

Chapter 1: Supply Chain Management: An Overview

Five major forces are driving changes in logistics and supply chain management:

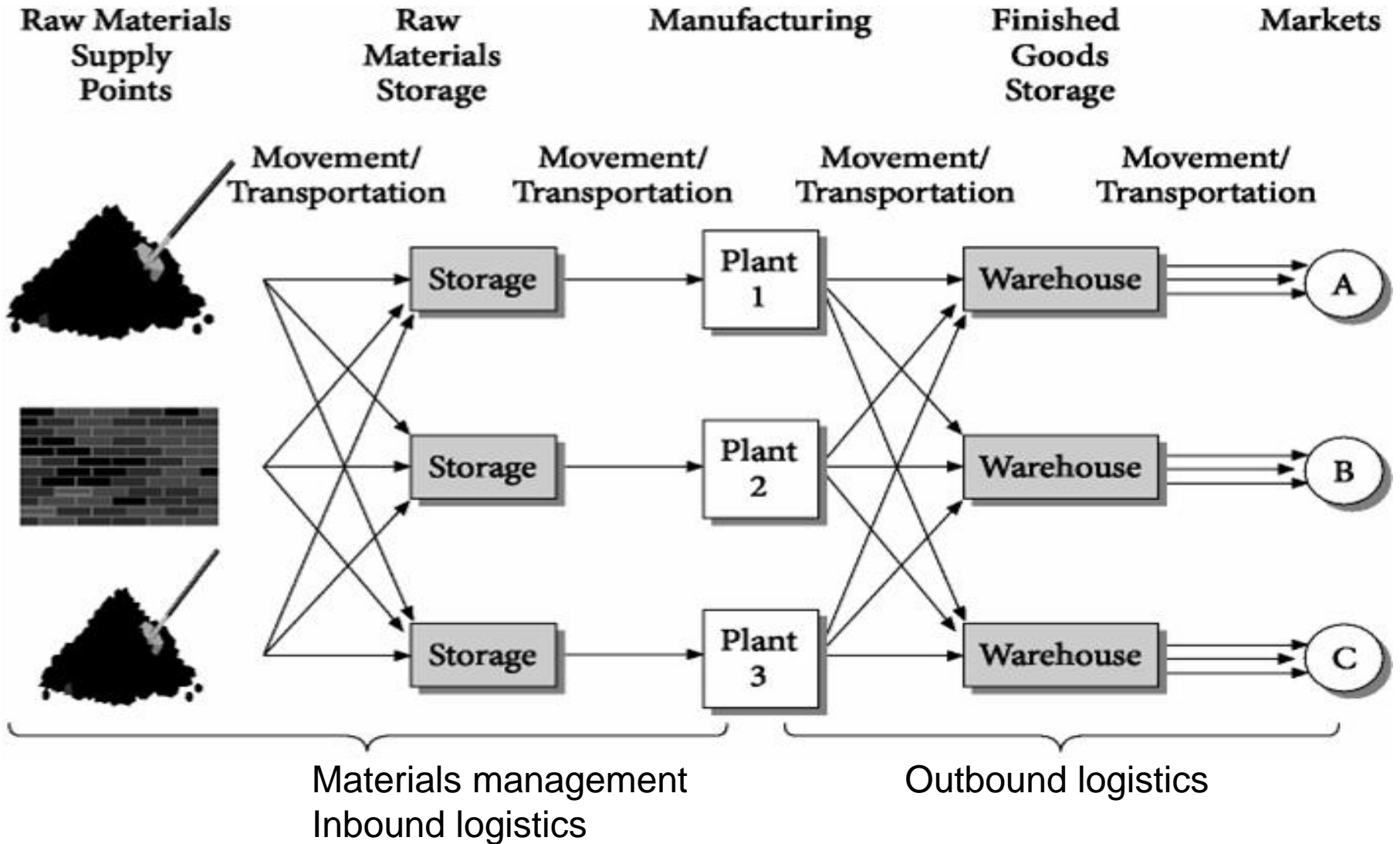
- globalization
- technology
- organizational consolidation
- the empowered consumer
- government policy and regulatory reform



