

# Pharmaceutical Supply Chain - A Value Delivery System



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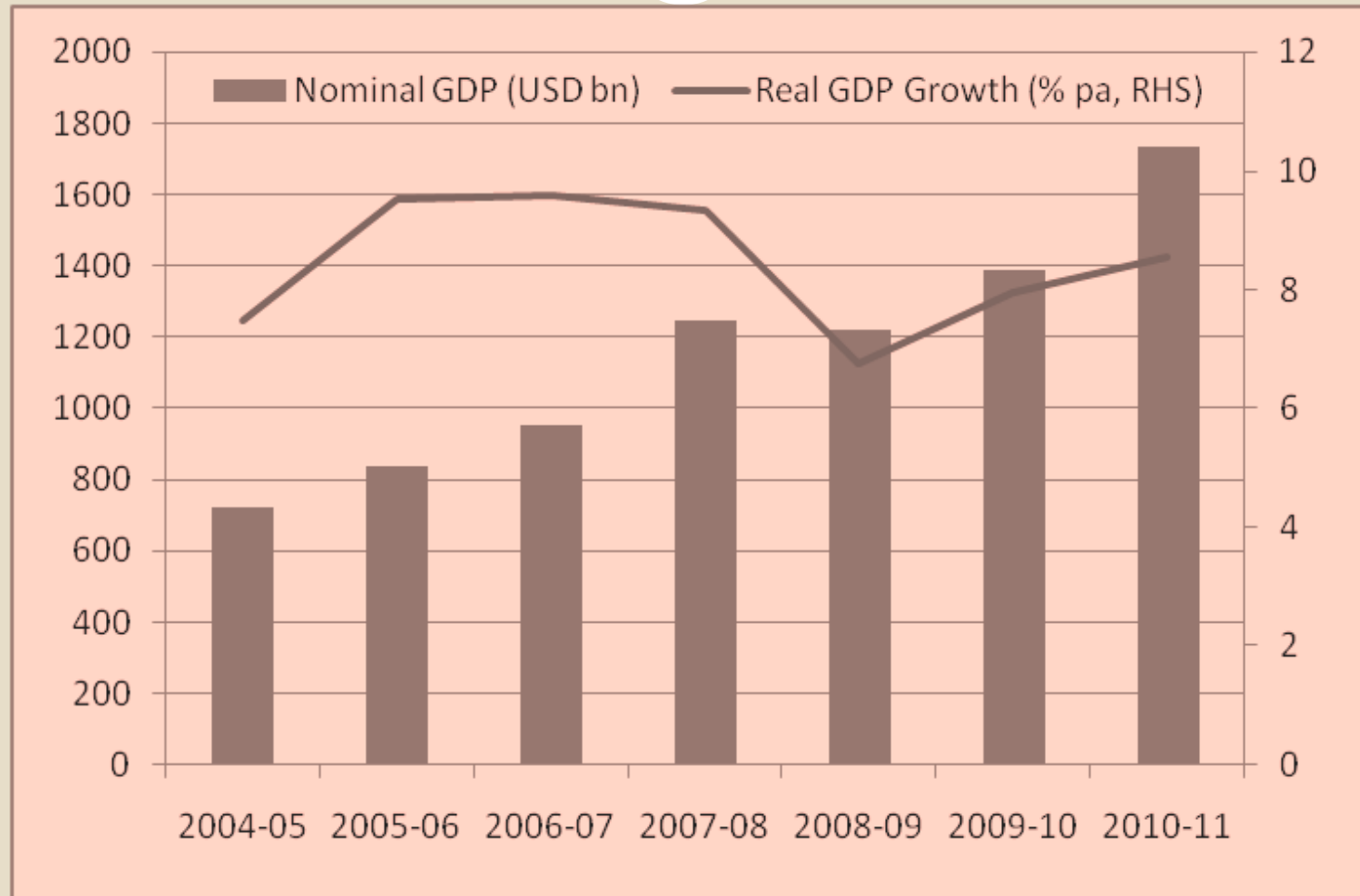
# Contents



- ❖ Emerging Pharmaceutical Market of India
- ❖ Supply Chain – a Value Delivery System
  - Brand creation
  - Brand integrity
  - Brand security
- ❖ A unique Supply Chain System of India



