International Logistics

Management



dr Marian Krupa

AGENDA:

- 1. Introduction to the International Logistics Management
- 2. International Supply Chain Management (SCM)
- IT and International Logistics Management ERP software overview
- 4. International transportation systems
- International logistics structures and networks management
- Strategic and operational information management in Logistics towards Global Business Intelligence.
- International Logistics Management case study

2. Supply Chain Management in the global perspective

SCM / integration / collaboration
Incoterms / International trade
Globalization / Key trends
Logistics Performance Index: LPI 2015+



Supply Chain Management - definitions



SCM – Four perspectives on logistics and supply chain management:

Traditionalist



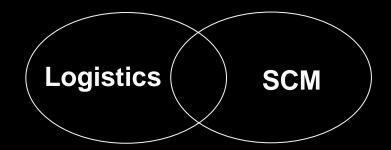
Unionist



Re-labelling



Intersectionist





SCM — origin of the concept

- ✓ SC Management (SCM) the term was originally introduced by consultants in the early 1980s. (Keith Oliver)
- It was assumed at that time that SCM is much wider than logistics concept (Unionist School).
- ✓ The origin definition: Supply chain (SC) network of organizations that are involved in the different processes and activities that produce value for the ultimate customer. (M. Christopher).

Mangan, Lalwani, Butcher, Global Logistics and Supply Chain Management, Wiley & Sons, 2008.



- ✓ SCM the management across a network of upstream and downstream organisations of 1) material, 2) information and 3) resource flows that lead to the creation of value in the form of products and/or services (M. Christopher).
- ✓ Upstream (Supply side) supplier is at the end of the supply chain (Push strategy).
- ✓ **Downstream (Demand side)** <u>customer</u> is at the end of the supply chain (Pull strategy).





✓ SCM (definition 1) – encompass a number of key flows:

- physical flows of materials
- flows of information that inform the supply chain (SC)
- resources which help supply chain to operate effectively (people, energy, buyers' markets etc.).

(M. Christopher)



- ✓ SCM (definition 2): encompasses (Council of Supply Chain Management Professionals)
 - the planning and management of all activities involved in
 1)sourcing, 2) procurement, 3) conversion, and 4) logistics management (Unionists).
 - It also includes the <u>crucial components of <u>coordination</u> and <u>collaboration</u> with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers.
 </u>
 - In essence, supply chain management INTEGRATES supply and demand management both within a single organization and across a group of companies.



- ✓ SCM (definition 3): (Lambert / Global supply chain forum)
 - Supply chain management is the integration of key business processes across the supply chain for the purpose of creating VALUE for customers and stakeholders.



- ✓ SCM (definition 4):

 (Mentzer)
 - Supply chain management is the systematic, strategic coordination (the balance) of:
 - 1) the traditional business functions (logistics!) and
 - 2) the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole.



- ✓ SCM vs Logistics (What's new? final conclusion):
 - ✓ The network of organizations management;
 - The need for collaboration (access to information) across the network;
 - The entire supply chain integration and optimization management model;
 - Long term (strategic) approach;
 - IT implementations to control complexity of the network;

Integration vs Collaboration



- ✓ Integration vs Collaboration
 - Integration: the alignment and interlinking of business processes (flow integration of business model / processes / technology / IT).

 Collaboration: relationship between supply chain partnes developed over period of time (human based relationships).



- ✓ Four primary modes of INTEGRATION (SCM):
 - Internal integration: cross-functional integration within one organisation.
 - Backwork integration: the process of integration starts and is constacted from a retailer (pull strategy).
 - Forward integration: the process of integration starts from supplier (push strategy).
 - Mixed integration: the total integration rare, however theoretically ideal, the best for SCM.



✓ COLLABORATION principles:

- Trust vs Loyalty. Business partners have to make axiological decision:
- from customer point of view: it is trust or don't trust approach;
- from seller point of view: it is to be loyal in regard to your customer (business partner) or not.
- In most cases both business partners are just too afraid, from one hand 1) to implement trust strategy and 2) loyal approach form the other.



