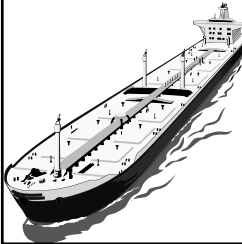


Chapters 9 and 10 ***Transportation Systems and Mgt***



- Transportation's Role in Logistics
- Trans. Modes
- Financial Information
- Regulatory Environment
- Trans. Selection
- Trans. Management

Today's Typical Headlines

- Airline Disaster
- Major Railroads Merge Operations
- Labor Unrest Causes Slowdown
- Fuel Prices Escalate
- Global Alliances are Formed
- Trucking Operations Close Doors

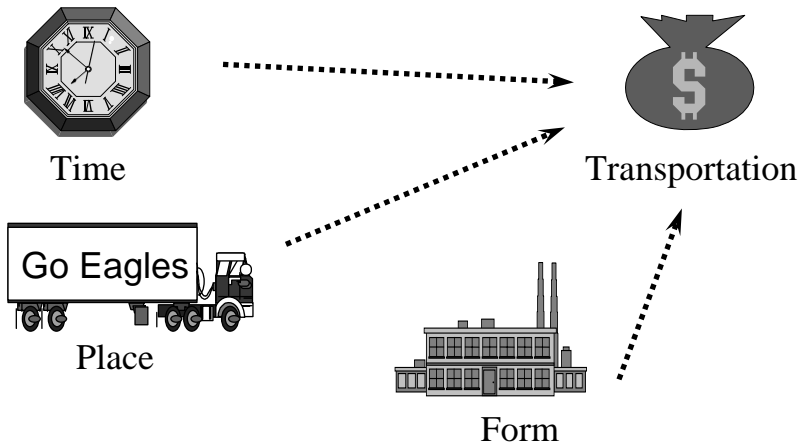
Top 20 LTL Carriers

1979	2003
1. Roadway Express	Roadway Express
2. Consolidated Freightways	
3. Yellow Freight Systems	Yellow Freight Systems
4. Ryder Truck Lines	
5. Mclean Trucking	
6. P.I.E. Nationwide	
7. Spector Freight System	
8. Smith Transfer	
9. Transcon Lines	
10. ETMF Freight System	
11. Interstate Freight System	
12. Overnite Transportation	Overnite Transportation
13. ABF Freight System	ABF Freight System
14. American Freight System	
15. Carolina Freight Carriers	
16. Halls Motor Transit	
17. Mason & Dixon Lines	
18. Lee Way Motor Freight	
19. T.I.M.E. – D.C.	
20. Wilson Freight	



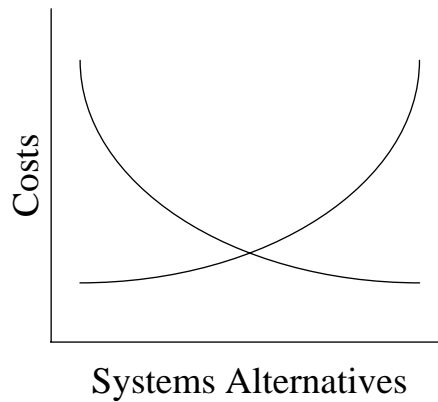
Source: Wes Kemp, VP, ABF

Utilities Created by Transportation



Importance of Transportation

- Major cost of doing business
 - Accounts for 55-60 cents of every logistics dollar
 - Represents a vital, important industry of its own
- Key strategy for reducing inventory costs
- Meeting Logistics customer service requirements



Profound Change is Occurring in the Transportation Sector

- Dynamic, Rapidly-Changing Industry
- Significant Innovation and Progressive Management of Transportation Firms
 - Marketing concept
 - Total quality management
 - “Reengineering”
 - Logistics orientation
- Very Competitive Market Environments
 - More competition; more innovation
 - Greater pricing and service flexibility
 - Expansion of carrier services across modal lines
 - Carrier partnerships
- New Pressures Emerging
 - Cost containment
 - Labor issues
 - Capital availability and cost

