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Customer Focused Business Models: Dual Sourcing & Assortment Rotation

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Session Outline

- Dual sourcing: Mexico-China game
- Debriefing
- Assortment Rotation: Zara fast fashion

Mexico-China Simulation Game

- You are a $10B high-tech US manufacturer of wireless transmission components

- You have two assembly plants, one in China and another in Mexico, that supply a warehouse in McAllen, TX

- *How can you best manage this existing global network to launch a product?*

Financial Data

Sales unit price = $10,000/unit

Mexico unit sourcing cost = $8,000/unit

China unit sourcing cost = $7,250/unit

Ending inventory is disposed off at zero cost/revenue

Cash earns 1% per period

Debt costs 1% per period

Sales and Operations Data

- Impatient customers: stock-out = lost sale
- New product, unknown demand, perhaps similar to previous:

Sales Period:	5	6	7	8	9	10	11	12	13	14
SKU1	35	27	17	48	67	47	46	34	74	46
SKU2	28	31	48	26	84	61	19	33	48	24
SKU3	63	29	53	53	48	63	45	38	54	57
SKU4	42	69	48	29	63	26	22	54	36	36
SKU5	40	72	71	51	44	58	40	48	42	52
SKU6	64	52	44	52	74	70	43	53	33	56
SKU7	57	70	25	80	62	42	48	54	54	68
SKU8	41	49	48	72	80	35	40	58	44	80
SKU9	79	71	57	51	27	78	52	27	56	52
SKU10	54	59	54	48	31	51	42	31	49	47

- Mexico orders are available for sales next period (L = 1)
- China orders are available after 4 periods (L = 4)

Game Dynamics

- We will have four periods before the sales season starts so you can prime your supply pipeline
- The season is 40 periods (not including 4 priming periods)
- All teams face the same demand (separate yet identical markets)
- Then the sales season will start with weekly demand draws being revealed over time
  - Each week, sales are made *automatically* = minimum(demand, on-hand-inventory)
  - Then you can place replenishment orders

- **OBJECTIVE: MAXIMIZE VALUE!**

Before We Get Started

- Has every team received their team name and password?
- You can use the planning spreadsheet offline if you want
- Have a strategy! I will ask you to share it later
- You can log in now (if you haven’t already).
  - http://anderson.ucla.sourcinggame.net
  - Mozilla Firefox.
  - Don’t do anything yet (i.e., don’t submit any orders).

Order from China:
$ 7,250 per unit, delivered in 4 periods

Order from Mexico:
$ 8,000 per unit, delivered in 1 period

Retail Price: **$ 10,000**

Submit Orders >>

Current Period: **2**
Demand: **0**
Bank Balance: **-$ 168,500**

Inventory On-Hand	Units to be received in:		
	Period 2	Period 3	Period 4
12	0	0	10

Order History

Period	Order China	Order Mexico	Inventory	Demand	Sales	Costs	Revenue	Profit	Total Balance
1	10	12	0	0	0	$ 168,500	$ 0	-$ 168,500	**-$ 168,500**

- DO NOT HIT ENTER. **Wait until orders for both Mexico and China are entered and then hit submit**
- DO NOT CLICK on Results Status

Placing order for period 1. Please wait...

Please be patient. The game will continue once the next period has been initiated.
You can also check if the next period has started.

You have just ordered

China: 10 unit(s)
Mexico: 12 unit(s)

Pipeline for next period

Inventory On-Hand	Units to be received in:		
	Period 2	Period 3	Period 4
12	0	0	10