- COLLABORATION principles:
 - The business partners dillema [Straffin]:

Payoff matrix (The game theory)

	Your patner (Supplier)		
		Be loyal	Do not be loyal
You (CUSTOMER)	Trust	A [9;9]	B [-10;10]
	Do not trust	C [10;-10]	D [-9;-9]



- ✓ International SCM problems and obstacles (1/3):
 - Distribution Network Configuration: <u>large and different</u> number of location and network missions of suppliers, production facilities, distribution centers, warehouses, cross-docks and customers;
 - Distribution Strategy: questions of <u>operating control</u>
 (centralized, decentralized or shared); delivery scheme, e.g.,
 direct shipment, pool point shipping, cross docking, direct store
 delivery (DSD), closed loop shipping;



- ✓ International SCM problems and obstacles (2/3):
 - Trade-Offs in Logistical Activities: Trade-offs may increase the total cost if only one of the activities is optimized. It is therefore imperative to take a systems approach when planning logistical activities.
 - Information: Integration of processes through the supply chain to share valuable information, including demand signals, forecasts, inventory, transportation, potential collaboration, etc.



- ✓ International SCM problems and obstacles (3/3):
 - Inventory Management: <u>defining</u> quantity and location of inventory, including raw materials, work-in-process (WIP) and finished goods.
 - Cash-Flow: Arranging the payment terms and methodologies for exchanging funds across entities within the supply chain.
 - Cultural differences: language, <u>different</u> historical background,
 different law systems, accounting systems, business ethos, etc

