  - To facilitate economical and safe storage
  - Critical role in ensuring continuous supply of goods

- In sum, a facilitator for efficient logistics
TYPES OF WAREHOUSES

A) Products Based
  - Agricultural Warehouses
  - Industrial Warehouses
  - Multi User Warehouses (can warehouse a vast array of products)
  - Chemical/Oil Warehouses

B) Functionality Based
  - Custom Bonded Warehouses
  - General Storage Warehouses
TYPES OF WAREHOUSES...2

C) Mode of Transportation Based
   - Rail Side Warehouses (now picking up in a big way)
   - Road linked Warehouses (like Transport Nagars)
   - Air Cargo Warehouses (have a good growth prospects)

D) Temperature Controlled Warehousing
   - Cold Storage / controlled atmosphere
CHANGING ROLE OF WAREHOUSING IN INDIA

- Significant shift in demand from agro based warehouses to multi product warehouses in urban / semi-urban areas

- Need for integrated transport centers in metros/ mini metros/ industrial towns.

- Need for more exim based warehouses like FTWZs/ ICDs/ Custom Bonded Warehouses
CHANGING ROLE OF WAREHOUSING IN INDIA...2

- Railways consciously moving away from being transporter to a logistics provider by focusing on developing Rail side warehousing

- Air Cargo warehousing on increase with development of metro airports

- Retail based warehousing coming up
FUTURE NEEDS OF WAREHOUSING

• Mega Logistics Park providing
  ▪ ICD based services
  ▪ Exim logistics
  ▪ Domestic logistics
  ▪ True intermodal services i.e. providing at least two modes of transport out of rail/road/air
FUTURE NEEDS OF WAREHOUSING... 2

- Integrated Multi User Warehousing Complex providing
  - Storage for “commodity to computer”
  - Perishables as well non perishables
  - Trading terminal for Agri based products
  - Value added services like Collateral Management etc
FUTURE NEEDS OF WAREHOUSING...3

- Small (2 to 5 acres) warehouses cum terminal markets in each district where agri trade may be easily facilitated

- Retail based Agro Warehouses of large corporate like ITC, Godrej Agrovet, DSCL where farmers can sell their products and purchase groceries of “e-Sagars” of ITC
FUTURE NEEDS OF WAREHOUSING...4

- Retail based “Hyper Markets” in Tier 2 and Tier 3 cities with Retail cum Warehousing infrastructure

- Air Cargo Centers cum Warehouses at mini metros / non metro airports providing integrated services for exim and domestic traffic
## Estimate of Business Space in Warehouse Sector

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Type of Infrastructure</th>
<th>Estimated nos./ demand in next 10 years</th>
<th>Investment Needed Approx. (Rs. In millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ICD cum Logistics Park</td>
<td>50 nos.</td>
<td>75,000</td>
</tr>
<tr>
<td>2</td>
<td>Mega Logistics Park</td>
<td>10 nos.</td>
<td>80,000</td>
</tr>
<tr>
<td>3</td>
<td>Integrated Transport Centers</td>
<td>15 nos.</td>
<td>11,250</td>
</tr>
<tr>
<td>4</td>
<td>Air Cargo Centers</td>
<td>1.50 lac sq.m.</td>
<td>3,000</td>
</tr>
<tr>
<td>5</td>
<td>Agro Warehouse (rural based)</td>
<td>35 mn M.T.</td>
<td>96,250</td>
</tr>
<tr>
<td>6</td>
<td>Retail Based Warehouses</td>
<td>12 mn M.T.</td>
<td>39,600</td>
</tr>
<tr>
<td></td>
<td><strong>Total Investment needed over next 10 years</strong></td>
<td></td>
<td><strong>305,100</strong></td>
</tr>
</tbody>
</table>
SOME SIDE-EFFECTS

• Quality esp life

• Size and weight optimisation

• Packaging- retail and bulk
IL&FS Initiatives in Logistics - Warehousing

- FTWZs
- ICDs
- Integrated Transport Centres
- Air Cargo
- Agro warehousing
Distinguishing Characteristics

- IL&FS provides **Complete Process and Programme Management** from the ‘Concept’ Stage to ‘Implementation’

- Could be extended to mobilizing finance, if required

- Equity Investor Role

IL&FS a ‘Project Developer & not just a Consultant’
ISSUES IN WAREHOUSING DEVELOPMENT

- Difficult Land acquisition process
- Land prices: abnormally high
- No dedicated fund for development of infrastructure in Logistics sector
- High risk of business: dependency
- Typically high initial Capex and tight revenues
ISSUES IN WAREHOUSING DEVELOPMENT

- Legal status to warehousing receipts
WHAT IS THE NEED OF THE HOUR?