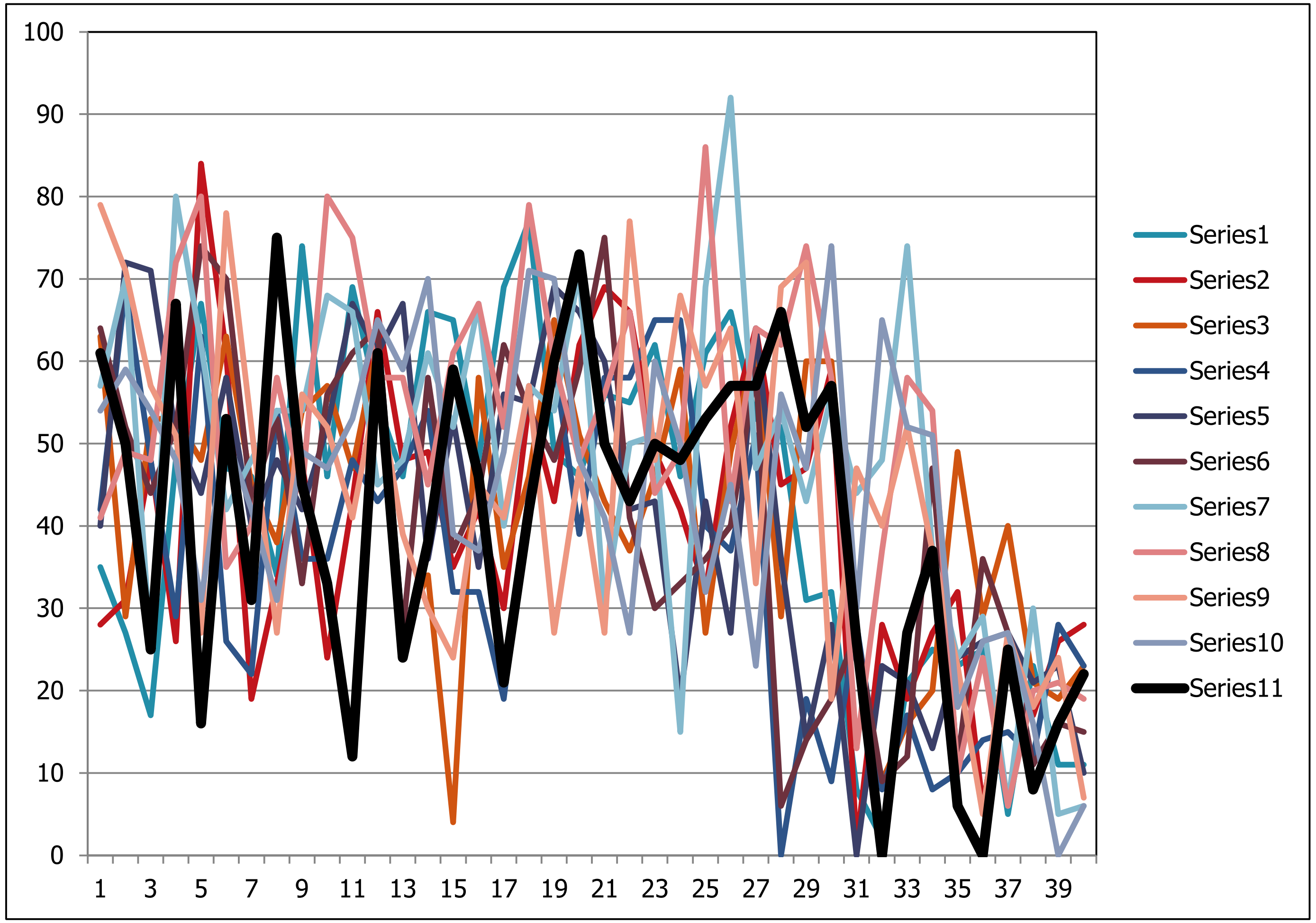
Order History

Period	Order China	Order Mexico	Inventory	Demand	Sales	Costs	Revenue	Profit	Total Balance
1	10	12	0	0	0	$ 168,500	$ 0	-$ 168,500	**-$ 168,500**

Let's Start

- Once all team orders are in, I will advance to the next period
- Game will be on a countdown timer after first few periods
  - Time will get a bit shorter as game advances
- You can submit your first period orders now