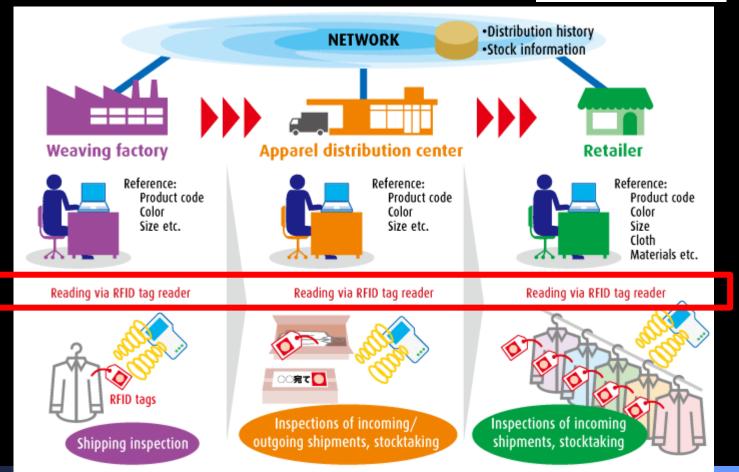
Supply Chain Management - Case study

SCM – example (1): Apparel industry





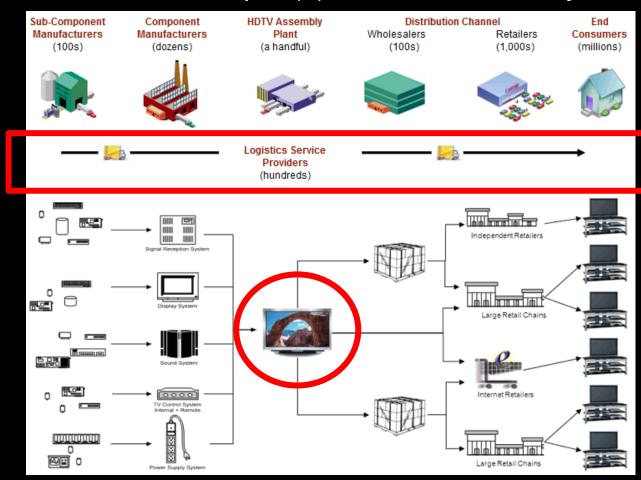
RFID:
Radiofrequency
identification



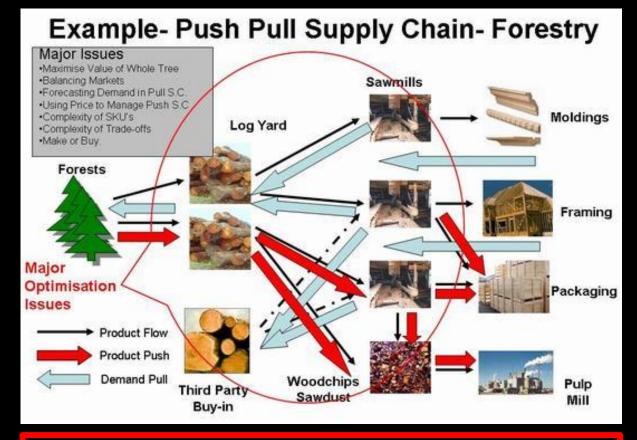
SCM – example (2): electronic industry







✓ SCM – example (3a): forest industry







- ✓ Value mgmt.
- ✓ Balancing demand/supply
- ✓ Pull/Push strategy
- ✓ Trade-offs
- ✓ Make or buy

SCM software solution

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✓ SCM – example (3b): forest industry

has to ensure balance (optimazation) of:

- **羅ADVANTAGE**Get it
- ✓ Before justifying the harvest of a tree harvester/ woodcutter:
 (1) the type of wood; 2) the quantiity), a supply chain manager
 - 1) price, 2) demand, 3) product flows and 4) inventory level across a large number of SKU's (stock-keeping unit) and a very diverse customer base.
- Optimization with SCM software in various forms has been used in the forestry industry for many years to assist in managing this complexity.





✓ SCM ? – your answer is...

Traditionalist



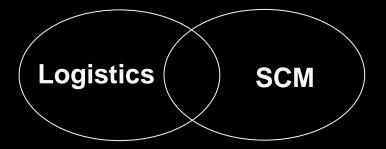
Unionist



Re-labelling



Intersectionist



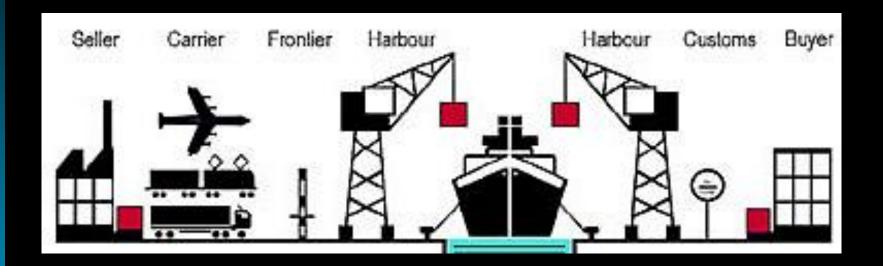
INCOTERMS



- ✓ INCOTERMS International Commercial terms:
 - **INCOTERMS:** Abbreviation for international commercial terms that are now commonly accepted standards in global trade.
 - Mangan, Lalwani, Butcher, Global Logistics and Supply Chain Management, Wiley & Sons, 2008.
 - **INCOTERMS:** define the rensponsibility for the shipment of goods in terms of 1) transportation, 2) insurence and 3) customs.
 - The Incoterms rules began development in 1921. Incoterms
 were first published in 1936 by the International Chamber of
 Commerce (http://www.iccwbo.org)



✓ INCOTERMS:



Who is responsible for:

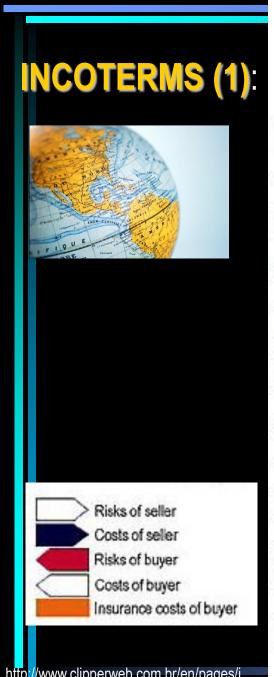
- 1) Transportation costs
- 2) Risk / Insurance costs
- 3) Customs clearance costs