- Dedicated support fund for the development of infrastructure in the logistics sector

- Aggressive promotion of the PPP framework by Government

- Legal framework for WRs
Thank You!

dinesh.mittal@ilfsindia.com
IFWLA ANNUAL CONVENTION - 2007

“Warehousing to supply chain management - complementary or supplementary”? 
Warehousing- forwarders facility

Ram Sharma Chunduru
Chairman- FFFAI
Director- IFCBA
President- CHAAH
Business Environment

• Today’s fast paced highly competitive world, companies big or small are expected to achieve same level of performance as mega companies with vast resources.

• Cargo industry is no exception with customers expectations and demands soaring everyday.
Business Demands

- high performance from his Service Providers
- Smooth and efficient internal supply and manufacturing including out sourcing
- Hi-tech warehousing and distribution
- Smooth and timely information flow
Customer expectations

- **Time**: Customer expects predictable, timely delivery

- **Cost**: Customer wants all the costs across the entire supply chain instead of separate costs for each leg of supply chain

- **Information**: On time and before time information of cargo movement by providing seamless flow of information to zero dwell time
Forwarder- Many Business-not one

Import-Export-Transit

Air          Port to Port
Sea          Door to Door
Road         Warehousing
Rail         Distribution
Multimodal   Order
Management   Tracking

NVOCC- Freight Forwarding-
        Customs Clearance
Present Trend

• Indian Forwarders are expanding their range of activities by realizing the potential in the outsourced logistics market.

• India is being touted as the land of opportunity for logistics service providers all over the world.
Present Trend

• India is developing as a major trans-shipment hub for sea-freight
• India is also developing as a major air cargo and express cargo hub
• India will eventually develop as a global warehouse and distribution centre
Forwarder As An Organizer

- TARIFFS
- RULES & PROCEDURES
- LAWS & REGULATIONS
- RATES & ROUTES
- WAREHOUSING & DISTRIBUTION
- INSURANCE
- SECURITY
Warehousing-Forwarders facility

- PAST

- used to perform his activity pertaining to one or two segments

- used to perform when the customer demands

- Talking smaller accounts
Warehousing-Forwarders facility

- At present
- Emerging warehousing and distribution demand by domestic and global retailers
- ‘Need Based to Expectation Based’ service
- Providing total logistics under one roof
Warehousing-Forwarders facility

- Invest in 3PL, 4PL and likes which facilitate integration
- Logistics control of material shipment and processes throughout multiple distribution channels worldwide
Warehousing-Forwarder facility

- Warehousing in different locations
- Warehousing in different types:
  - Dry warehouse
  - Refrigerated warehouse
  - Bonded warehouse
Warehousing-Forwarders facility

- Evenly distributed warehouses, concentrates in big logistical hubs specialized for particular types of goods, such as dangerous goods, foodstuffs subject to temperature regimes, and other goods under domestic, customs or excise goods
Warehousing-Forwarders facility

- Equipped with information system which makes easier for real-time cargo track and trace
- Environmental and security concerns
Warehousing-Forwarders facility

- Conventional storage of goods, occupying the space and time, is gradually being replaced by the complex logistics to manage the goods under way from the Manufacture to the buyer.

- Recent changes in the logistical market between the supplier and buyer call for new services with technological support and information service.
Warehousing-Forwarders facility

- Warehouses are growing more sophisticated to run and involve technology and information support
- Synchronizing flow of information with physical movement of goods through automation, visibility and improved collaboration with customer
• In the present global scenario warehousing in coming days it is an indispensable facility demands by the customer to forwarder.