Development of the Supply Chain Concept

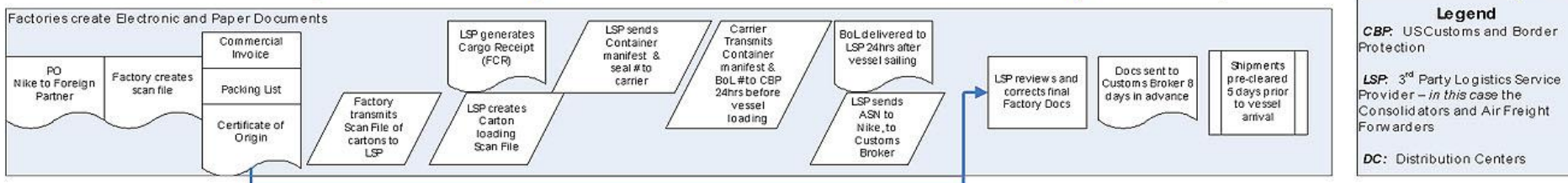
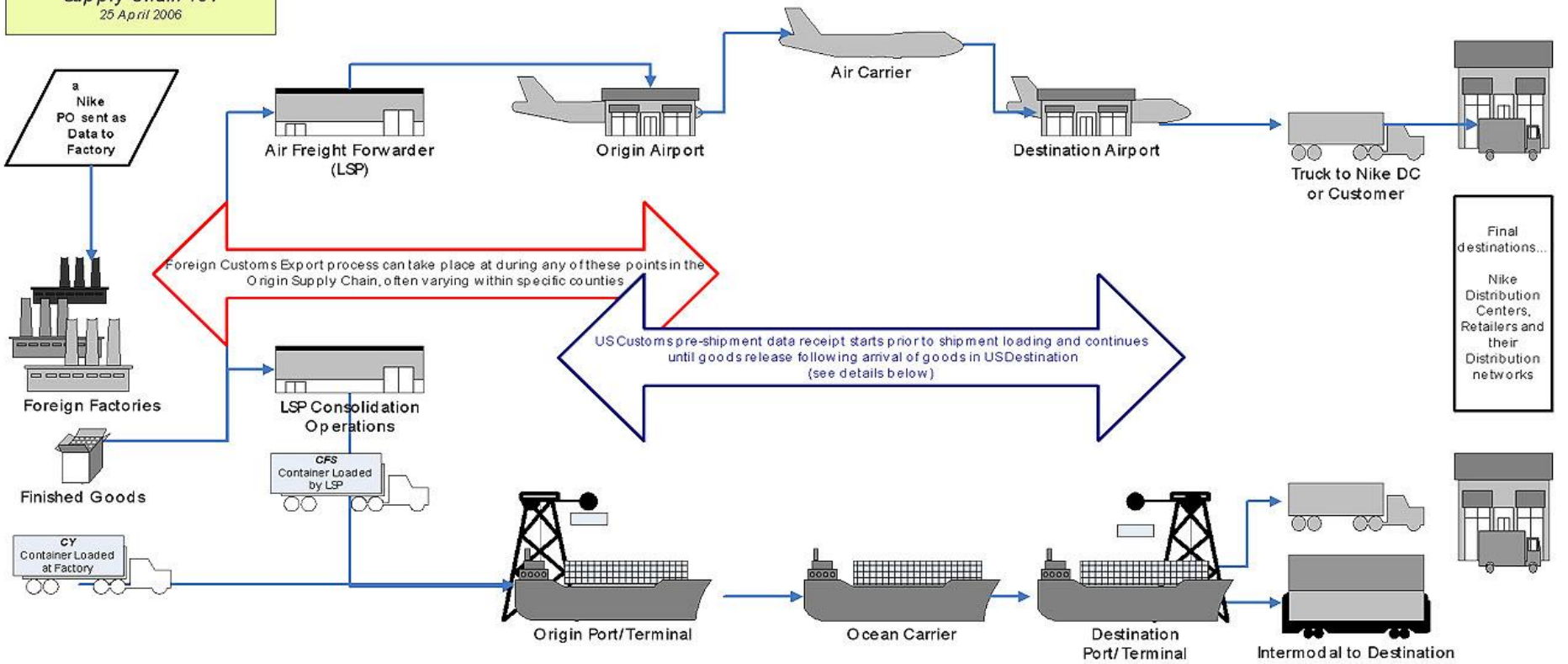
- Started in the 1960s, with the development of the physical distribution concept for finished goods
- During the 1980s, the integrated logistics management concept developed
- The total cost concept is important in logistics management
- Supply chain management can be viewed as a pipeline for the efficient and effective flow of products/materials, services, information, and funds