- ✓ INCOTERMS there are 4 groups / 13 incoterms (1):
 - Group E: Deperture
 - EXW / ex-works
 - Group F: Main carriage not paid by seller
 - FCA / free carrier
 - FAS / free along ship
 - FOB / free on board



- ✓ INCOTERMS there are 4 groups / 13 incoterms (2):
 - Group C: Main carriage paid by the seller
 - CFR / cost and freight
 - CIF / cost, insurance and freight
 - CPT / carriage paid to
 - CIP / carriage and insurance paid
 - Group D: Arrival
 - DAF/ deliver at frontier
 - DES / deliver ex ship
 - DEQ / delivered ex quay
 - DDU / deliver duty unpaid / DDP / delivered duty paid



Seller Harbour Harbour Buyer Carrier Frontier Customs EXW - Ex Works -FCA - Free CArrier -FAS - Free Alongside Ship -FOB - Free On Board -Unloading costs, if charged at the time of sea freight contract conclusion CFR - Costs and FReight -Unloading costs, if charged at the time of sea freight contract conclusion CIF - Costs, Insurance and Freight -

http://www.clipperweb.com.br/en/pages/incoterms.htm

INCOTERMS (2):





Seller Harbour Harbour Customs Buyer Carrier Frontier CPT - Carriage Paid To - (...named place of destination) CIP - Carriage and Insurance Paid to - (... named place of destination) DAF - Delivered At Frontier -DES - Delivered Ex Ship -DEQ - Delivered Ex Quay -DDU - Delivered Duty Unpaid -DDP - Delivered Duty Paid -

http://www.clipperweb.com.br/en/pages/i

Without guarantee - for details and in case of doubt the wording of the Incolerms applies.

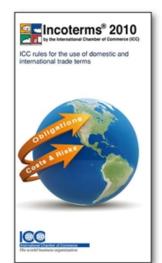
Supply Chair



INCOTERMS th

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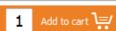
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GLOBALISATION

(Glocalisation)



- ✓ GLOBALISATION Think global, act local [Levitt]
- Falling political (totalitarian) systems → Opening borders;
- Regional networking → Free trade agreements;
- Easy flow of goods → Growth in the international trade level;
- Increase competition → Falling product prices / lower costs.
- Productivity improvement → SCM optimazation.
- Flexibility / Agile approach → Personalization / inventory reduction.

Glocalisation – adopting standard, mass, global product to local wants and preferences.



✓ GLOBALISATION – Think global, act local [Levitt]

- DEFINITION: An umbrella term for a complex series of economic, social, technological, cultural and political changes which continue to take place throughout the world.
- Global cause and effect rule (positive and negative influence)!



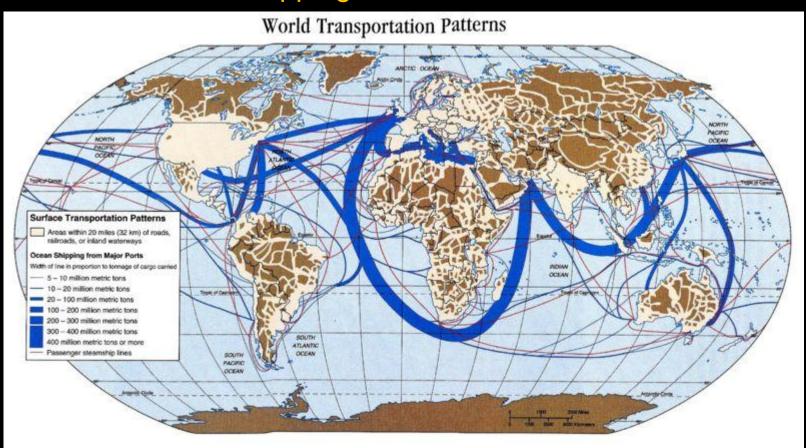
✓ GLOBALISATION – Think global, act local [Levitt]