• Only professional service, with personal touch and some unique value adds like warehousing will help forwarder to retain the client.
Thank you
STRATEGIC ROLE OF WAREHOUSING IN SUPPLY CHAIN MANAGEMENT
“PHYSICAL DISTRIBUTION IS TODAY’S FRONTIER IN BUSINESS. IT IS ONE AREA WHERE MANAGERIAL RESULTS OF GREAT MAGNITUDE CAN BE ACHIEVED AND IS STILL LARGELY UNEXPLORED”

Peter Drucker
WAREHOUSING

• Backbone of the Physical Distribution System ............
and thereby

• The backbone of the entire fulfillment infrastructure
WAREHOUSING AND SUPPLY CHAIN

“Well if you think of the supply chain as a series of veins and arteries moving product from source to consumer, then the warehouse is definitely the heart of such a system. And if the warehouse is the heart, then the Warehouse Management System (WMS) would logically then be defined as the brain”.

Free Supply Chain & Logistics discussion forum
www.supplychainfocus.com
SOME ISSUES TO PONDER!

Can we really do without warehouses?

Is perfect JIT really possible?

Do the world’s leading supply chains really operate without inventory and warehouses?
CRUCIAL IMPORTANCE OF INVENTORY

“A few weeks of inventory can mean the difference between success and failure in our industry”
- Michael Dell, CEO of Dell Computers
WAL-MART AND WAREHOUSING

Apart from its retail outlets, Wal-mart operates 99 Distribution Centres and Transport Offices across the US

“Schneider said its American Port Services subsidiary has signed a "significant" contract to run a 300-employee, 3.4 million-square- foot warehouse Wal-Mart soon will complete in Elwood, Ill., about 10 miles south of Joliet”.

ROLE OF WAREHOUSING IN SUPPLY CHAIN MANAGEMENT

• Perfect matching of demand and supply is a utopian expectation
• Even cross docking requires transit points; even if for few hours
• Zero inventory is a myth
• Both natural and man-made seasonalities dictate production in anticipation of demand
• There is no perfect Pull System in any supply chain. There will always be a Push Arm, however short.
Decoupling Point in Supply Chains

PUSH PROCESSES

PULL PROCESSES

Decoupling Point
Decoupling Point in Supply Chains

PUSH PROCESSES  Decoupling Point  PULL PROCESSES
ROLE OF WAREHOUSING IN SUPPLY CHAIN MANAGEMENT

To hold buffer inventory in a physical distribution system because:

Economies of scale and reduction in set up costs require centralised and continuous manufacturing operations

Whereas demand is discontinuous and sporadic
ROLE OF WAREHOUSING IN SUPPLY CHAIN MANAGEMENT

- Manufacturers are invariably producers of a small range of items in bulk
- Consumers are usually buyers of a large range of items in small quantities
- Bulk breaking, reconstitution of loads, consolidation and customer specific forward delivery require intermediate facilities for such transformation
ROLE OF WAREHOUSING IN SUPPLY CHAIN MANAGEMENT

• Increasingly, the practices of mass customisation, postponement and in-transit mergers are changing the role of warehouses into value addition and distribution centers.

• Even Dell Computers are obliged to operate Supplier Logistics Centres (SLCs) in close proximity to their production units to ensure minimal production cycle times.
STRATEGIC IMPORTANCE OF WAREHOUSING

• Warehouse numbers, locations, sizes and roles have long term impact on supply network operations and logistics costs

• Operational efficiencies can make only marginal difference in otherwise cost inefficient strategic decisions

• Well designed Supply Networks provide long term competitive advantage
WAREHOUSE TO DISTRIBUTION CENTRE

• Hold Inventory-
Concentrate on Storage
• Functions include:-
  – Receipt
  – Storage
  – Order picking and
  – Shipping
• Little if any value addition role
• Batch processing
• Cost minimisation focus

• Hold minimal inventory concentrate on Flow
• Functions include mainly
  – Receipt and
  – Shipping
• Considerable value addition role
• Real- time operations
• Profit maximisation through excellence in Customer Service
VALUE ADDITION IN DISTRIBUTION CENTRES

- Re-labeling
- Repackaging
- Light manufacture
- Assembly
- Kitting
- Product returns
- RFID Labeling
- Reverse logistics
- Sequencing
Supply Chain – In Chains?