A View of Business Logistics in a Company



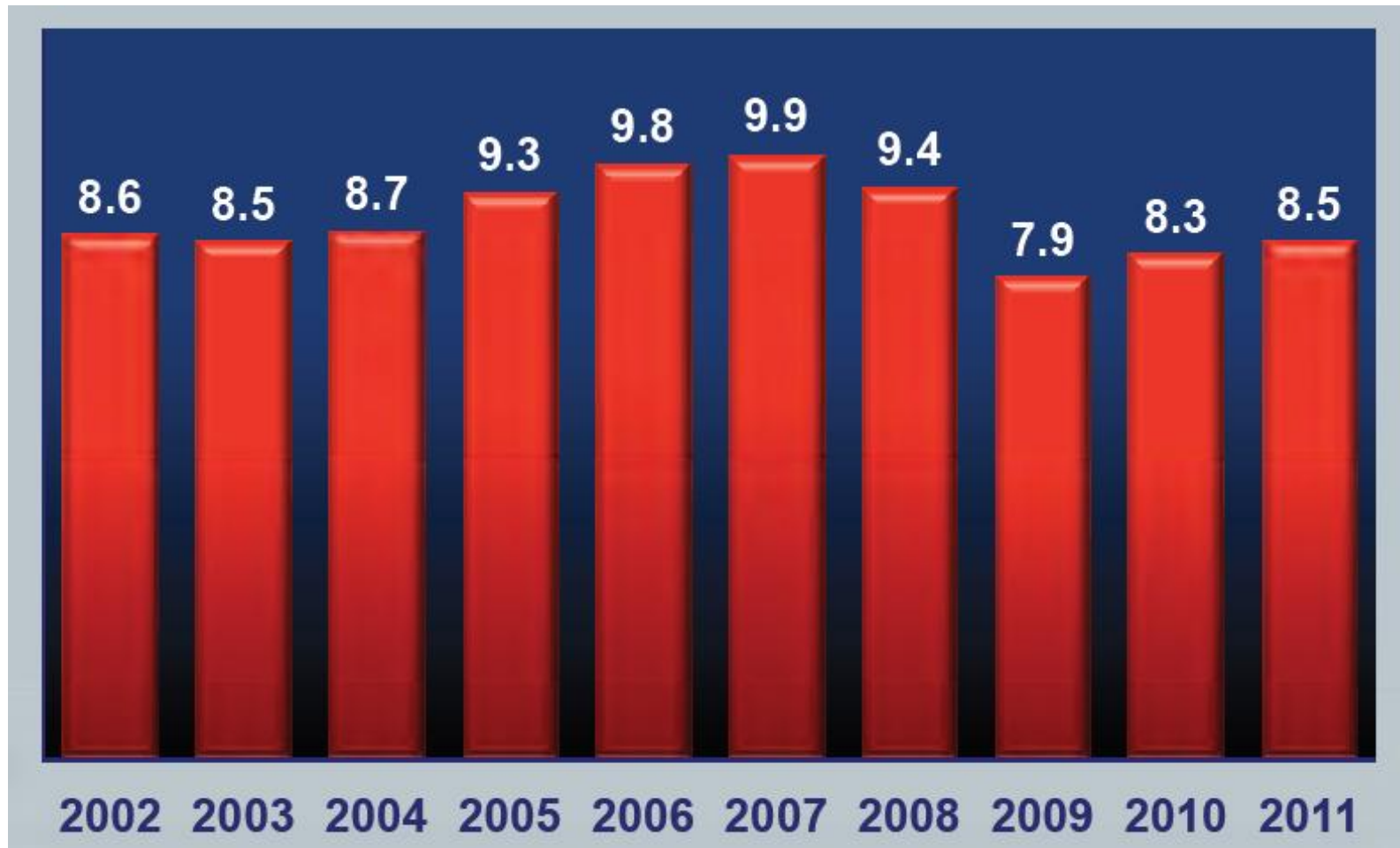
Nike Supply Chain

Supply Chain 101
25 April 2006



Legend
CBP: US Customs and Border Protection
LSP: 3rd Party Logistics Service Provider – *in this case* the Consolidators and Air Freight Forwarders
DC: Distribution Centers