Demand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Series1
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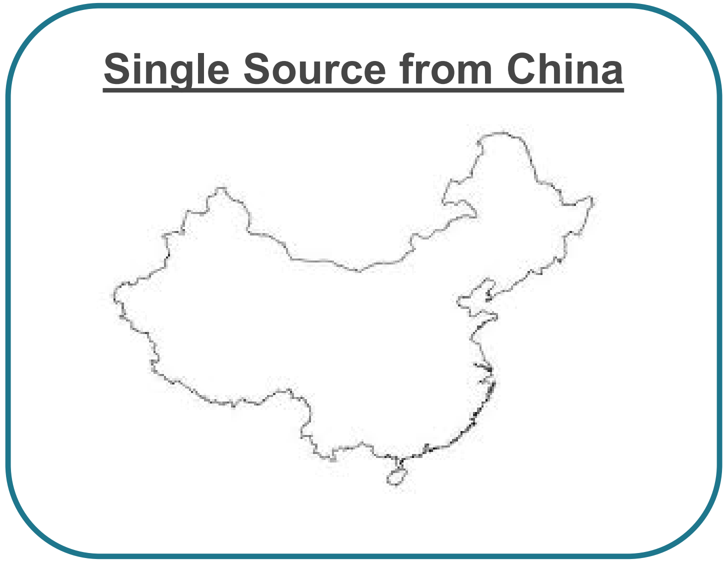
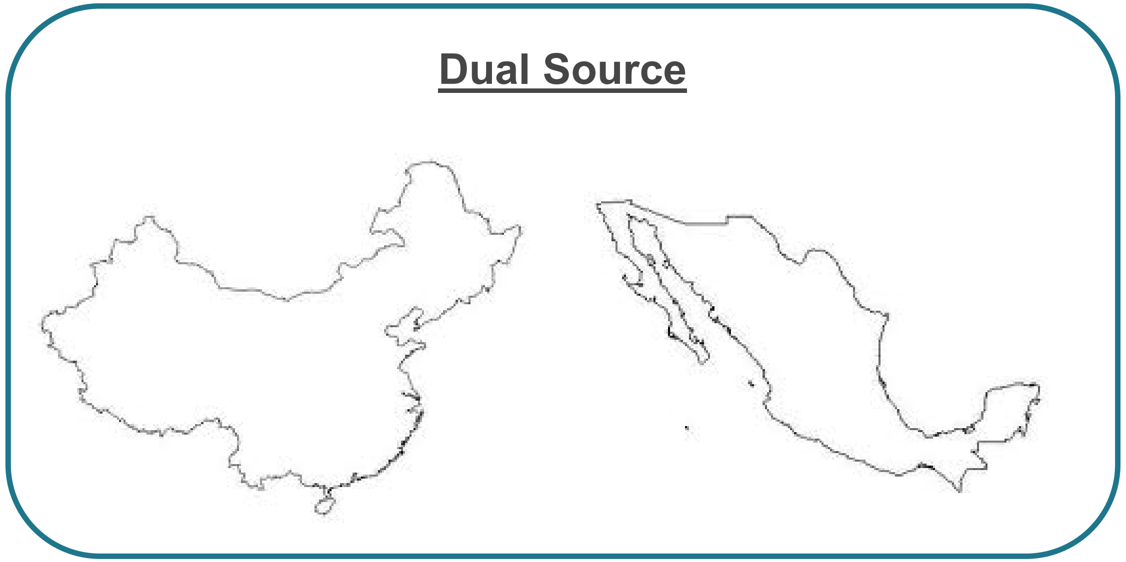
Sourcing Strategies





Dual sourcing slides courtesy of Brian Tomlin @ Dartmouth

Dual vs. Single Sourcing

Advantages of Dual Sourcing

- Tailor the responsiveness/efficiency tradeoff
- Cost competition.
- Reduce information rents.
- Access to larger amount of capacity.
- Mitigate disruption risk
- Hedge against cost / exchange rate uncertainty

Advantages of Single Sourcing

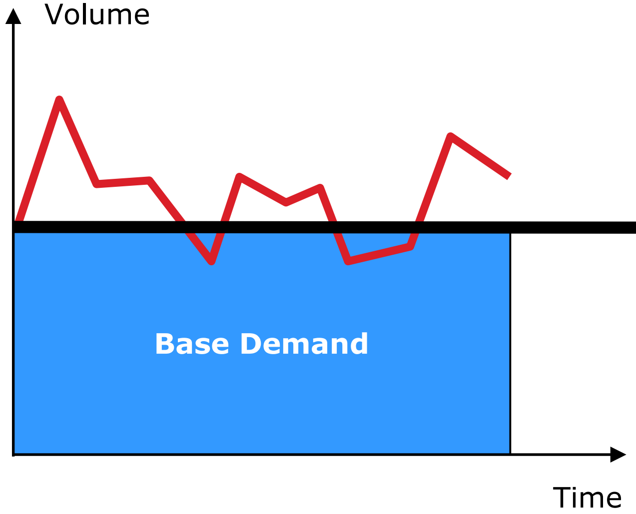
- Scale/learning economies
- Supplier commitment to process improvements
- Supply consistency
- Engineering benefits during design and any later change requests
- Preferential allocation of limited capacity if firm is rationing due to capacity shortage