Eastern Telegraph
Company 1899 chart of
undersea telegraph
cabling. An example of
modern globalizing
technology in the
beginning of the 20th
century.

http://en.wikipedia.org/wiki/File:1901 _Eastern_Telegraph_cables.png



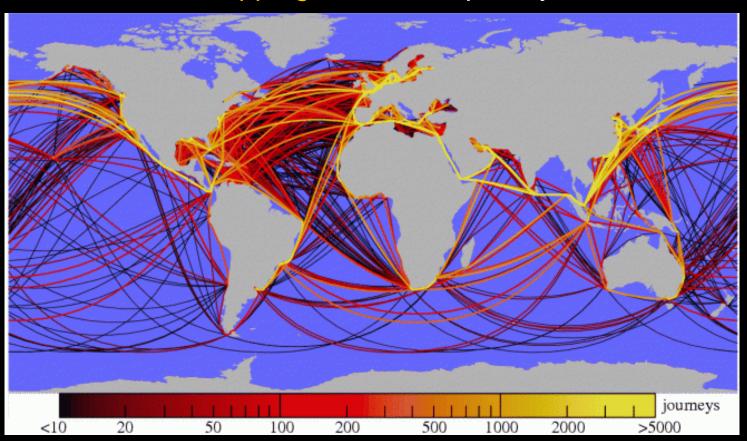
✓ International shipping routes 2010



http://qed.princeton.edu/index.php/User:Student/World_Transportation_Patterns



✓ International shipping routes / maped by GPS



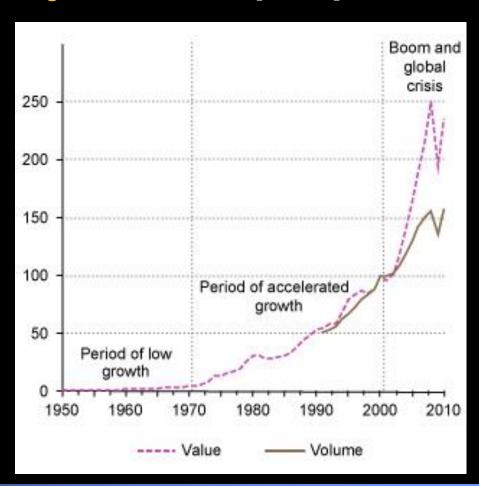
http://www.wired.com/wiredscience/2010/01/global-shipping-map/



✓ GLOBALISATION – Think global, act local [Levitt]

Long-term trends in value and volume of merchandise exports, 1950-2010 (Index numbers, 2000=100)

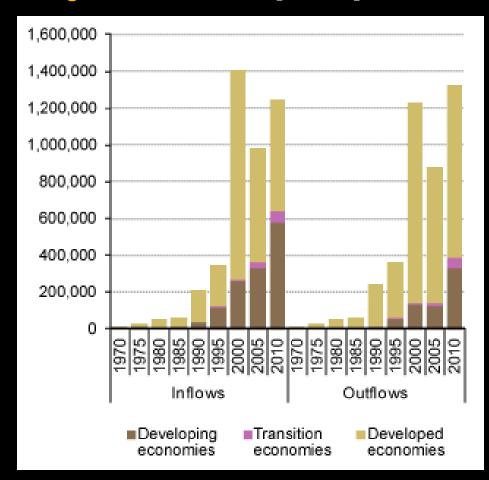
Source: UNCTAD secretariat calculations, based on *UNCTADstat* and CPB Netherlands Bureau of Economic Policy Analysis, *World trade database*





✓ GLOBALISATION – Think global, act local [Levitt]

Private capital flows (inflows and outflows of the capital) consist of three main categories: foreign direct investment (FDI), portfolio investment, and other investment.