# Indian Economy



Source: Yes Bank



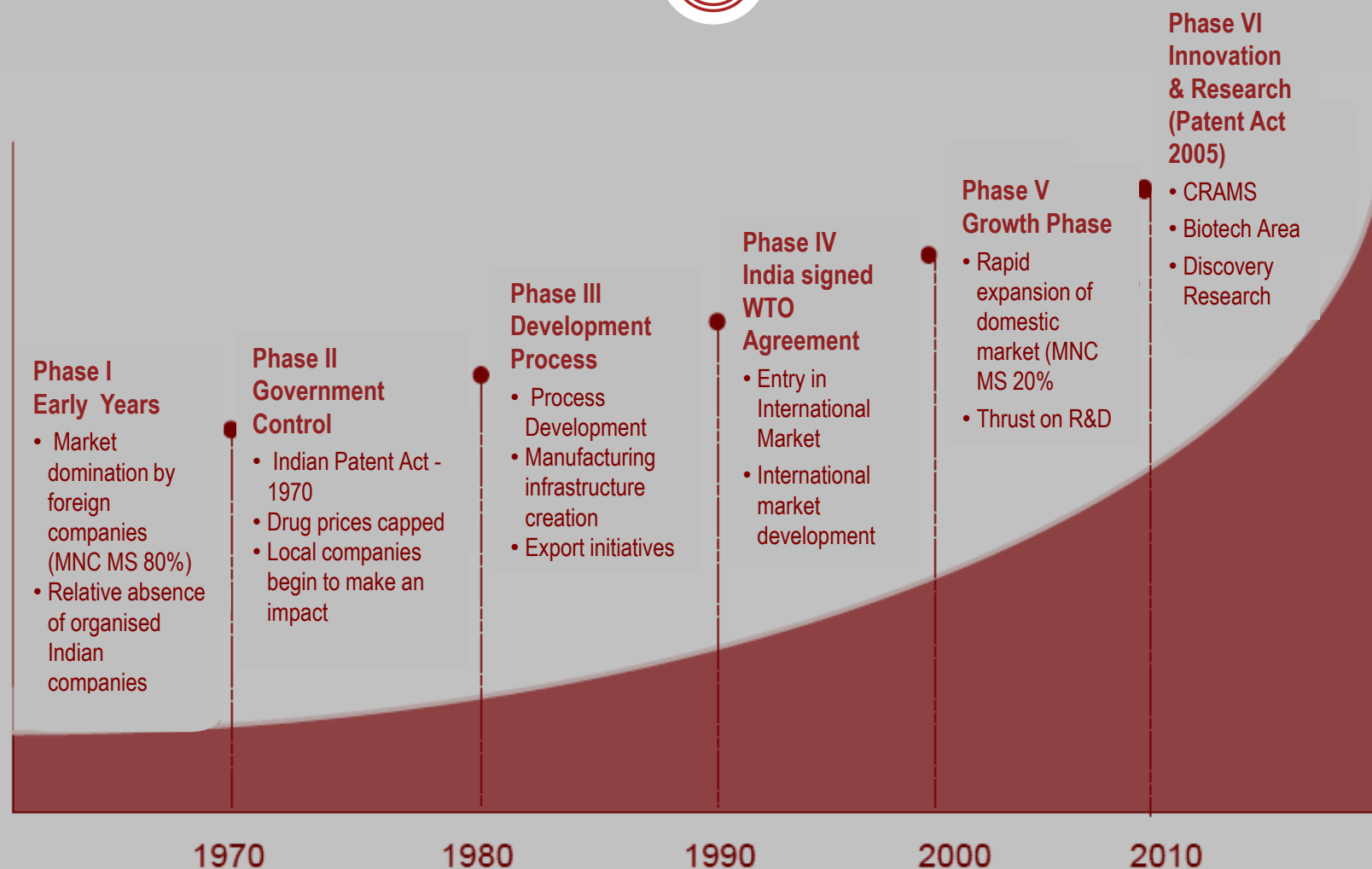
# World Pharmaceutical Market - 2010



No.	Country	Rev. USD Bn.	% Share	Val. Gr.
	<b>Global Pharma Market</b>	<b>856</b>	<b>100.0</b>	<b>5</b>
1	USA	310	40.0	3
2	Japan	86	10.8	0
3	Germany	40	5.1	3
4	France	39	4.9	1
5	China	33	4.2	22
6	Italy	26	3.3	3
<b>15</b>	<b>India</b>	<b>10</b>	<b>1.3</b>	<b>17</b>



# A Journey of Four Decades



# Key Reforms have put India into Growth Trajectory

India will  
overtake  
Japan by  
2014

- ❖ Globalization of economy
- ❖ Dismantling 'license' regime
- ❖ Lowering tariffs / taxes
- ❖ Breaking public sector monopolies
- ❖ Indigenous R&D
- ❖ New IPR Regime
- ❖ Goods and Services Tax (GST)\*
- ❖ Direct Tax Code (DTC)\*