US Logistics Cost as % of GDP



US Logistics Cost % of GDP Trend

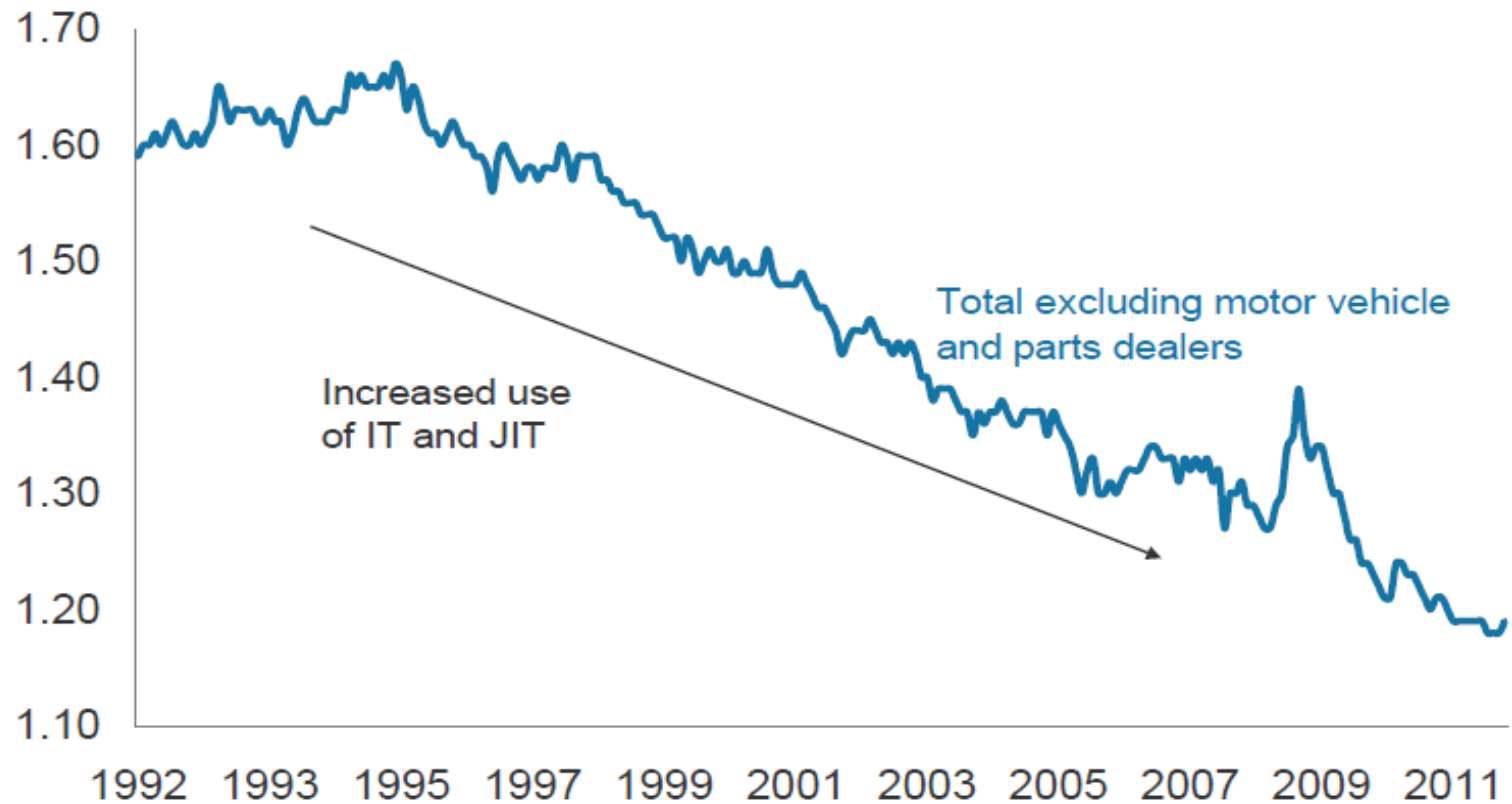
YEAR	NOMINAL GDP \$ TRILLION	VALUES OF ALL BUSINESS INVENTORY	INVENTORY CARRYING RATE	INVENTORY CARRYING COSTS	TRANSPORTATION COSTS	ADMINISTRATIVE COSTS	TOTAL U.S. LOGISTICS COST	LOGISTICS % OF GDP
1981	3.13	747	34.7%	259	228	19	506	16.2
1985	4.22	847	26.8%	227	274	20	521	12.3
1990	5.80	1041	27.2%	283	351	25	659	11.4
1995	7.41	1211	24.9%	302	441	30	773	10.4
1996	7.84	1240	24.4%	303	467	31	801	10.2
1997	8.33	1280	24.5%	314	503	33	850	10.2
1998	8.79	1317	24.4%	321	529	34	884	10.1
1999	9.35	1381	24.1%	333	554	35	922	9.9
2000	9.95	1478	25.3%	374	594	39	1007	10.1
2001	10.29	1403	22.8%	320	609	37	966	9.4
2002	10.64	1451	20.7%	300	582	35	917	8.6
2003	11.14	1508	20.1%	304	607	36	947	8.5
2004	11.87	1650	20.4%	337	652	39	1028	8.7
2005	12.64	1750	22.3%	390	739	46	1175	9.3
2006	13.38	1859	24.0%	446	809	50.2	1305	9.8
2007	14.03	2015	24.1%	485	855	54	1394	9.9
2008	14.29	1963	21.4%	420	872	52	1344	9.4
2009	13.94	1827	19.3%	352	705	43	1100	7.9
2010	14.53	2022	19.2%	388	768	47	1203	8.3
2011	15.09	2184	19.1%	418	815	49	1282	8.5

The U.S. Business Logistics System Cost is the Equivalent of 8.5 Percent of Current GDP in 2011