Source: UNCTAD secretariat calculations, based on IMF, *WEO October 2011*



- ✓ GLOBALISATION conclusions
- The process of (global) integration.
- The <u>significant increase of world trade</u> / people movement.
- The global competition / regional competition.
- The global flow of capital, jobs, goods and services.
- The global cause and effect business model (domino effect).
- Standardization vs personalization (local, cultural influence).
- The increase of the value of global corporations vs the increase of the national debts.

Logistics (Global) Performance Index (LPI 2012/14/18)

by







✓ LPI – Logistics Performance Index

- The International LPI provides qualitative evaluations of a country in six areas by its trading partners.
- ✓ The method of research: a survey logistics professionals working outside the country.
- Primary data for the LPI 2012+ index is available for 155 countries.
- ✓ LPI started in 2007.







- ✓ LPI Logistics Performance Index
 - Customs
 - ✓ Infrustructure
 - International shipment
 - Logistics competence
 - Tracking and tracing
 - Timeliness / delivery on time

Six key dimensions of LPI evaluation





Country	Year	LPI Rank	LPI Score	Customs ?	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness
Singapore	2012	1	4.13	4.10	4.15	3.99	4.07	4.07	4.39
Hong Kong, China	2012	2	4.12	3.97	4.12	4.18	4.08	4.09	4.28
Finland	2012	3	4.05	3.98	4.12	3.85	4.14	4.14	4.10
Germany	2012	4	4.03	3.87	4.26	3.67	4.09	4.05	4.32
Netherlands	2012	5	4.02	3.85	4.15	3.86	4.05	4.12	4.15
Denmark	2012	6	4.02	3.93	4.07	3.70	4.14	4.10	4.21
Belgium	2012	7	3.98	3.85	4.12	3.73	3.98	4.05	4.20
Japan	2012	8	3.93	3.72	4.11	3.61	3.97	4.03	4.21
United States	2012	9	3.93	3.67	4.14	3.56	3.96	4.11	4.21
United Kingdom	2012	10	3.90	3.73	3.95	3.63	3.93	4.00	4.19
Austria	2012	11	3.89	3.77	4.05	3.71	4.10	3.97	3.79
France	2012	12	3.85	3.64	3.96	3.73	3.82	3.97	4.02
Sweden	2012	13	3.85	3.68	4.13	3.39	3.90	3.82	4.26
Canada	2012	14	3.85	3.58	3.99	3.55	3.85	3.86	4.31
Luxembourg	2012	15	3.82	3.54	3.79	3.70	3.82	3.91	4.19
Switzerland	2012	16	3.80	3.88	3.98	3.46	3.71	3.83	4.01
United Arab Emirates	2012	17	3.78	3.61	3.84	3.59	3.74	3.81	4.10
Australia	2012	18	3.73	3.60	3.83	3.40	3.75	3.79	4.05
Taiwan	2012	19	3.71	3.42	3.77	3.58	3.68	3.72	4.10
Spain	2012	20	3.70	3.40	3.74	3.68	3.69	3.67	4.02
Korea, Rep.	2012	21	3.70	3.42	3.74	3.67	3.65	3.68	4.02