Sharat C Misra
President, Boxtrans Logistics
2 March 2007
New Delhi
Links in the Chain

1. The Rail Haul...A Long Journey
2. At the Terminals...Adding Value
3. The Last Mile...Completing the Picture
The Rail Haul-A Long Journey

- Haulage Charges
  - Slab Rates-Heavy Cargo, longer distance.
  - Dead Freight-Payment for empty wagons/containers. FEU?
  - Benchmark with road.
  - No stability. No long term horizon.
The Rail Haul-A Long Journey

- Hub and Spoke
  - Rating-Direct/Via Hub
  - Multiple Handling
  - Volumes needed
  - Transit Times
The Rail Haul-A Long Journey

- Maintenance of Wagons
  - 5% of Haulage Charges
  - Provide for spares, supervision etc.
  - Patterns of Examination
    - Naked Flats only?
    - En-route Examination
    - Basing of Rakes
    - End-to-End, Round Trip, Fixed Km (6000-7500 km) validity.
The Rail Haul - A long haul?

- Transit Issues
  - No guarantees
  - Scheduled Paths

- Capex
  - Wagon Cost – 25 Lacs per Wagon

- Business Model based on rail freight under threat.
At the Terminals-Adding Value

- Types of Terminals
  - Exim-Inland Container Depots
  - Domestic-Domestic Rail Hubs
  - Hybrid-Bonded CFS with Open Rail Facilities
  - Road Connected (small hubs)
  - Dedicated-Large Corporate Customers
At the Terminals-Adding Value

- Planning Issues-Internal
  - Stack Plan, routing plan, design capacity.
  - Facilities to be provided
    - Warehousing, Container Repair, Empty Parks…

- Planning Issues-External
  - Govt. Agencies-Customs, Road Authorities etc. and multiple others – discipline, rules.
  - LAND
At the Terminals-Adding Value

• Value Addition Opportunities
  ○ Transit Cargo
  ○ Warehousing
    • Bonded Cargo
    • Storage and Consolidation
    • Packing, Labeling, Marking
    • Documentation & Customs Clearance
BUT

- COSTS

- CUSTOMER PREPAREDNESS

ISSUES OF SPEED, ACCURACY, QUALITY DEBATABLE

JIT, or ......
SOME QUESTIONS

- Market ready?
- Does it have to be?

- Or, should change be supply – driven?
The Last Mile-Completing the Picture

- Deploying Road Vehicles
  - Availability of Adequate Equipment
  - Own v/s Outsourced
  - Overloading issues

- Road Quality-Door Quality
  - Connectivity
  - Accessibility
  - Reliability
  - Follow up?

- Safety & Security Issues
Selecting a Logistics Service Provider—What to Look For?

- **Hardware:**
  - Wagons, terminals, warehousing.
  - Last Mile-Transport Fleet

- **Support Services-IT, Equipment, Specialised Facilities**

- **Manpower**

- **Industry knowledge**

- **Growth prospects**
To Summarise ...

Identify a Single entity-capable of strategic decision making
Inventory perspective needed
Systems approach- integration, not interfacing
Core competence
Outsource and build synergies.
Thank You
Trends in Retail Warehousing
A Management Perspective

Reliance Logistics Limited
Agenda

- The Need
- Trends & Issues
- Supply Chain Services @ Reliance Logistics
Do we need Warehouses?

Creation
To Consumption

Journey
For Correction

The Flow View of An Organization

Sales

Costs

Profits
Why Do We Need Warehouses?

Creation To Consumption

• Schedule Mismatches
  • Procurement, Manufacturing, Sales, Distribution
• Indivisibles
  • Lot Size-Batch Size-Carton Size-Shipper Size
• Simple Unawareness

Journey For Correction

• Inability to Ensure FIFO
• Product Expiry, Returns, Damages
• Recalls due to Complaints

Business Level Changes (M&A)

JIT Notwithstanding, Inventory needs to be stored along the chain.
**Why Do We Need Warehouses (Cont.)?**

**Creation To Consumption**

- Intra Firm Issues
  - Different Priorities Across Entities
  - Conflicting Measures of Performance
  - Unplanned Actions-Promos, Shutdowns

**Journey For Correction**

- Inter Firm Issues
  - Coercive rather than Cooperative Collaboration
  - Incompatible Schedules
  - Insufficient Communication Across
  - Tax Related...

Is Inventory = Warehouse?
Agenda

- The Need

- Trends & Issues

- Supply Chain Services @ Reliance Logistics
In developed countries, retailing employs between 7% and 12% of the workforce. Wal-Mart is the largest retailer in the world with a total revenues in excess of $250 billion. Only 10 percent of its sales are generated outside its core NAFTA region.