Transportation Costs as a Percentage of Product Prices

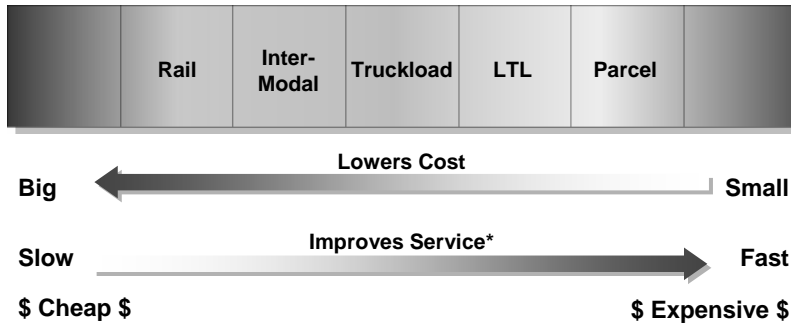
High-cost Sectors	Stone, clay and glass	27 %
	Petroleum products	24 %
	Lumber and wood	18 %
	Chemicals	14 %
	Food and kindred products	13 %
	Furniture and fixtures	12 %
Medium-cost Sectors	Paper and allied products	11 %
	Primary metals industries	9 %
	Textile mill products	8 %
	Fabricated metal products	8 %
	Miscellaneous manufacturing	8 %
	Transportation equipment	8 %
	Rubber and plastics products	7 %
Low-cost Sectors	Tabacco manufactures	5 %
	Machinery, w/o electrical	5 %
	Insturments	4 %
	Apparel and other textiles	4 %
	Printing and publishing	4 %
	Electrical and electronic	4 %
	Leather and leather products	3 %

Source: Data Resources, Inc. Study, 1983.

Modes of Transportation

- highly efficient for moving large quantities of gas and liquid
- provides fast delivery at a high cost
- for bulky products that are not time sensitive
- highly flexible, relatively fast, for short to medium distances
- low cost, best for bulk goods going long distances

Transportation Spectrum Diagram



*T/L is generally faster than LTL, but not always as readily available

Cost Trade-Offs in Physical Distribution



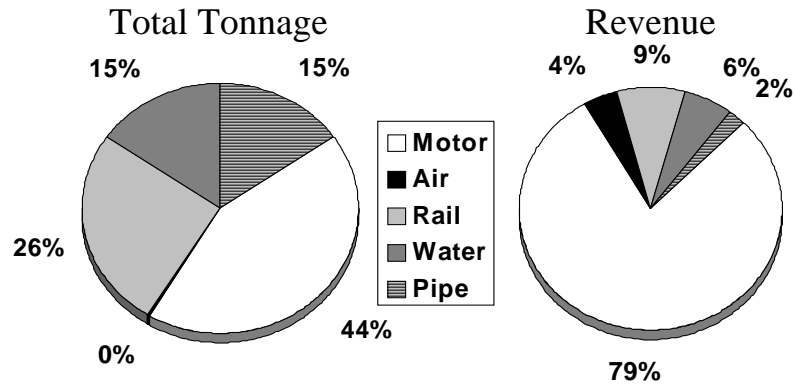
?