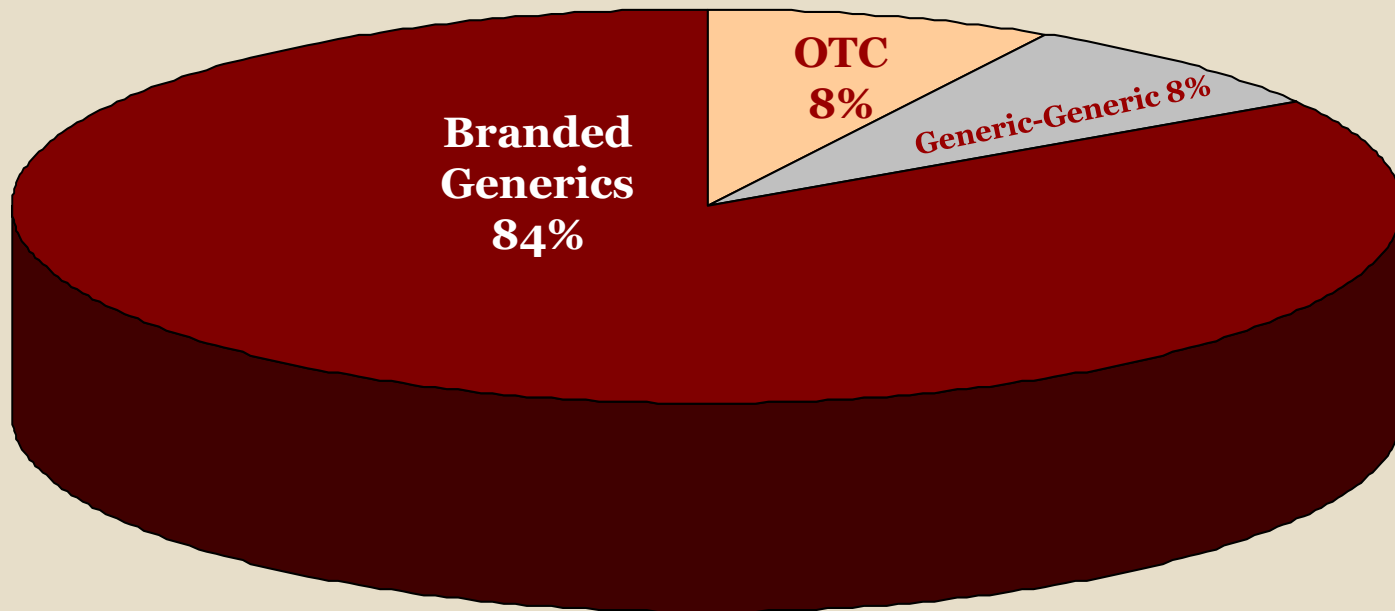
\* Yet to be implemented



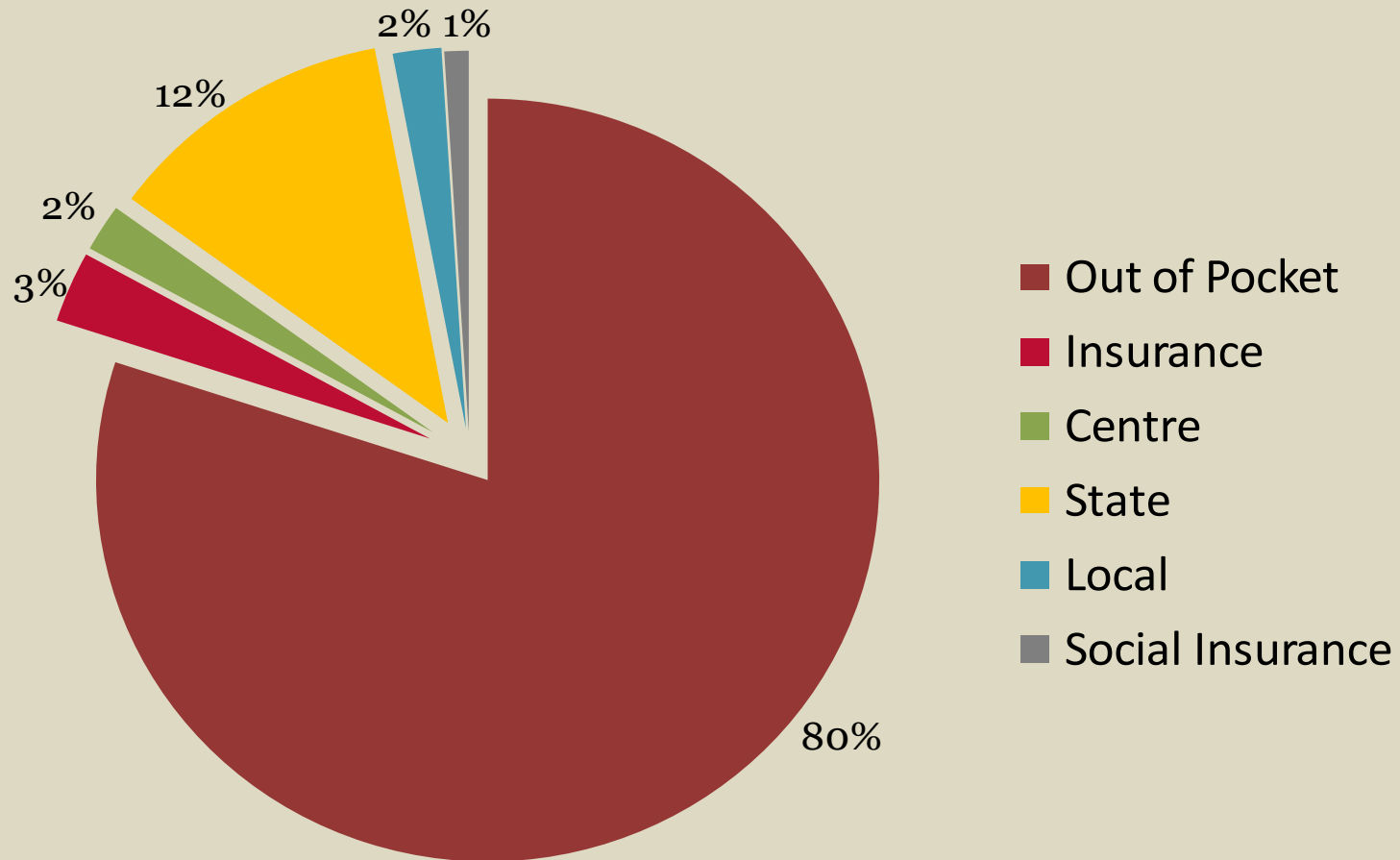
# Key Market Types



Market Size US\$ 12.5 Bn.



# Out of Pocket Expenses in India





# Mergers and Acquisitions / Strategic Collaborations



Year	Indian Companies	Multinational Companies	Value (USD Mn.)	Type
2006	Matrix Labs.	Mylan	736	Acquisition
	Dabur Pharma	Fresenius Kabi	219	Acquisition
	Ranbaxy Labs.	Daiichi Sankyo	4,600	Acquisition
	Shantha Biotech	Sanofi-aventis	783	Acquisition
2009	Orchid Chemicals	Hospira	400	Business Buyout
	Aurobindo Pharma	Pfizer	Not disclosed	Generic Development and Supply
	Dr. Reddy's Labs.	GlaxoSmithKline	Not disclosed	Generic Development and Supply
2010	Piramal Healthcare	Abbott	3,720	Business Buyout
	Paras Pharma	Reckitt Benckiser	726	Acquisition
	Claris Lifesciences	Pfizer	Not disclosed	Generic Development and Supply
2011	Cadila Healthcare	Bayer	Not disclosed	Marketing Joint Venture
	Sun Pharma	Merck & Co.	Not disclosed	Marketing, Manufacturing Joint Venture