“Push” versus “Pull”:

The traditional supply chain powered by the manufacturing push is becoming a demand chain driven by consumer pull, especially in the developed countries.

Retailing Differences Across the World:

Industrialized countries tend to have a lower distribution outlet density than the emerging markets.

The advanced facilities available in the developed world allow a much higher square footage of retail space per resident, due to the large size of the retail outlets.

On-Time Retail Information Management

Reduced Inventory

Market Information at the Retail Level

Strong logistics capabilities can be used as an offensive weapon to help a firm gain competitive advantage in the marketplace.
Management Models

Own

- Better ability to meet the specific needs of the firm (you design it, you run it)
- Greater perceived control of the operation & confidentiality
- Transparency & Visibility
- Location may also serve as field sales office or field purchasing organization
- Market presence
- Potential use of existing human resources

Contract

- Logistics experts do the work for you
- You are viewed as a customer
- Allows flexibility on manpower
- Depending on volume and inventory fluctuations, may still be cheaper than own
- Allows firm to focus on core competency

Outsourced-3PL

- Conservation of capital
- Reduced risk (keep/don't keep)
- Flexibility
  - Ability to increase/decrease warehouse space quickly
  - Better asset utilization
- Explicit knowledge of costs (a given price)
- Allows firm to focus on core competency
  - A 3PL manages the full scope of logistics operations and administration
  - Induction and Career progression of professionals

Retention of trained resources will progressively become a key issue
Move away from Mega Distribution Centers to a hybrid warehousing model
  - Large Regional & Smaller Forward Stocking Pts
  - Deliveries being made bypassing Distribution Centers
    - Deliver directly to customer
  - Cross Docking to improve turnaround of assets
    - Merge in Transit

Changing Role of Warehousing
  - From Inventory repositories, warehouses are becoming ‘sort and merge’ facilities.
  - The inventory in a warehouse is en-route to delivery
  - A significant amount of the work done in warehouses is being outsourced
  - The warehouse is viewed as a fixed asset, apportioned across available amount of inventory

Warehouse Service Providers are transforming into Supply Chain Service providers.
Technology is changing what is available and what is required
Trends: Warehousing & Distribution

- Warehouse Consolidation – Products of different manufacturers will be consolidated in a warehouse. Reduction in empty space- the savings in the cost of storage will be passed on to the Retailer.

- Carrier Consolidation – Transporters nearest to a 3 PL Warehouse will pick up Full Truck Loads (FTL) from the warehouse. The reduction of freight rates from Less Than Truck Load (LTL) will be passed on to RIL-Hypermarkets.

- Retailer Consolidation – Orders on multiple vendors will be placed by the Retailer together- One Master Purchase Order for the transporter to ship items from multiple retailers. The reduction of freight rates from Less Than Truck Load (LTL) will be passed on to the suppliers.
  
  (Wal-Mart has an multi vendor consolidation (MVC) program- K Mart was resisting the program initially)

Eg: To bring frozen items from the manufacturer to the Hyper market Shelf – The Manufacturer, the Distributor, the 3 PL and the refrigerated warehouse have to pool their resources & systems.
Some Issues

- Outsourcing is still catching up
  - In House vs Outsourced
  - Availability of quality Service Providers
  - Arms Length vs Strategic Outsourcing

- Barriers to Investment
  - Duration of the contract
  - Exit Clause
  - Locations-based on tax optimization vs Supply Chain need
  - Systems: Own vs 3PLs’
Agenda

- The Need
- Trends & Issues
- Supply Chain Services @ Reliance Logistics
Reliance Logistics: Today

- Revenue ~ 1800 Cr (FY 2006-2007)
- Vehicles: 4000 dedicated, 5000 vehicles engaged per day.
- Multi modal Tptn. –Road-Rail-Road
- Own vehicles procurement underway (150 by Mar 06)
- 100 + branches across India.
- ISO 9001:2000 certified by LRQA.
- 73 warehouses (~9 Lac sqft) servicing 2900 customers
- In house expertise in Vehicle Tracking (GPS-CDMA/GSM)

Vision: India’s #1 Integrated and Preferred Logistics Organisation, providing World Class Services with a Global reach
## Distribution Centers @RLL:
www.reliancelogistics.com/www.rll.in