Faster
Very Expensive
Safe

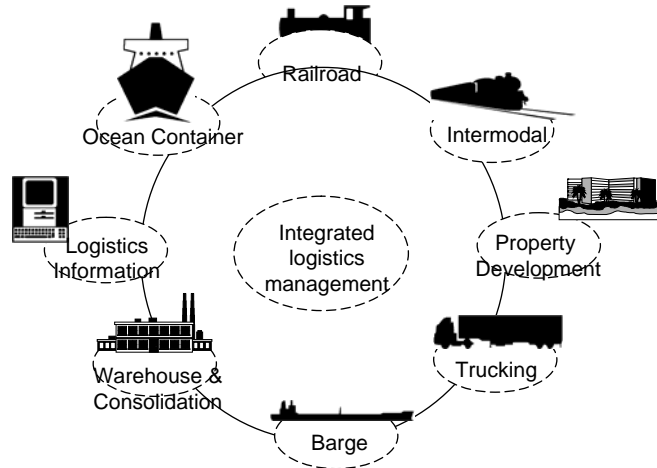
Slower
Moderate Expense
High Access

Total Freight Modal Shares



CSX Corporation

Multimodal Multi Country Multifunctional



2000 Selected Industry Financial Information

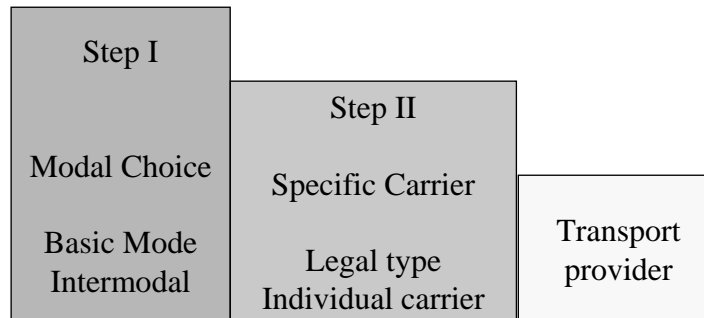
Company	Mode ^a	Sales (\$ millions)	Other Modal Activity
UPS	Pkg	\$29,800 ^b	Air Cargo, Logistics
Federal Express	Air	15,597	Business Logistics Services
Union Pacific	Rail	10,700	Overnite Trans.
Burlington Northern-SF	Rail	9,205	
Norfolk Southern	Rail	6,159	Motor (NAVL)
CSX Transportation	Rail	6,075	Barge; Motor
Roadway Express	LTL	3,040	Package; Logistics
Yellow Freight System	LTL	2,778	Yellow Logistics
Con-Way	LTL	2,045	
USFreightways Corp.	LTL	1,912	(regional)
J. B. Hunt	TL	1,515	J. B. Hunt Logistics
Landstar	TL	1,415	
Arkansas Best Corp (ABF)	LTL	1,379	(regional)
Swift Transportation	TL	1,259	
Werner	TL	1,215	
American Freightways	LTL	986	(regional)
Kansas City Southern	Rail	572	
Knight Transportation	TL	207	Little Rock Based

^a Carriers classified by their largest revenue source - ^b UPS revenues from company

Source: Logistics Management and Distribution Report, July 2001

How to Compare the Basic Modes of Transportation

- Cost/Price
- Market Coverage
- Degree of Competition
- Predominant Traffic Types
- Avg. Length of Haul
- Equipment Capacity



Principal Carrier Selection Determinants

- Cost
- Transit time
- Reliability
- Capability
- Accessibility
- Security
- Information



Ranking of Selection Determinants

Determinant	Rank
Transit time reliability or consistency	1
Door-to-door trans. costs or rates	2
Total door-to-door transit time	3
Willingness of carrier to negotiate rate changes	4
Financial stability of the carrier	5
Equipment availability	6
Frequency of service	7
Pickup and delivery service	8
Freight loss and damage	9
Shipment expediting	10
Quality of operating personnel	11
Shipment tracing	12
Willingness of carrier to negotiate service changes	13
Scheduling flexibility	14
Line-haul services	15
Claims processing	16
Quality of carrier salesmanship	17
Special equipment	18

Source: Bardi, et. al. "Motor Carrier Selection in a Deregulated Environment," *Transportation Journal*, Fall 1989

Performance Rating of Modes

Selection Determinants	Railroad	Motor	Modes Water	Air	Pipeline
Cost	3	4	2	5	1
Transit time	3	2	4	1	---
Reliability	2	1	4	3	---
Capability	1	2	4	3	5
Accessibility	2	1	4	3	---
Security	3	2	4	1	---

Saturn Corporation Carrier Selection Determinants

- Management Philosophy
 - Overall management style
 - Interest in partnership relationships
 - Willing to innovate?
 - Labor
- Service
 - High service standards and commitment to perform?
Information on performance available?
 - Currently involved in JIT services?
- Operations
- Finance