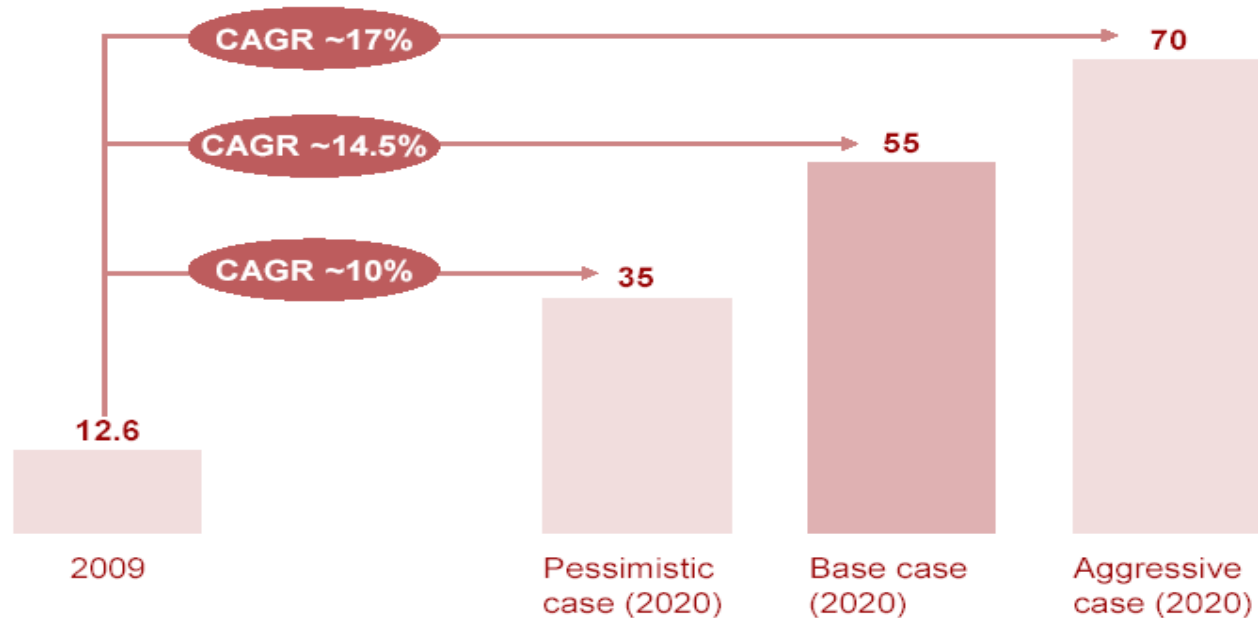


# Indian Pharma Market - 2020



Indian pharma market will grow to USD 55 billion by 2020

Projected size of Indian pharma market  
USD billion



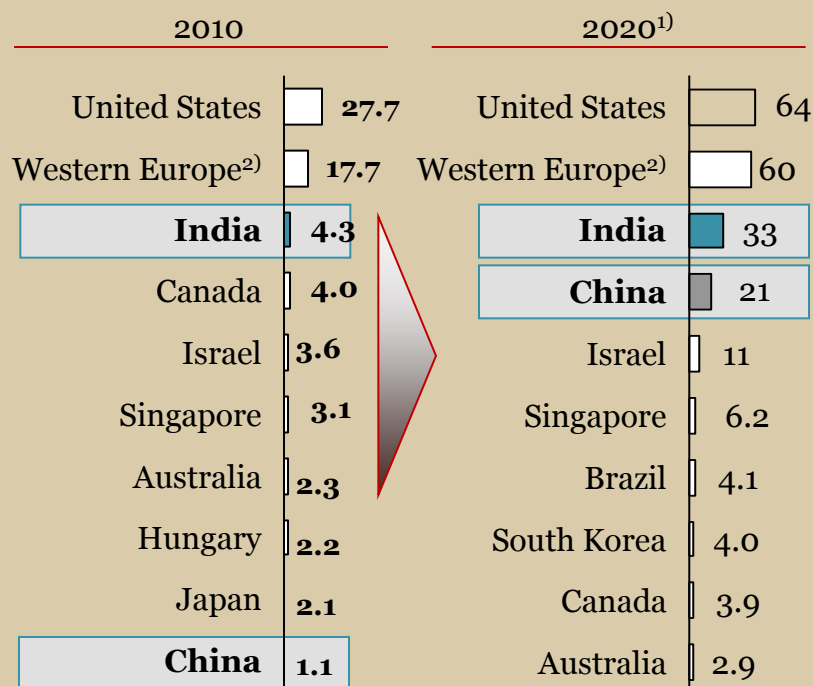
SOURCE: McKinsey analysis; secondary research



# India's Growth in Exports and Domestic Consumption

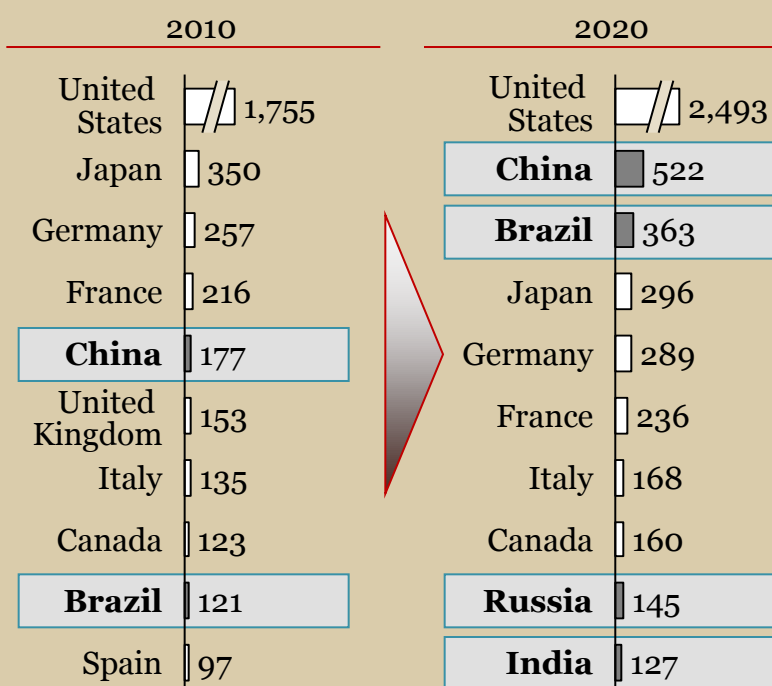
## Production: India and China become significant manufacturers

Value of pharma exports (in bn EUR)



## Consumption: All BRIC in top 10 – China and Brazil on rank 2 and 3

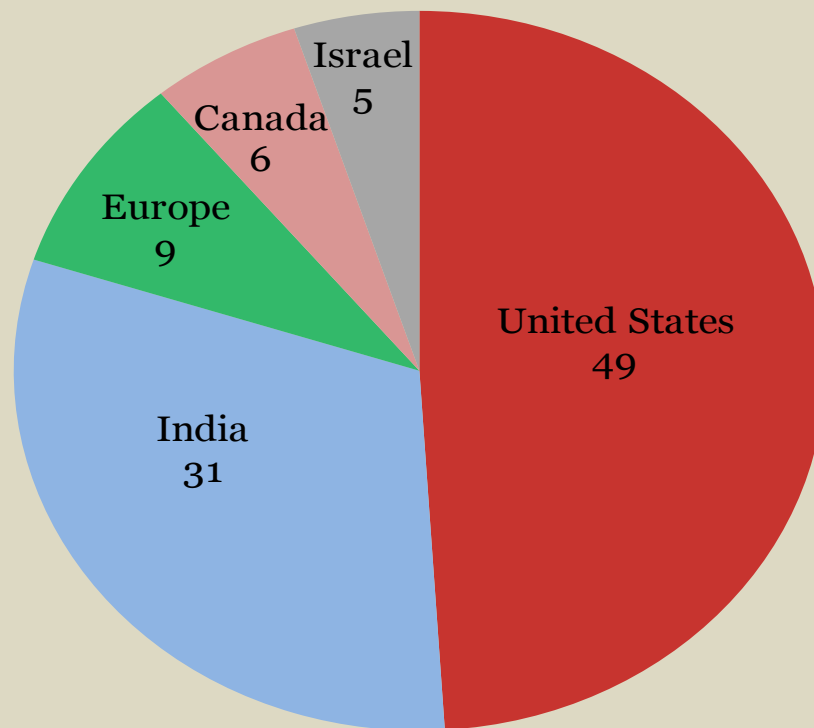
Total healthcare expenditure (in bn EUR)