<table>
<thead>
<tr>
<th>Region</th>
<th>Chennai</th>
<th>Kolkata</th>
<th>A'bad</th>
<th>Bombay</th>
<th>Delhi</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Warehouse Managed by RLL</td>
<td>20</td>
<td>9</td>
<td>14</td>
<td>11</td>
<td>19</td>
<td>73</td>
</tr>
<tr>
<td>No. of Warehouse Locations Managed by RLL</td>
<td>12</td>
<td>05</td>
<td>10</td>
<td>9</td>
<td>10</td>
<td>46</td>
</tr>
<tr>
<td>Warehouse Area (in Sq.ft) - RLL</td>
<td>2,25,000</td>
<td>86,000</td>
<td>1,41,000</td>
<td>91,000</td>
<td>3,55,000</td>
<td>8,98,000</td>
</tr>
<tr>
<td>Team (In Nos.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Dist Mgrs</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Distribution Managers</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>W/H Manager / Assistant Managers &amp; W/H in charges</td>
<td>20</td>
<td>9</td>
<td>11</td>
<td>9</td>
<td>14</td>
<td>63</td>
</tr>
<tr>
<td>Distribution Supervisors</td>
<td>80</td>
<td>27</td>
<td>38</td>
<td>19</td>
<td>46</td>
<td>210</td>
</tr>
<tr>
<td>Total Manpower (Trained incl. RDM)</td>
<td>105</td>
<td>39</td>
<td>51</td>
<td>31</td>
<td>64</td>
<td>290</td>
</tr>
<tr>
<td>No. of Labourers.</td>
<td>400</td>
<td>95</td>
<td>260</td>
<td>80</td>
<td>150</td>
<td>2000+</td>
</tr>
<tr>
<td>No. of Sec transportation Customers serviced thru Relogistics</td>
<td>817</td>
<td>173</td>
<td>419</td>
<td>189</td>
<td>724</td>
<td>2946</td>
</tr>
<tr>
<td>Average Sale from the WH /month (in MT)</td>
<td>24000</td>
<td>5000</td>
<td>34000</td>
<td>13000</td>
<td>21000</td>
<td>97500</td>
</tr>
</tbody>
</table>

All warehouses provide inventory visibility, VAS and invoicing, through a cutting edge ERP.
**Services Offered (Distribution Business)**

### Start-Up Services
- Location & Site selection-Leasing
- Project Management for WH commissioning.
- KPI Definition-Performance Audit initiation
- SOP finalisation-ISO 9001-2000 Certification & Training

### Warehousing
- Receipt & Unloading into own WH
- Storage including stacking
- Dispatch & loading into own/customers vehicle

### Distribution
- Transportation to customer premises
- Unloading at customer premises
- Transit Insurance (as reqd)
- Reverse Logistics
- Transport Load Optimisation (Planned)

### Information Related Services
- MIS on stock, despatch
- KPI related MIS
- Invoicing related MIS
- Preparation/submission of excise returns

#### Invoicing
- Order Processing
- Invoice printing
- Related Statutory documentation

### Value Added Services
- Unpacking/Repacking
- Sorting/ Grading
- Labeling/Bar Coding
- Assembly Related services
- Quality Check

### Inventory Management (Planned)
- Re-order Level assessment & finalization
- Stock- aging & FSN Analysis

**Business Model (Premises):**
(1) Leased –Management Agency Model
(2) Own- Distribution Centers Model (In the Pipeline)
Thank You
Warehousing – Value Adding the Supply Chain

IFWLA Convention
New Delhi
Mar 2, 2007
“No more do Companies COMPETE”

What is it then?
“IT IS THEIR SUPPLY CHAINS THAT COMPETE”

The real battle on ground is based on augmenting Logistics *modus operandi*

Consumerism, Brand Neutrality, Substitutability etc.
Basics of Supply Chain Design

- Supply Chain – alignment with Customers’ changing needs
- Linking – Corporate Strategy to the Supply Chain objectives of each market
- Most Supply Chains are not designed – THEY HAPPEN
- Supply Chain – a series of functions & activities? A PROCESS THAT MOVES WITHIN & BETWEEN ORGANISATIONS
Alignment with the Customer’s Demand

- Fulfilling Customer Requests
- The Chain – Supplier’s supplier to Customer’s customer
- Agile & Responsiveness
  - Example: Domino’s Pizza
Supply Chain Strategies