Transportation Initiatives at Shipper Firms Today

- Improved Planning and Control of Transportation
- Concentration of Business Into Fewer Suppliers
- Shift from Transactional to Contractual Basis
- Integration of Transportation Needs with Broader Logistics Requirements
- Reengineering Transportation Strategies
- New Partnerships Forming

Enhanced Responsibilities for Today's Shipper Trans. Managers

- Broader Scope of Responsibilities
 - Carrier Selection
 - Rate/Service/Contract Negotiation
 - Tracing, Expediting, and Claims
 - Freight Bill Payment
 - Shipment Planning
 - Private Fleet Management
- Upgraded Set of Accountabilities
 - Cost Containment
 - Customer Service
 - Overall Quality and Customer Satisfaction
- Greater Awareness of and Interest by Executive-Level Management

Trends in Automation of the Shipper Transportation Management Function

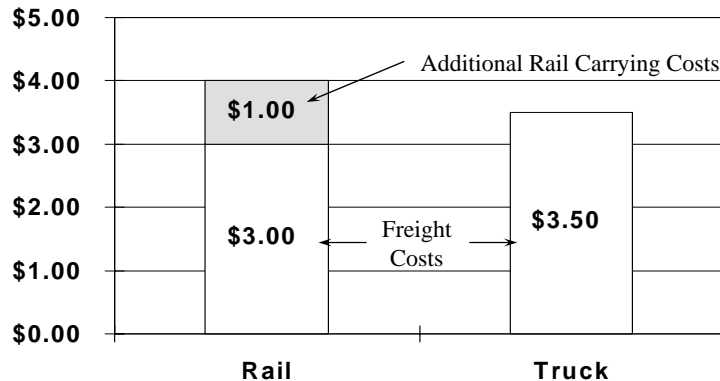
Traffic Activity	% of Time & Effort	Percent Automated		
		1980	1990	1995
Rate Negotiation	22.8%	4.7%	19.0%	32.0%
Carrier Selection	13.9	8.4	22.7	41.1
Private Fleet	13.7	5.4	17.4	33.0
Billing/Auditing	9.8	17.1	46.4	75.7
Routing	9.1	13.9	38.3	62.8
Carrier Assignment	9.0	12.1	29.6	56.1
Tracing/Expediting	7.2	9.5	30.7	57.7
Claims	6.1	7.2	25.2	44.4

Source: LaLonde, et. al., *The Evolution, Status, and Future of the Corporate Transportation Function*, AST&L, 1991

Shipper Preference: Logistics Cost Savings

Automotive Transmissions

from Willow Run, Michigan, to Lordstown, Ohio



Source: Conrail

Transportation Firms Are Adopting A Marketing Orientation

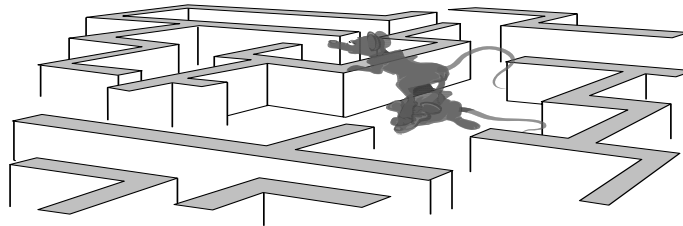
Sales-Orientation

- Focus on Transportation as an end in itself
- Emphasis on internal priorities
- Reactive
- Transactional
- Limited outlook on customer needs
- Match customer to existing capabilities
- Overall approach
 - Sell
 - Sell
 - Sell

Marketing-Orientation

- Emphasis on broader logistics context; transportation as a means to an end
- Priority on customer needs and requirements
- Anticipatory; proactive
- Partnership; contractual
- Perspective on the customer's customer
- Develop capabilities to meet needs of customers
- Overall approach
 - Identify customer needs
 - Identify alternatives
 - Match capabilities w/needs

End of Section #3



- Exam 3 will cover material to this point
- Study guide will be posted on the Internet
- Exam will be about 35 multiple choice, unless you voted differently
- Remember Page 3 of the *Language of Logistics*