Dual Sourcing

One Approach: Base-Surge

Base Source
(Distant/Cheaper)

Surge Source
(Close/More Expensive)



Allocate “base demand” to China.

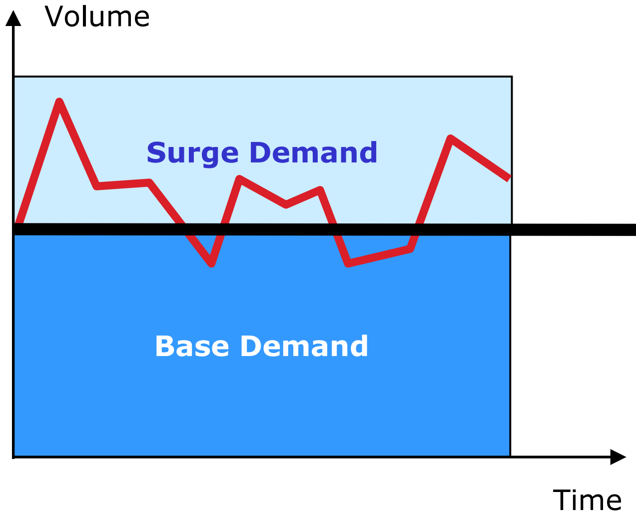
- Source constant quantity per period from China.
- Allow base supplier to focus on efficiency and not worry about variability.

Dual Sourcing

One Approach: Base-Surge

Base Source
(Distant/Cheaper)

Surge Source
(Close/More Expensive)



Fill "surge demand" from Mexico
- Proximity allows you to quickly respond to demand surges.
- Surge supplier focuses on volume flexibility.

Allocate "base demand" to China.
- Source constant quantity per period from China.
- Allow base supplier to focus on efficiency and not worry about variability.

Base-Surge Allocation

Base Source (Distant/Cheaper)	**Surge Source** (Close/More Expensive)
	

What factors influence the fraction allocated to the base supplier?
(assume supplier identical in terms of quality and other risks)

- Difference in cost
- Lead time vs life-cycle
- Demand uncertainty
- Cost of inventory

Key Points from Dual Sourcing Game

- Global networks have assets with different capabilities
  - e.g., expensive/quick versus cheap/slow suppliers

- Tailor your network operating policy to the advantages/disadvantages of your assets
  - e.g., allocate a base demand to the cheap/slow supplier (push) and use the expensive/quick supplier for surge demands (pull)

- Adapt supply chain to the product life-cycle

Session Outline

- Dual sourcing: Mexico-China game
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- Assortment Rotation: Zara fast fashion