- Direct Model: Eg. Dell Computers
  - Eliminates channel inventories & provides clearest demand signal to the assembler
- Direct to Retail: Traditional Strategy
  - Eg. Madura Garments
- Channel Assembly: Combination of the above two strategies Eg. Compaq-HP
- Co-location: Ease of aggregation. Eg. Amul
- Merge-in-transit: Inventory on wheels. Eg. TKML
SCM Design Basics

- Design for Flexibility & Product variety
  - Postponement till POS. Eg. Asian Paints

- Information Systems & Tracking
  - Especially in food industry – reverse logistics for expiry tracking

- Outsourcing
  - 3PL service providers, “Pay as per Use”
Where do we stand?
Logistics & Supply Chain

- The new Sunrise industry
- Integrated Solutions Vs Fragmented Services
- Lean and Agile processes and systems
- Reversible Vs Irreversible decisions
- Supply Chain capability becomes key differentiator
Solutions for the Industry

Transportation Management
• Express Cargo Distribution
• Freighterer Operations
• Warehouse Management
• Cold Chain
• Courier & Air Cargo
• Customs Clearance & Freight Forwarding
Warehousing Management

Value Added Services
- Dell Computers
- P & G
- Asian Paints

Warehouse Infrastructure
- Flooring
- Class of Construction
- Height
Warehousing Management (contd).

- Flexibility & Scalability
- Ergonomics, Layout, Time & Motion analysis (eliminate *muda*)
- Light Manufacturing & Assembling
- Aggregation Facility (eg. Auto industry)
- Pay-as-per-use Model
- EDI & Real Time Inventory Tracking
Warehousing Management (contd).

- Agility (eg. Critical Medical Logistics)
- Multi-user Facilities
- Integrated – Collaborative – Adaptive
- Taxation Impact
- Ergonomics
- Softer Issues (work environment, socio-politico issues etc)
Impetus for the Paradigm Shift

- Changing Dynamics in:
  - Retailing
  - Commodities
  - Cross-border trade & commerce
  - FTAs
  - SEZs

- Emerging Technologies (VMI, RFID etc)
- State as the enabler (eg. ILFS, IDFC etc)
- Simplified Taxation Structure (eg. VAT)
The Future Looks Bright as we now stand admiring the rainbow in front of us ...

Waiting for the Sunrise
Thank You
PRESENTATION ON
“Container Transportation In India – An Integrated Approach”

BY S.S. RANGNEKAR, DIRECTOR
THE SHIPPING CORPORATION OF INDIA LTD.

AT THE IFWLA CONVENTION 2007
NEW DELHI
ON 2ND MARCH, 2007
INDIAN ECONOMY & CONTAINER SHIPPING – AN OVERVIEW

- India 7th largest, 2nd most populous country & world’s 5th largest economy (PPP)
- Amongst the fastest growing economies (BRIC), aiming at 10% GDP growth
- Rich Maritime Tradition – Moves 95% EXIM trade by volume & 70% by value
- First maritime container in the world introduced in mid 1950’s; India’s foray in container shipping 1970’s; Gained momentum in the 1980’s
- Containerization in developed world about 65% - 75%; in India about 45% - 48%
- Country’s growing population; rising life expectancy / standards of living; changes in traditional patterns of consumption / savings; emerging Retail wave; advent of SEZs; cluster approach to provide end-to-end services / solutions meeting unique / specific requirements of businesses etc. - Fuel India’s Container trade growth - Projected @ 15 % p.a. or even higher
CONTAINER TRAFFIC HANDLED AT MAJOR INDIAN PORTS

Source: Major Ports of India A Profile: 2005 - 2006
FUTURE POTENTIAL FOR INDIAN CONTAINER TRAFFIC

CARG Between 2000–2001 & 2004–2005 @ 14.47%
GLOBAL SCENARIO -
EVOLUTION OF CONTAINER SHIP SIZES &
FLEET GROWTH

- Avg. Ship Size increased by 150% from 975 TEU (1980) to 2,403 TEU (2006)
  & Largest Ship in World Fleet from 3,057 TEU to 11,000 TEU (↑ 260%)

- Phenomenal rise in sizes to feed Hub & Spoke systems & increased transhipment

- World orderbook nearly 52% (in TEUs) of existing container ship fleet (Dec. 2006) – (125% for ship size >7500 TEU, 113% for 4000-7500 TEU size)

- Estd. CARG (2006-10) for total Fleet: 13.94% p.a.; Post Panamax (>4000 TEU)
  @ 19.5% & Sub Panamax (<4000 TEU) @ 8.27%
Container trade estd. growth @ 9% p.a. However, with massive additional tonnage & new services, freight rates depressed worldwide - trend of declining freight rates to continue – Downward pressure on profitability of container shipping operations.