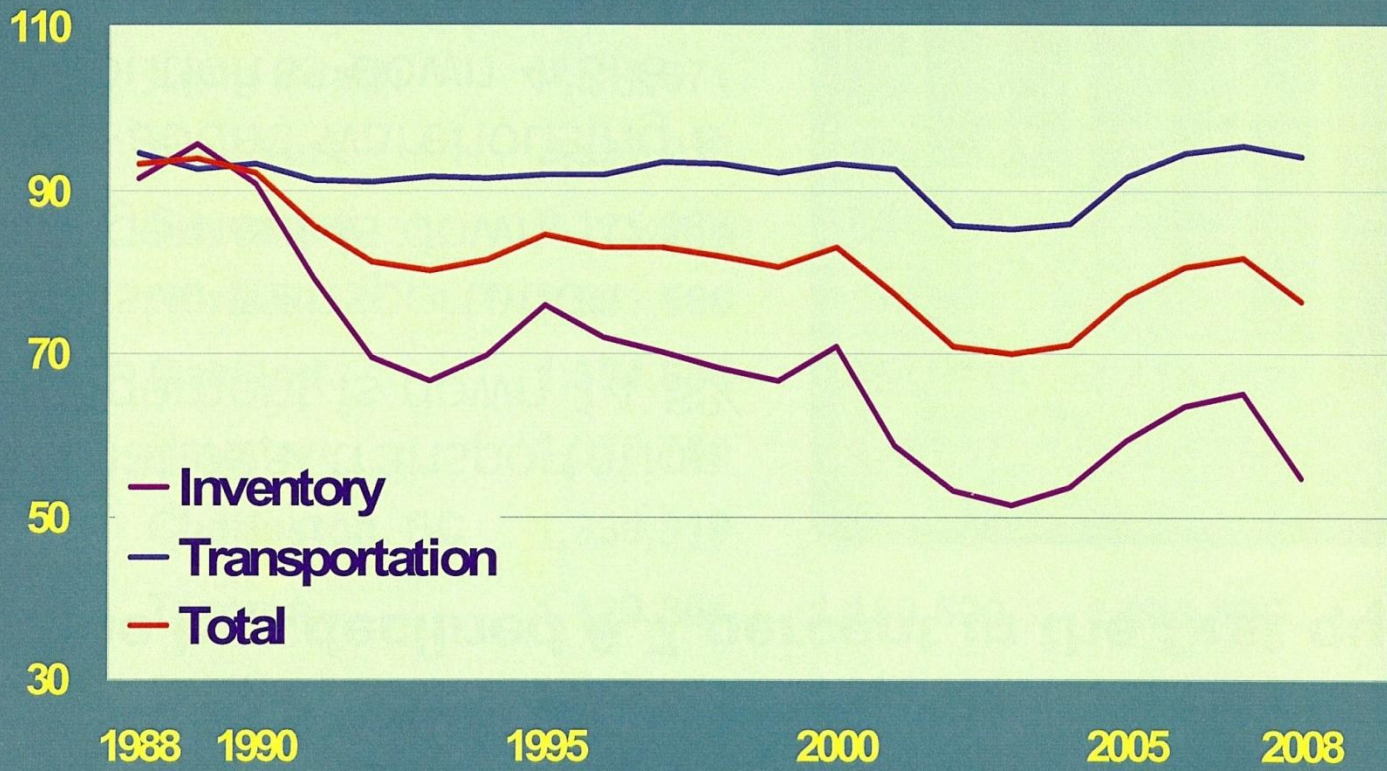
	\$ Billions	
Carrying Costs - \$2.184 Trillion All Business Inventory		
Interest	3	
Taxes, Obsolescence, Depreciation, Insurance	294	
Warehousing	120	
Subtotal	418	32.6%
Transportation Costs		
Motor Carriers		
<i>Truck – Intercity</i>	431	
<i>Truck – Local</i>	198	
Subtotal	629	
Other Carriers		
<i>Railroads</i>	68	
<i>Water (International 28, Domestic 5)</i>	32	62.8%
<i>Oil Pipelines</i>	10	
<i>Air (International 16, Domestic 15)</i>	32	
<i>Forwarders</i>	35	
Subtotal	177	
Shipper Related Costs	10	
Logistics Administration	49	4.6%
TOTAL LOGISTICS COST	1,282	

US Retail Inventory/Sales Ratio Declined Through IT and JIT Development, 1992-2011