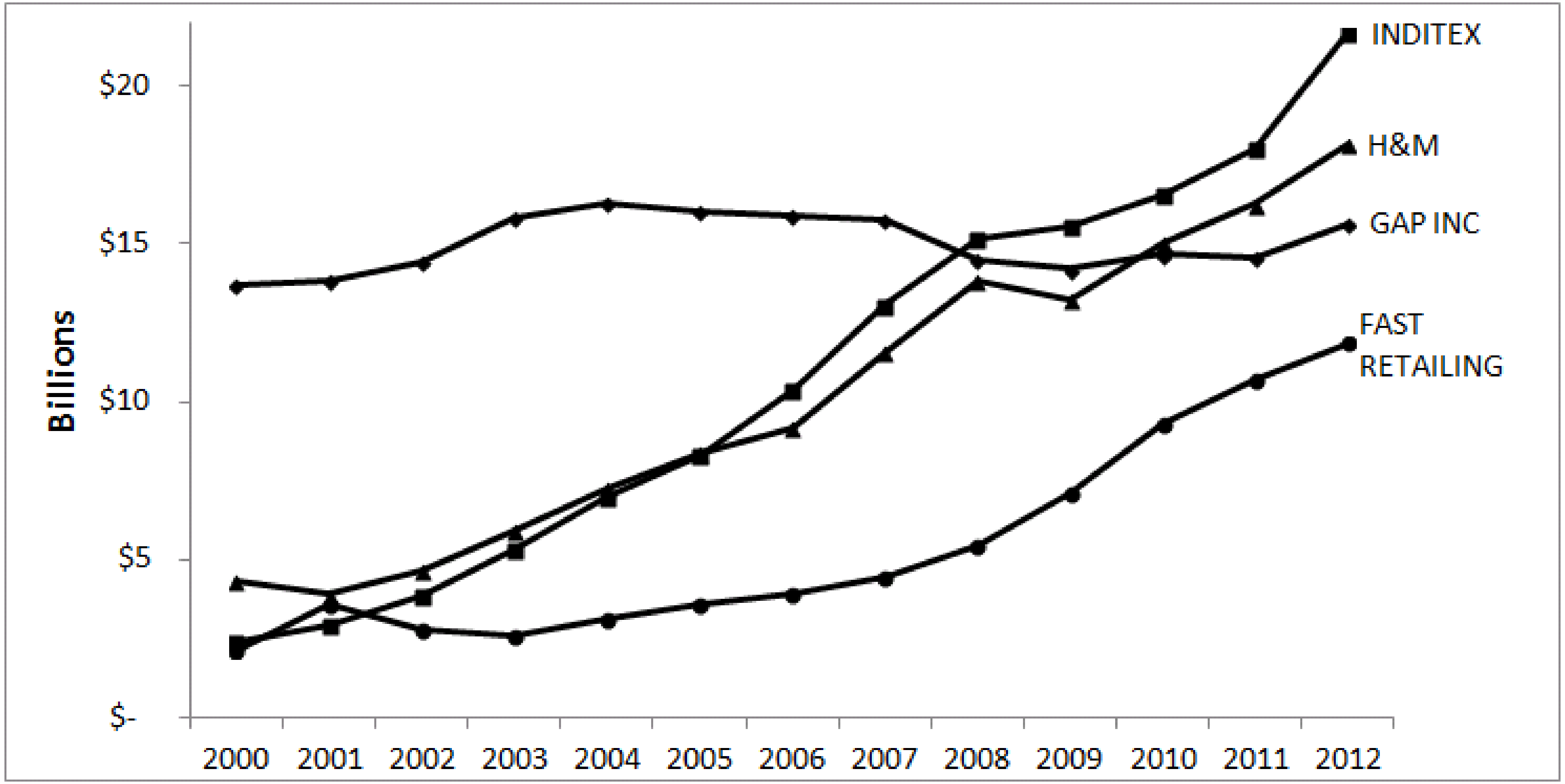
Motivation

	Retailer A	Retailer B	Retailer C	
Gross Margin	59.3% 59.8% 56.7%	59.1% 59.5% 61.1%	39.0% 39.4% 36.1%	← 2013 ← 2012 ← 2007 (Pre-Crisis)
Net Margin (ROS)	14.2% 14.8% 13.3%	13.3% 14.0% 17.3%	7.9% 7.3% 5.3%	
Working Capital /Sales	-5.6% -6.1% -6.5%	11.6% 10.9% 8.4%	10.4% 9.4% 7.2%	
Inventory Turnover	3.93 4.19 4.39	3.59 3.73 4.08	4.95 5.20 5.14	
ROA	17.3% 18.3% 17.7%	26.1% 28.0% 32.6%	16.3% 15.2% 10.6%	
GMROI	5.73 6.23 5.74	5.20 5.49 6.40	3.16 3.39 2.90	
Like-for-like Sales	3.0% 6.0% 5.0%	0.0% 1.0% 5.0%	2.0% 5.0% -4.0%	

Note: Working Capital = Receivables + Inventory - Payables

Source: Annual Reports

Revenues (in US$)



Source: Caro & Martínez-de-Albéniz "Operations Management in Apparel Retailing: Processes, Frameworks and Optimization" (2013)