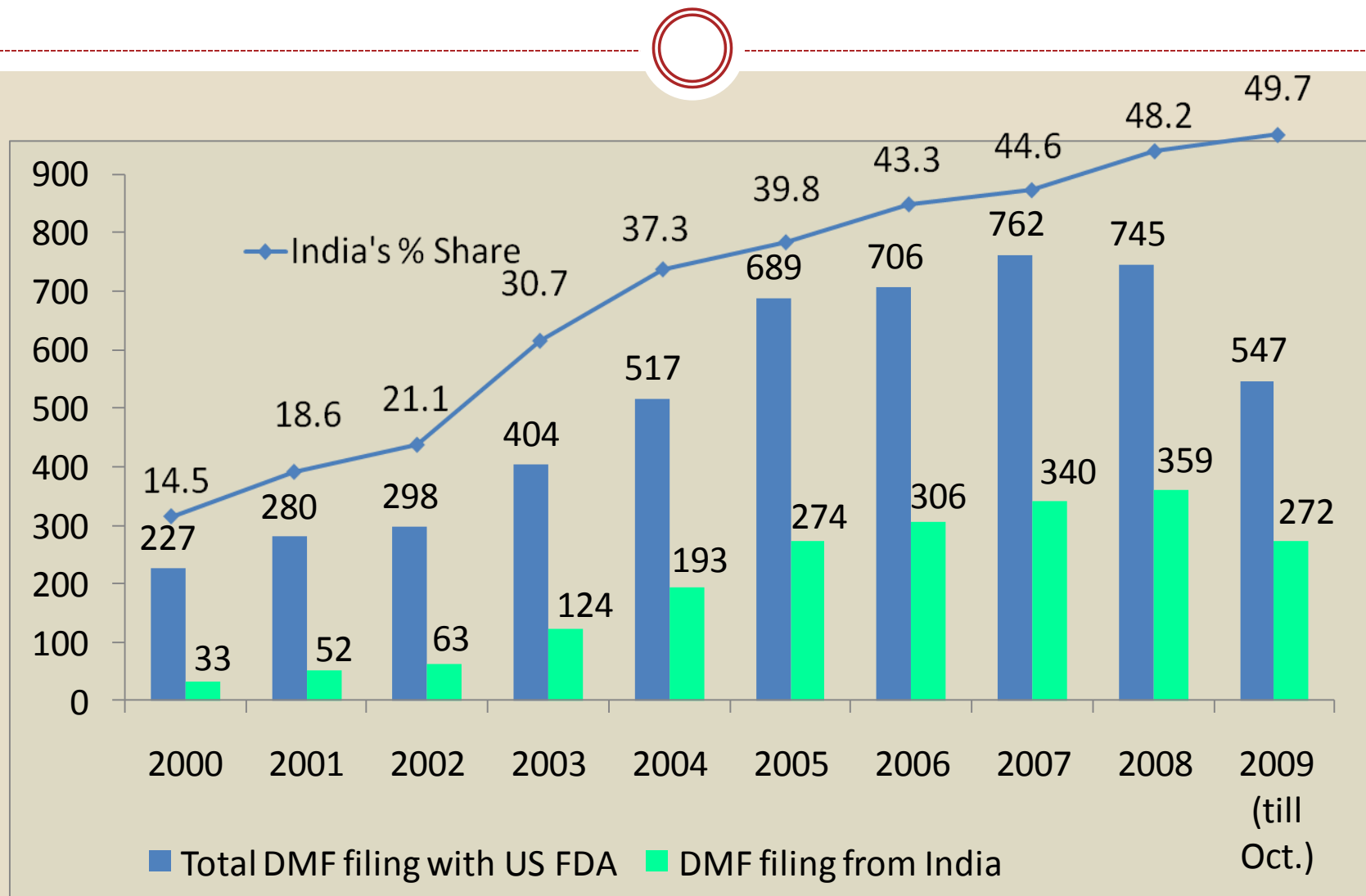
# Country-wise ANDA Approvals 2008 & 2009



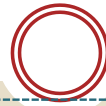
(In %)