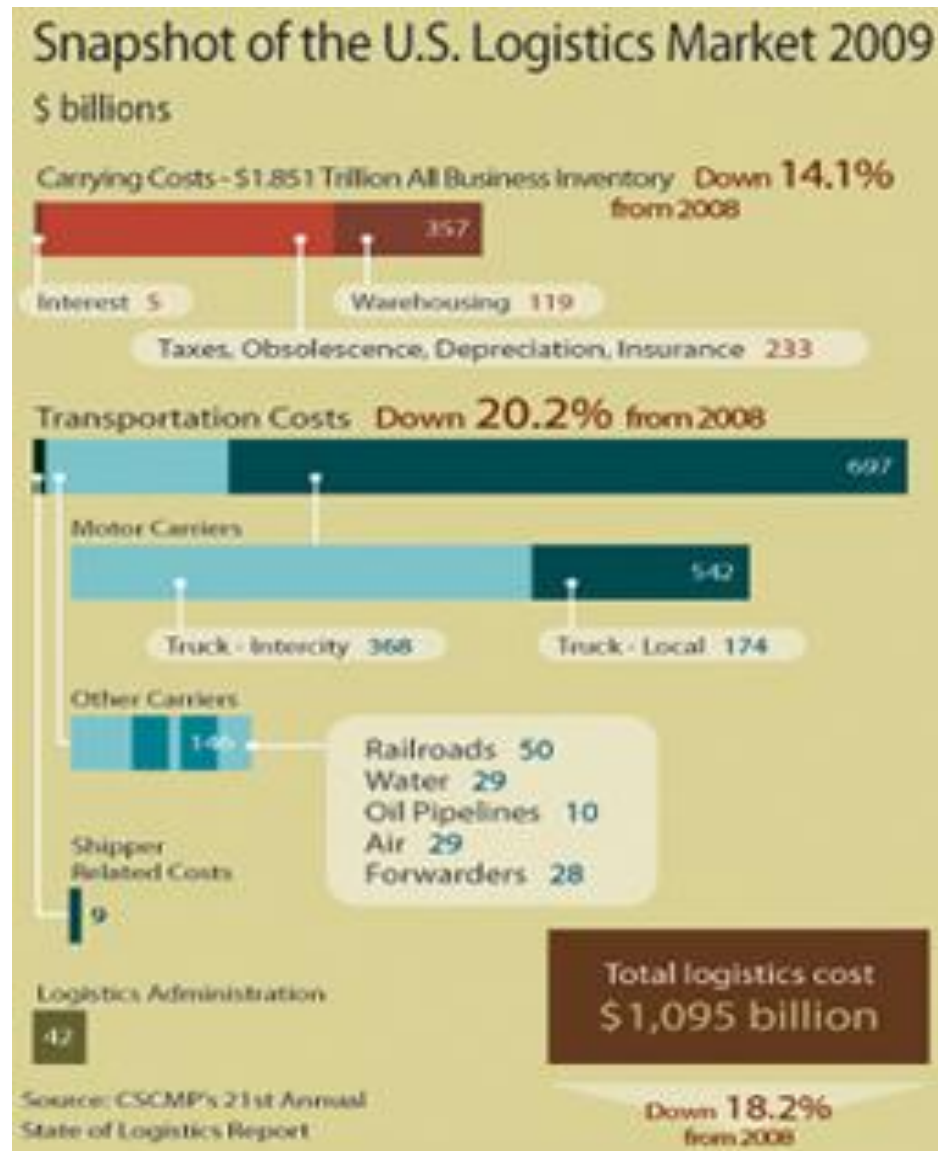
Inventory/Sales Ratio (Seasonally Adjusted)