	Country	Year	LPI Rank	LPI Score	Customs ?	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness ?
	Norway	2012	22	3.68	3.46	3.86	3.49	3.57	3.67	4.09
	South Africa	2012	23	3.67	3.35	3.79	3.50	3.56	3.83	4.03
	Italy	2012	24	3.67	3.34	3.74	3.53	3.65	3.73	4.05
	Ireland	2012	25	3.52	3.40	3.35	3.40	3.54	3.65	3.77
	China	2012	26	3.52	3.25	3.61	3.46	3.47	3.52	3.80
	Turkey	2012	27	3.51	3.16	3.62	3.38	3.52	3.54	3.87
	Portugal	2012	28	3.50	3.19	3.42	3.43	3.48	3.60	3.88
	Malavsia	2012	29	3.49	3.28	3.43	3.40	3.45	3.54	3.86
	Poland	2012	30	3.43	3.30	3.10	3.47	3.30	3.32	4.04
	New Zealand	2012	31	3.42	3.47	3.42	3.27	3.25	3.58	3.55
	Iceland	2012	32	3.39	3.53	3.39	3.01	3.47	3.39	3.62
	Qatar	2012	33	3.32	3.12	3.23	2.88	3.25	3.50	4.00
	Slovenia	2012	34	3.29	3.05	3.24	3.34	3.25	3.20	3.60
	Cyprus	2012	35	3.24	3.02	3.17	3.21	3.17	3.36	3.54
	Bulgaria	2012	36	3.21	2.97	3.20	3.25	3.10	3.16	3.56
	Saudi Arabia	2012	37	3.18	2.79	3.22	3.10	2.99	3.21	3.76
	Thailand	2012	38	3.18	2.96	3.08	3.21	2.98	3.18	3.63
	Chile	2012	39	3.17	3.11	3.18	3.06	3.00	3.22	3.47
	Hungary	2012	40	3.17	2.82	3.14	2.99	3.18	3.52	3.41
	Tunisia	2012	41	3.17	3.12	2.88	2.88	3.12	3.25	3.75
	Croatia	2012	42	3.16	3.06	3.35	2.95	2.92	3.20	3.54
	Malta	2012	43	3.16	2.81	3.10	3.17	3.01	3.05	3.79
	Czech Republic	2012	44	3.14	2.95	2.96	3.01	3.34	3.17	3.40
	Brazil	2012	45	3.13	2.51	3.07	3.12	3.12	<i>K</i>	THE W







Country	Year	LPI Rank	LPI Score	Customs ?	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness ?
Germany	2014	1	4.12	4.10	4.32	3.74	4.12	4.17	4.36
Netherlands	2014	2	4.05	3.96	4.23	3.64	4.13	4.07	4.34
Belgium	2014	3	4.04	3.80	4.10	3.80	4.11	4.11	4.39
United Kingdom	2014	4	4.01	3.94	4.16	3.63	4.03	4.08	4.33
Singapore	2014	5	4.00	4.01	4.28	3.70	3.97	3.90	4.25
Sweden	2014	6	3.96	3.75	4.09	3.76	3.98	3.97	4.26
Norway	2014	7	3.96	4.21	4.19	3.42	4.19	3.50	4.36
Luxembourg	2014	8	3.95	3.82	3.91	3.82	3.78	3.68	4.71
United States	2014	9	3.92	3.73	4.18	3.45	3.97	4.14	4.14
Japan	2014	10	3.91	3.78	4.16	3.52	3.93	3.95	4.24
Ireland	2014	11	3.87	3.80	3.84	3.44	3.94	4.13	4.13
Canada	2014	12	3.86	3.61	4.05	3.46	3.94	3.97	4.18
France	2014	13	3.85	3.65	3.98	3.68	3.75	3.89	4.17
Switzerland	2014	14	3.84	3.92	4.04	3.58	3.75	3.79	4.06
Hong Kong, China	2014	15	3.83	3.72	3.97	3.58	3.81	3.87	4.06
Australia	2014	16	3.81	3.85	4.00	3.52	3.75	3.81	4.00
Denmark	2014	17	3.78	3.79	3.82	3.65	3.74	3.36	4.39
Spain	2014	18	3.72	3.63	3.77	3.51	3.83	3.54	4.07
Taiwan	2014	19	3.72	3.55	3.64	3.71	3.60	3.79	4.02
Italy	2014	20	3.69	3.36	3.78	3.54	3.62	3.84	4.05
Korea, Rep.	2014	21	3.67	3.47	3.79	3.44	3.66	3.69	4.00
Austria	2014	22	3.65	3.53	3.64	3.26	3.56	3.93	4.04
New Zealand	2014	23	3.64	3.92	3.67	3.67	3.56	3.33	3.72
Finland	2014	24	3.62	3.89	3.52	3.52	3.72	3.31	3.80
Malaysia	2014	25	3.59	3.37	3.56	3.64	3.47	3.58	3.92
Portugal	2014	26	3.56	3.26	3.37	3.43	3.71	3.71	3.87
United Arab Emirates	2014	27	3.54	3.42	3.70	3.20	3.50	3.57	3.92
China	2014	28	3.53	3.21	3.67	3.50	3.46	3.5	