Key Concepts

FIT: Align operations strategy with business strategy

FOCUS: Choose capability on which to excel

Strategic Fit & Focus

The Goal

↕

Corporate strategy:
What business to be in

↕

Business strategy:
Articulates the value proposition

↕

Operations strategy:
How to deliver the value proposition

Operations Strategy

Structural choices ("hardware"): e.g.
- Capacity
- Sourcing
- Supply chain design

Infrastructural choices ("software"): e.g.
- Inventory management
- Service encounter
- Quality control policy

Source: *Operations Strategy* Van Mieghem 2008

Quick Recap

- FIT: Align operations strategy with business strategy
- FOCUS: Choose capability on which to excel
- OPERATIONS STRATEGY: Resources and processes that deliver a value proposition
- COMPETENCIES: Capabilities used successfully to gain a competitive edge

What Is Fast Fashion?

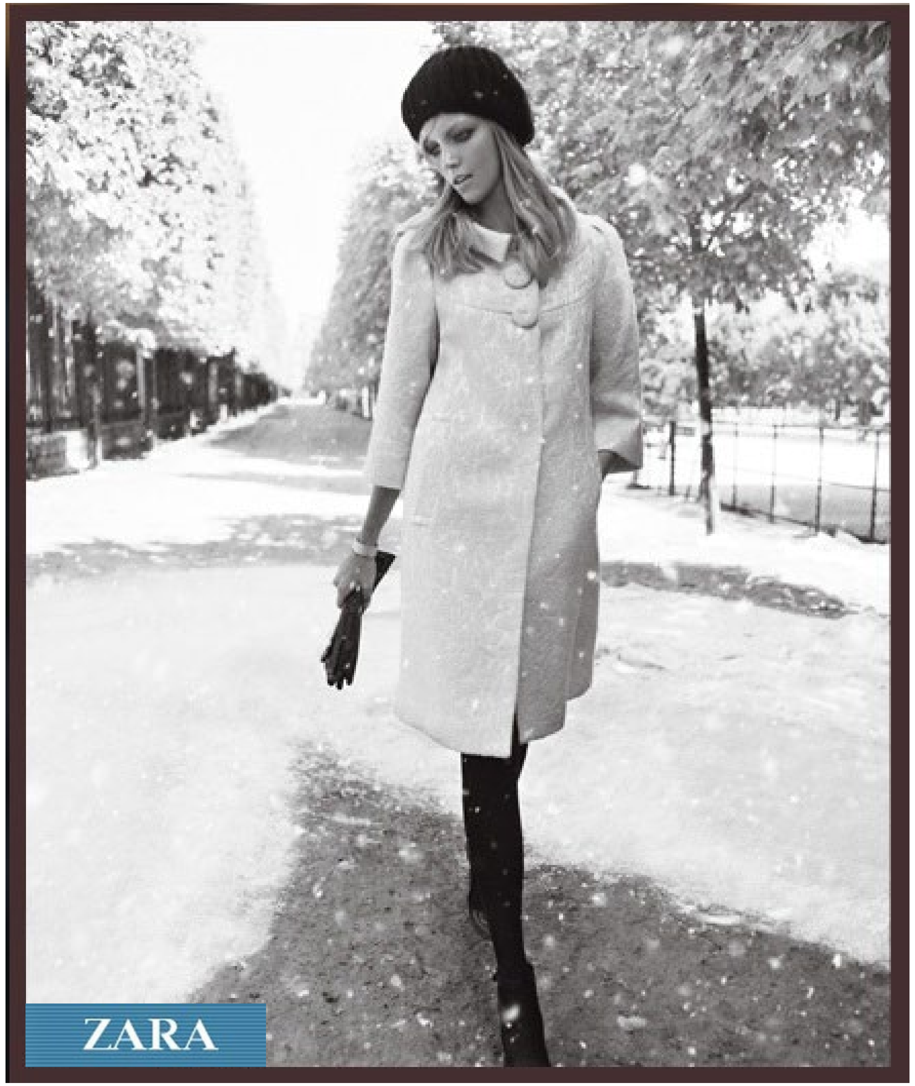
- <u>Business Strategy</u>:

“Cutting-edge fashion at affordable prices”