Need to reduce operating costs coupled with requirement of handling ever increasing cargo volumes – Emerging role of efficiently managed logistics sector to organise / support movement of trade along Supply Chain to markets worldwide.

Container transportation to keep pace with phenomenal changes taking place in port, waterside & landside infrastructure & logistics capabilities - achieve greater economies of scale, operating efficiency & profitability.
TRADE REQUIREMENTS - CHANGES IMPACTING CONTAINER SHIPPING

- With advent of Containerisation, Liner shipping companies transformed from traditional, inefficient cargo handlers to fully cellular vessel operators

- Escalating trade volumes, dynamic trade & transportation patterns – Demand meticulous planning / scheduling, creation / management of enormous infrastructure to deliver goods meeting customer expectations

- Quest for gaining increasing competitiveness in a global economy

- Global outsourcing - dispersed procurement, production / manufacturing; exploring new markets – distribution channels / warehousing facilities

- End-to-end solutions to minimise supply chain cost & obtain better, innovative, customised goods / services

- Accuracy, timeliness, convenience, responsiveness, quality & reliability of Service at most competitive prices
Emergence of e-business, e-buying etc.
Emergence of global benchmarking, best practices, KPI’s etc.
Re-defining of relations between lines & shippers with demands for:
  0 Greater customer focus
  0 On time delivery / delivery flexibility - deal with disruptions in supply chain before substantial damage caused either to customers / other stakeholders
  0 Reduced supply chain & inventory costs
  0 Real time, quality management information systems - pricing & transparency
  0 Supply chain & financial chain integration to yield shorter cash - to - cash cycles & greater returns
  0 Strategic partnerships to deliver supply / value chain solutions
  0 Convergence of different players / roles – Lines, MTOs, Freight Forwarders, CHAs, CFS / ICD operators, Terminal Operators etc.
End Game – Manage End-To-End Global Supply Chains

Ocean Transportation covers a small segment of the total supply chain.

Supplier & Vendor Management
Consolidation Distribution
International Ocean / Air Transportation
Document Delivery
Deconsolidation Distribution
Domestic Multi-Modal Transportation
Warehousing & DC’s
Delivery to Point-of-Sale

Origin services / export management
International freight management
Destination services / import management
Domestic freight management
Warehouse / D.C. Management

To efficiently manage diverse & increasing needs of customers, Industry to evolve strategic clarity (focused business models), standardized business processes, yield / revenue management systems, strategic partnerships with top-tier customers & develop targeted products.
INDUSTRY / CARRIER RESPONSE

- Introduction of larger vessels delivering economies of scale
- Use of the Hub & Spoke System – rationalisation of services
- Paring down of operating expenses by reducing port calls / stay etc.
- Delivering on-going savings through increased efficiency & productivity through M&A, Alliances / Consortia arrangements, synergies through backward / forward integration
- Customer Segmentation / Key Account Management (specialised & customised treatment of Company’s most important accounts / clients for achieving a strategic competitive advantage)
- Adoption of Yield / Revenue Management techniques etc.

INTEGRATED APPROACH - INDIAN CONTEXT

- One-stop shop: A single logistics service provider – manage all logistical activities across regions – enable Customers to focus on their core businesses
- Need truly integrated world-class multimodal transport system: Efficient, cost-effective, seamless movement; real time visibility & control for timely / effective response to variances / exceptions
On-going improvement in efficiency / responsiveness of logistics chain through:

- New Technologies - wireless, internet data mining and some already deployed technologies including RFID (radio-frequency id) tags, sensors etc.

&

- Innovative web-based Solutions & Systems: Revenue Management / dynamic pricing strategies; Risk Management for supply chain planning (Quick response to avoid high costs of not meeting performance expectations - due to incorrect market forecasting / unanticipated developments / delayed delivery)

To sum up:

Logistics sector is becoming an increasingly critical factor for shippers and producers of goods – Hence, imperative to have greater focus on improving Container Shipping industry’s links and integration within the Logistics Value Chain that supports it.
THANK YOU