Country	Year	LPI	LPI Score	Customs	Infrastructure	International	Logistics	Tracking &	Timeliness
		Rank	~	(2)	(2)	shipments ?	competence ?	tracing ?	(2)
cilliates									
China	2014	28	3.53	3.21	3.67	3.50	3.46	3.50	3.87
Qatar	2014	29	3.52	3.21	3.44	3.55	3.55	3.47	3.87
Turkey	2014	30	3.50	3.23	3.53	3.18	3.64	3.77	3.68
Poland	2014	31	3.49	3.26	3.08	3.46	3.47	3.54	4.13
Czech	2014	32	3.49	3.24	3.29	3.59	3.51	3.56	3.73
Republic									
Hungary	2014	33	3.46	2.97	3.18	3.40	3.33	3.82	4.06
South Africa	2014	34	3.43	3.11	3.20	3.45	3.62	3.30	3.88
Thailand	2014	35	3.43	3.21	3.40	3.30	3.29	3.45	3.96
Latvia	2014	36	3.40	3.22	3.03	3.38	3.21	3.50	4.06
Iceland	2014	37	3.39	3.54	3.34	3.15	3.46	3.38	3.51
Slovenia	2014	38	3.38	3.11	3.35	3.05	3.51	3.51	3.82
Estonia	2014	39	3.35	3.40	3.34	3.34	3.27	3.20	3.55
Romania	2014	40	3.26	2.83	2.77	3.32	3.20	3.39	4.00
Israel	2014	41	3.26	3.10	3.11	2.71	3.35	3.20	4.18
Chile	2014	42	3.26	3.17	3.17	3.12	3.19	3.30	3.59
Slovak Republic	2014	43	3.25	2.89	3.22	3.30	3.16	3.02	3.94
Greece	2014	44	3.20	3.36	3.17	2.97	3.23	3.03	3.50
Panama	2014	45	3.19	3.15	3.00	3.18	2.87	3.34	3.63
Lithuania	2014	46	3.18	3.04	3.18	3.10	2.99	3.17	3.60
Bulgaria	2014	47	3.16	2.75	2.94	3.31	3.00	2.88	4.04
Vietnam	2014	48	3.15	2.81	3.11	3.22	3.09	3.19	3.49
Saudi Arabia	2014	49	3.15	2.86	3.34	2.93	3.11	3.15	3.55
Mexico	2014	50	3.13	2.69	3.04	3.19	3.12	3.14	3.57
Malta	2014	51	3.11	3.00	3.08	3.23	3.00	3.15	3.15
Bahrain	2014	52	3.08	3.29	3.04	3.04	3.04	3.29	2.80
Indonesia	2014	53	3.08	2.87	2.92	2.87	3.21	3.11	3.53
India	2014	54	3.08	2.72	2.88	3.20	3.03	3.11	3.51
Croatia	2014	55	3.05	2.95	2.92	2.98	3.00	3.11	3.37
Kuwait	2014	56	3.01	2.69	3.16	2.76	2.96	3.16	3.39
Philippines	2014	57	3.00	3.00	2.60	3.33	2.93	3.00	







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LPI Dataset Sections

International LPI





Domestic LPI





Questions?



dr Marian Krupa

Exam Questions (2):



- Define the terms integration and collaboration in the global SCM context.
- Elaborate on specific methods, strategies and tools used to enable collaboration.
- ✓ Is your country among the world's most globalised countries? What could it do to improve its position form logistics point of view (LPI 2012)?
- Identify examples of companies/products which attempt to think global and act local.