# DMF Filing (Global v/s. India)



# Manpower in India - Quantity and Quality



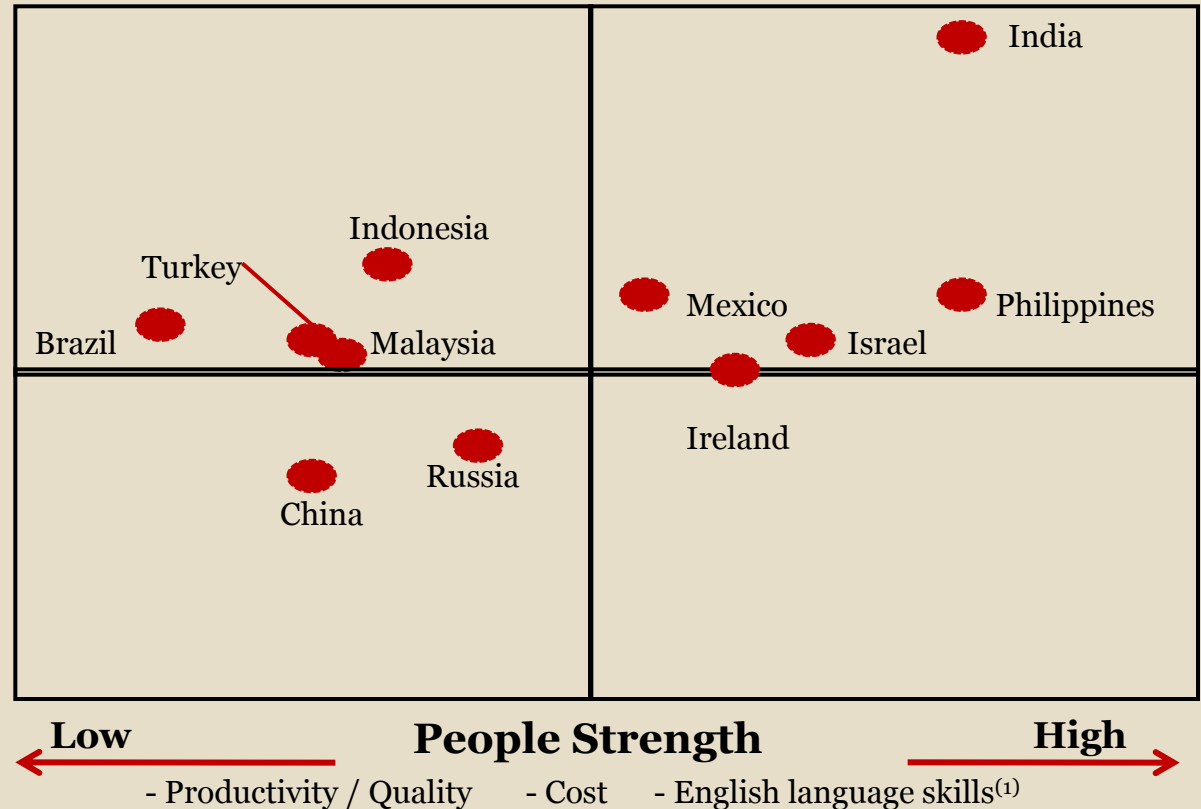
**Surplus**

↑

**Projected  
workforce  
in 2020**

↓

**Shortfall**

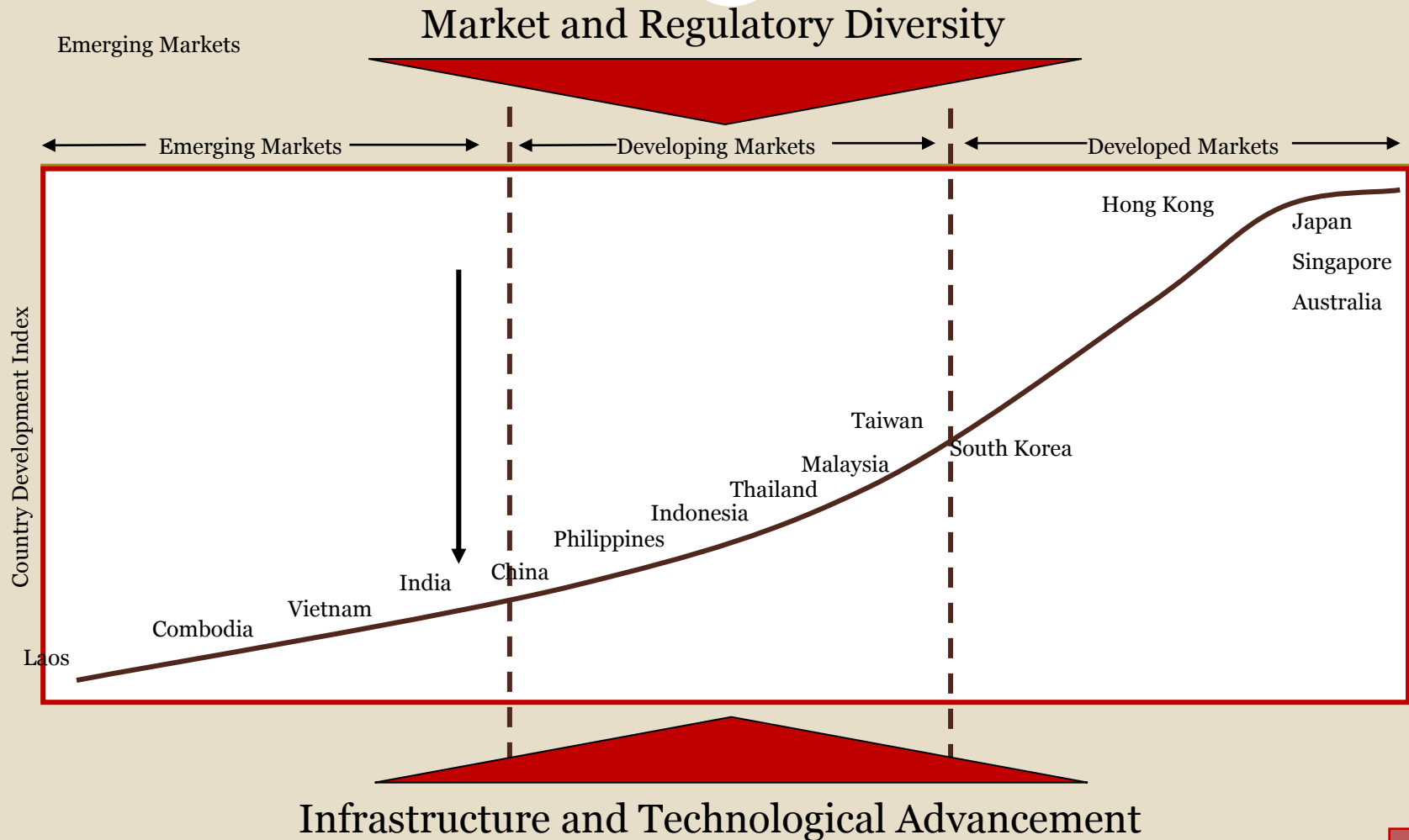


(1) Over 50% of shortages expected from English speaking countries

Note: Pakistan, Bangladesh and Vietnam have not been represented for lack of reliable data on productivity and cost of service employees



# Gaps in Supply Chain Development in Asia



# Good Supply Chain Management (SCM) System



- ✓ RIGHT Product
- ✓ RIGHT Time
- ✓ RIGHT Quantity
- ✓ RIGHT Place
- ✓ RIGHT Price
- ✓ RIGHT Quality





# Demand focused SCM



- ❖ Always demand driven
- ❖ Excellent feel of demand fluctuations with a robust measurement system to work out supply chain requirements
- ❖ Quick reaction time to gauge and respond to customers' needs and demand
- ❖ Cost of running at minimum.
- ❖ Structure: without organizational flab
- ❖ Robust and secured IT infrastructure and audit systems



# Points to Ponder



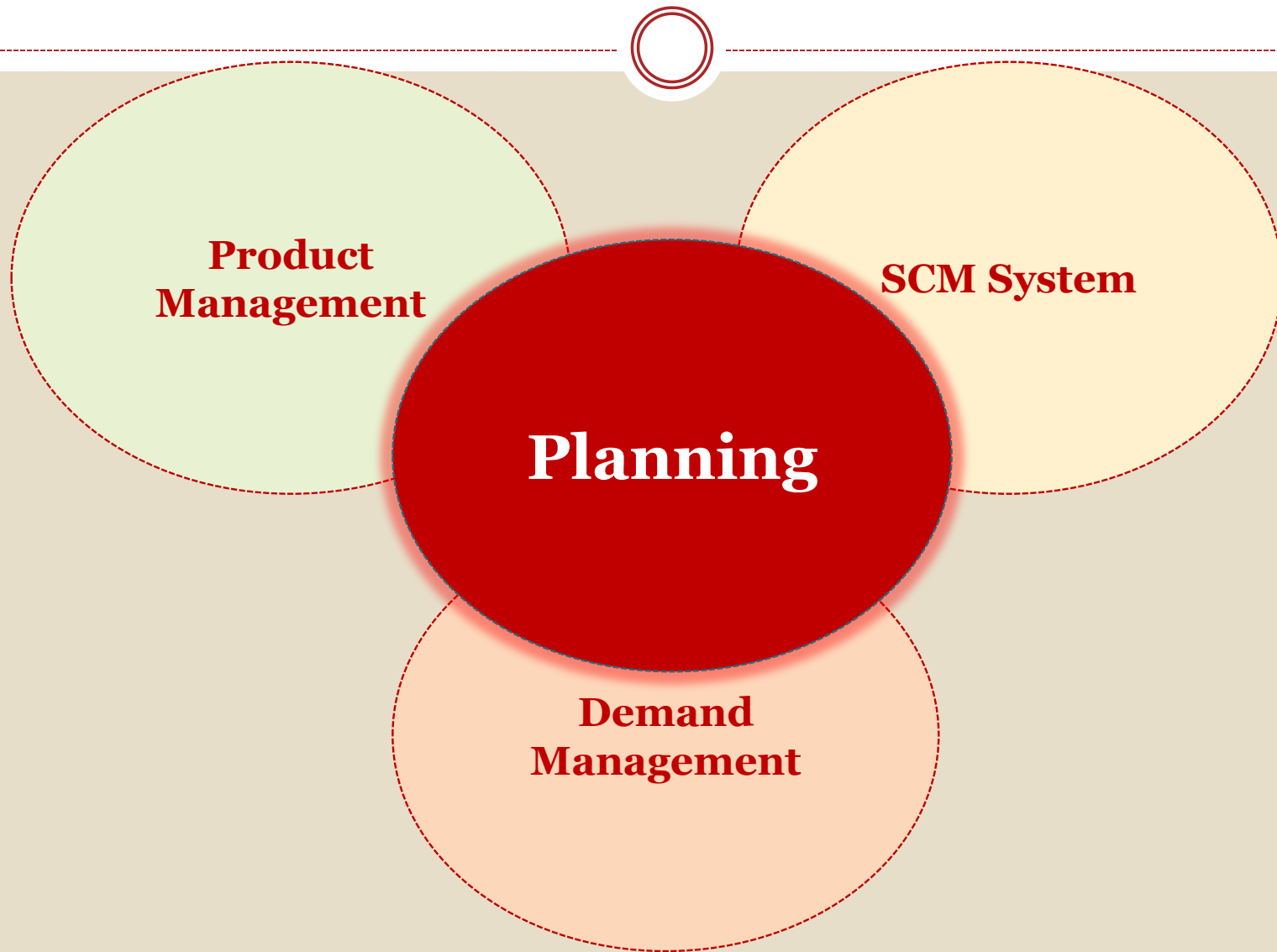
1. What will a good SCM System mean?
2. What is the emerging role of SCM System in:
  - Brand creation
  - Brand integrity
  - Brand security