Index of Logistics Costs as a Percent of GDP 1988 - 2008

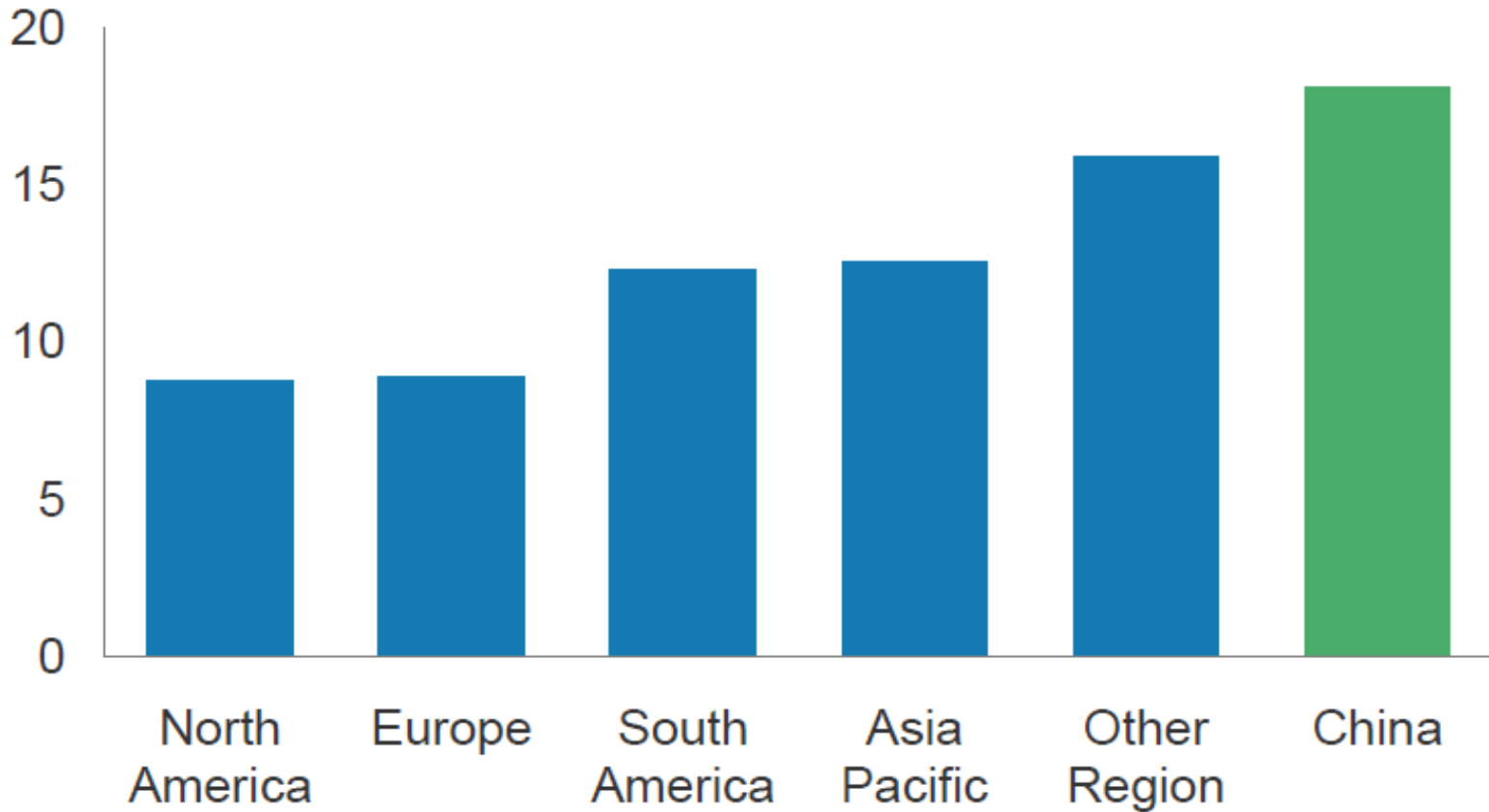


US Logistics Cost Fell to 7.7.% of GDP in 2009



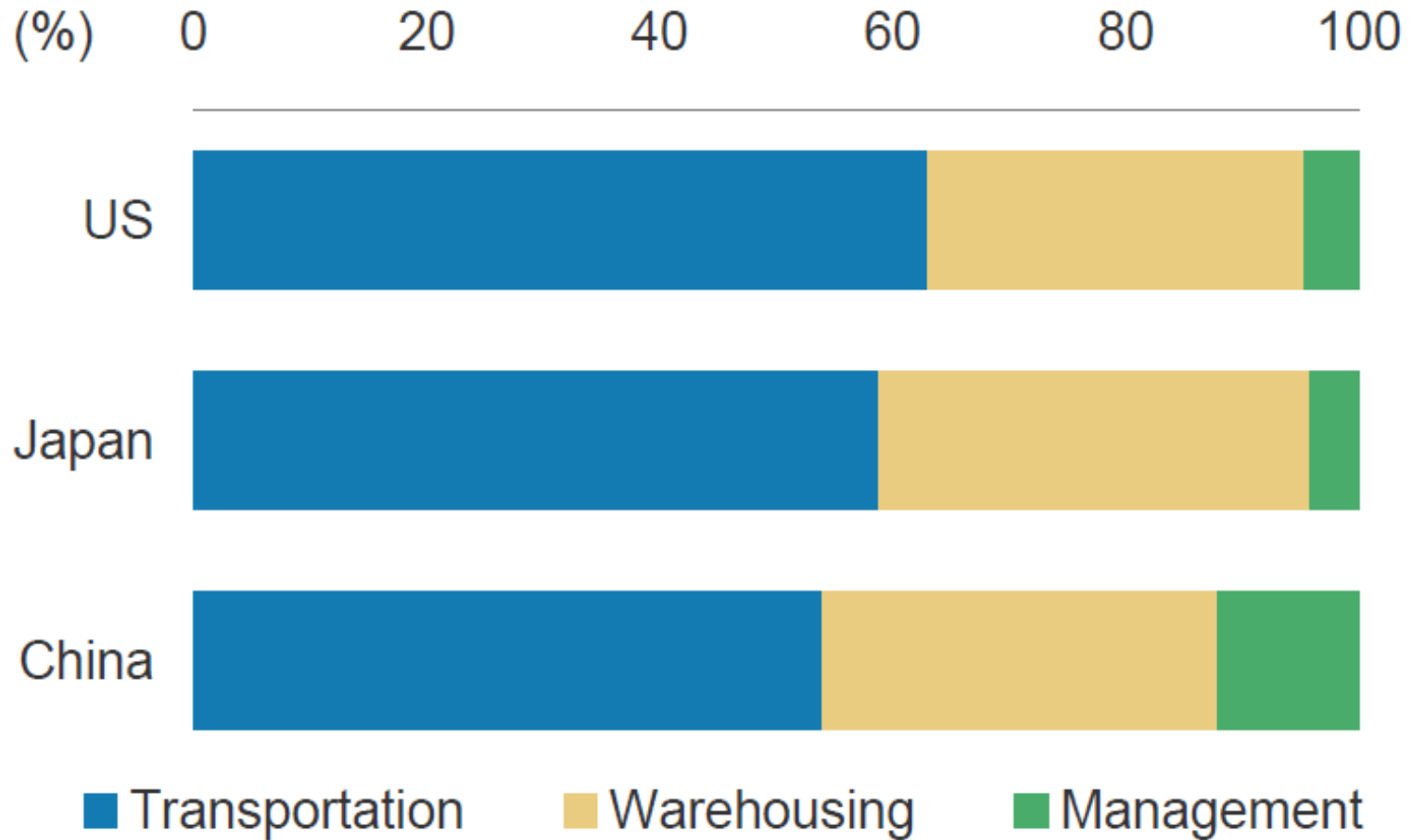
China Has Highest Logistics Costs to GDP, 2010