# Supply Chain in Brand Creation

# Working Together



# 8 Critical SCM Functions in Brand Creation



1. Customer Service Management
2. Order Fulfillment
3. Demand management
4. Procurement
5. Returns
6. Manufacturing flow management
7. Product development
8. Commercialization



# Key Benefits



1. Increasing customer satisfaction
  - ❖ Decrease in inventory cost
  - ❖ Standardization of production and shortening the production process
  - ❖ Improving quality
2. Increasing efficiency in distribution, payment, order taking and delivery process
  - ❖ Adds value to brand creation process
  - ❖ Improves business performance



# Example



- ❖ If Lipitor gets out of stock, doctors usually do not switch over to other statins.
- ❖ Patients may come back to the Pharmacy next day with a hope to get Lipitor.
- ❖ Such value creation made Lipitor a US\$14 billion brand



# Supply Chain and Brand Creation



SCM helps:

- ❖ Create
- ❖ Deliver
- ❖ Realize

both tangible and intangible values of a brand,  
effectively







# Supply Chain and Brand Integrity

# Instances of Breach in Brand Integrity



**Seven people died in the Chicago area after taking cyanide-laced capsules of Extra-Strength Tylenol, of J&J's best-selling product**

**– September 1982**

**300 People died in Panama consuming a cough medicine Diethyline glycol for Glycerin**

**– 2007**

**17 FDA warning letters issues to drug companies in China in the first 8 months of 2008, including Mediland Pharma, Merck, and Sandoz**

**– 2008**

**Heparin Tragedy in USA: 81 Deaths**

**– March 2008**

**J&J recall of 43 children medicines in 12 countries, including Tylenol, Mortin, Zyrtec and Benadryl**

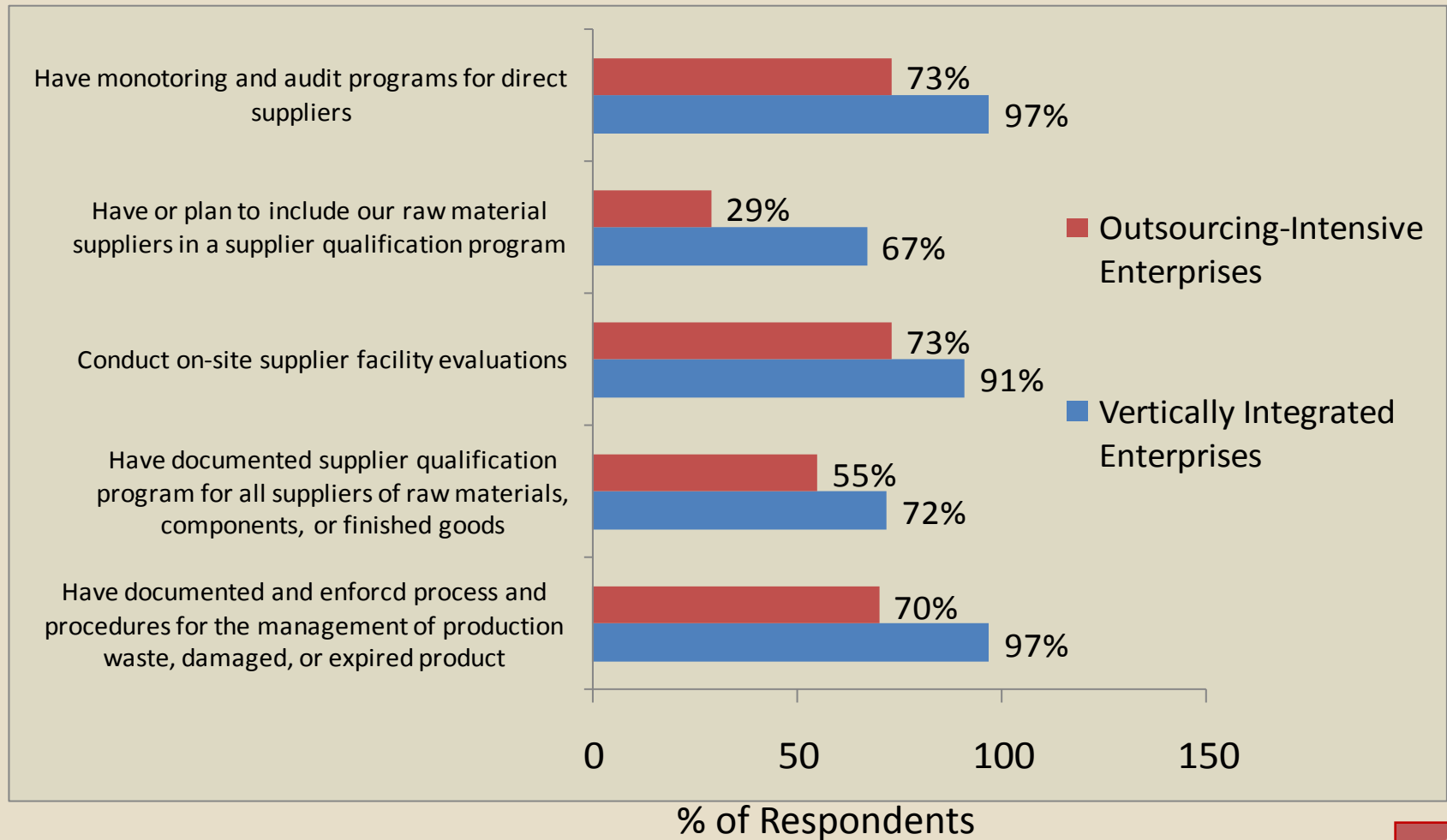
**– April, 2010**

**In June 2010, Pfizer recalled three I.V. products manufactured in India by Claris Lifesciences after floating matter was found in plastic IV bags**

**– June, 2010**



# ‘Manufacturers Don’t Have as Much Control Over Supply Chain Security as They Think They Do’ (Marsh Inc.)



# Strengthening Brand Integrity



- ❖ Know your supply chain:

Keep an up-to-date map of end-to-end supply chain to maintain supply chain integrity.