Region ranking in Logistics (GDP %)



Source: Armstrong Associates, Morgan Stanley Research

China Spends More of Logistics Costs on Management: China vs. US / Japan in 2010



Source: CEIC, Morgan Stanley Research



Major Supply Chain Issues

□ Technology Application

- Challenge is to select and implement technology successfully

□ Logistics Management

- Getting the right product, to the right customer, in the right quantity, right condition, at the right place, right time, and the right cost

□ Supply Chain Security

- Important concern since 9/11 terrorist attack

Optimizing the Supply Chain



Inventory Optimization

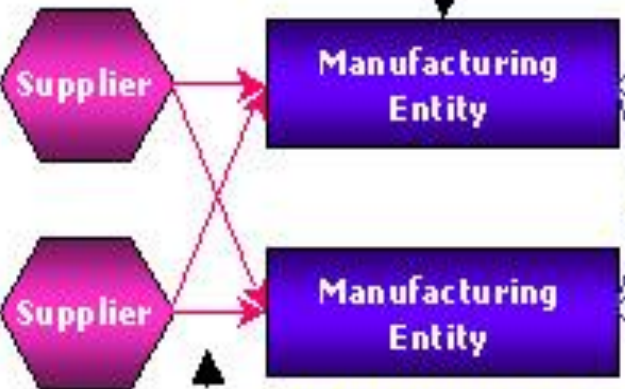
Where & how much to stock ?



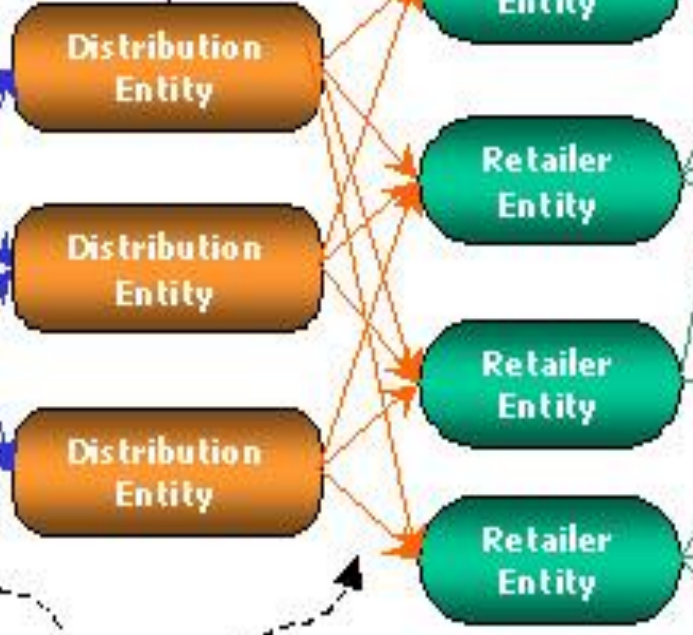
Delighting Customers

Which retailer to service which customers ?
Service level ?
Response time ?

Which supplier to buy from ?



What, where & how much to make ?



Transportation Optimization

What mode to use ? Fleet size & mix ?