- ❖ Increase supply chain security:

Use of third parties increases the risk in supply chains. Longer-term relationships with supply chain partners can help reduce risk.

- ❖ Widen scope of supplier audits/qualification system

- ❖ New technologies to prevent counterfeiting:

Counterfeiters learn quickly, new technologies offer opportunities to make counterfeiting harder





# Supply Chain and Brand Security

# Brand Security: The Steps

## Recent Steps Taken to Improve Product Security in India



- ❖ Awareness
- ❖ Technology
- ❖ Amendment of D&C Act
- ❖ Whistleblower Policy

All stakeholders to join hands to address this Public Health issue



# Brand Security: Indian Law



- ❖ The MoH amended Anti-counterfeit law of the Drugs and Cosmetics Act in 2009:
  - a. Maximum penalty of life imprisonment and fine of US \$ 1 Million or 3 times the value of the confiscated goods, whichever is more.
  - b. Offences are non-bailable.
  - c. Specially designated courts for trial of offences
  - d. Provision for compounding of minor offences.
- ❖ Whistle Blower Policy introduced in 2010



# Brand Security: The Court Directive



On all Pharmaceutical Product Packs in India:

- ❖ A unique ID
- ❖ Bar coding for all pharmaceutical products in India including exports

Being worked out by the 'Central Drugs Standard Control Organization (CDSCO)' of India





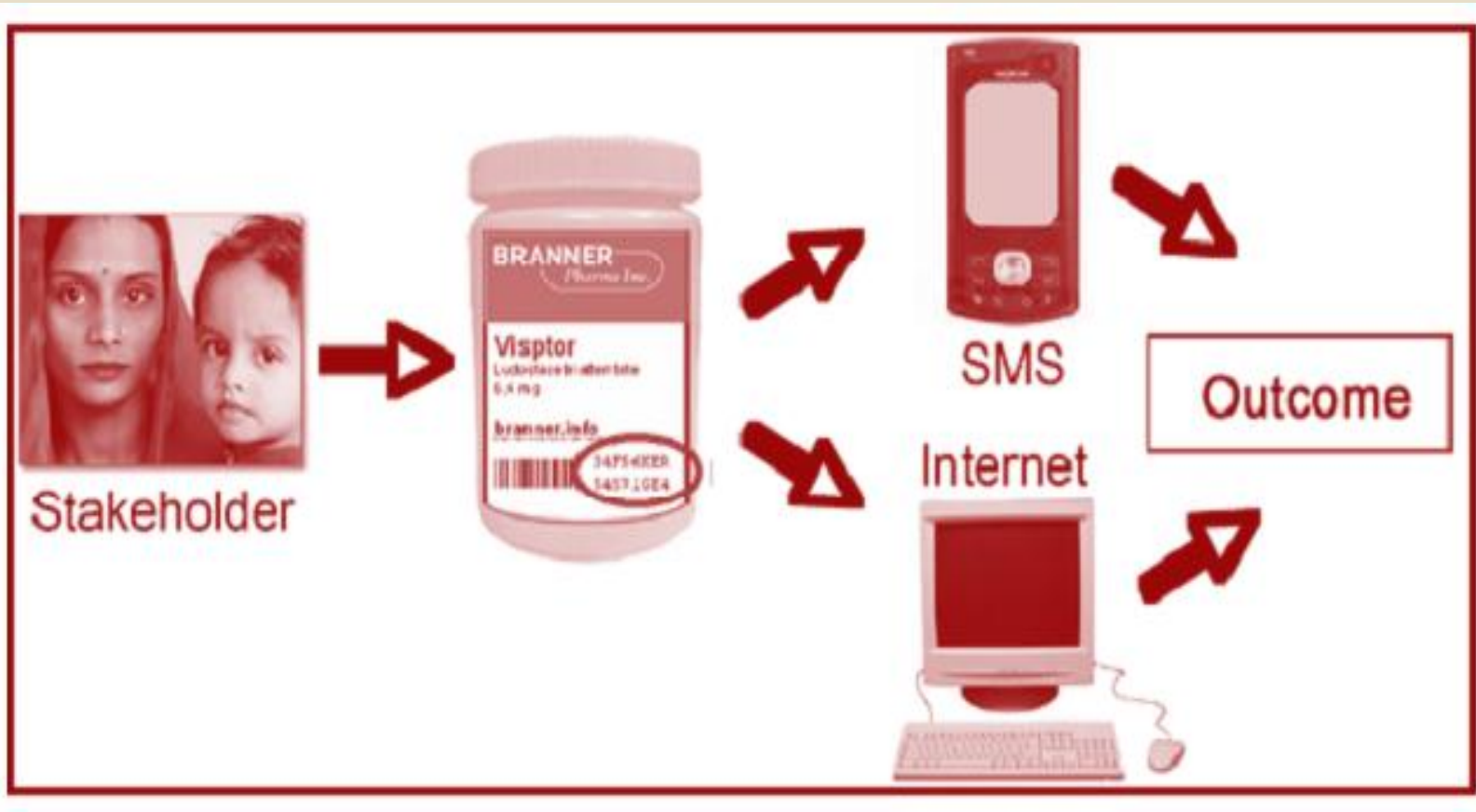
# Brand Security: The Process



- ❖ Consumer to check the legitimate products.
- ❖ Consumer to use cell phone to text a Unique Identifier Code on the medication to a phone number printed next to the code (inner/outer packaging).
- ❖ Consumer to receive an authentication text message if the product is not counterfeit.



# Use of “Unique Identifier Code”



# Brand Security: The Government Intervention



- ❖ Use of barcode technology as per GS 1 global standards at primary, secondary and tertiary level packaging.
- ❖ Encoding unique product identification code, Batch Number, Expiry Date and Serial Number of the Primary pack.
- ❖ ‘The track and trace technology’ will come into effect for exports from 1<sup>st</sup> October, 2011.



# A Unique Supply Chain Model of India

## Dabbawalas of Mumbai



- ❖ Forbes gave them Six Sigma rating for precision in performance
- ❖ Less than 1 mistake in 6 million deliveries
- ❖ 99.9999 accuracy percentage of correctness





**Thank You**