- <u>Operations Strategy</u>: builds on Quick Response

Quick Response: similar to what just-in-time manufacturing has meant to the auto industry (Hammond and Kelly 1990)

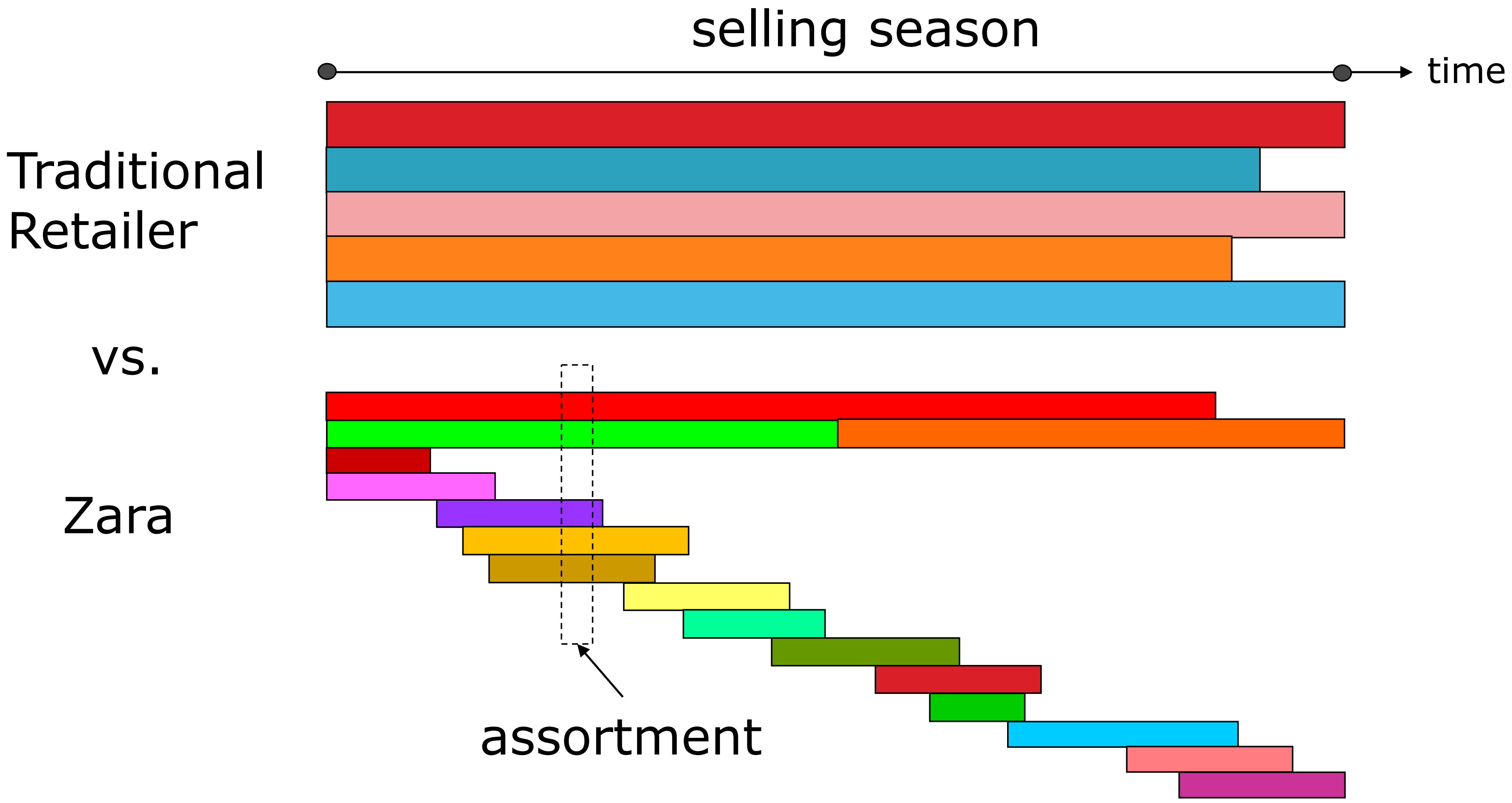
Zara: Fast Fashion



Zara: 3Cs

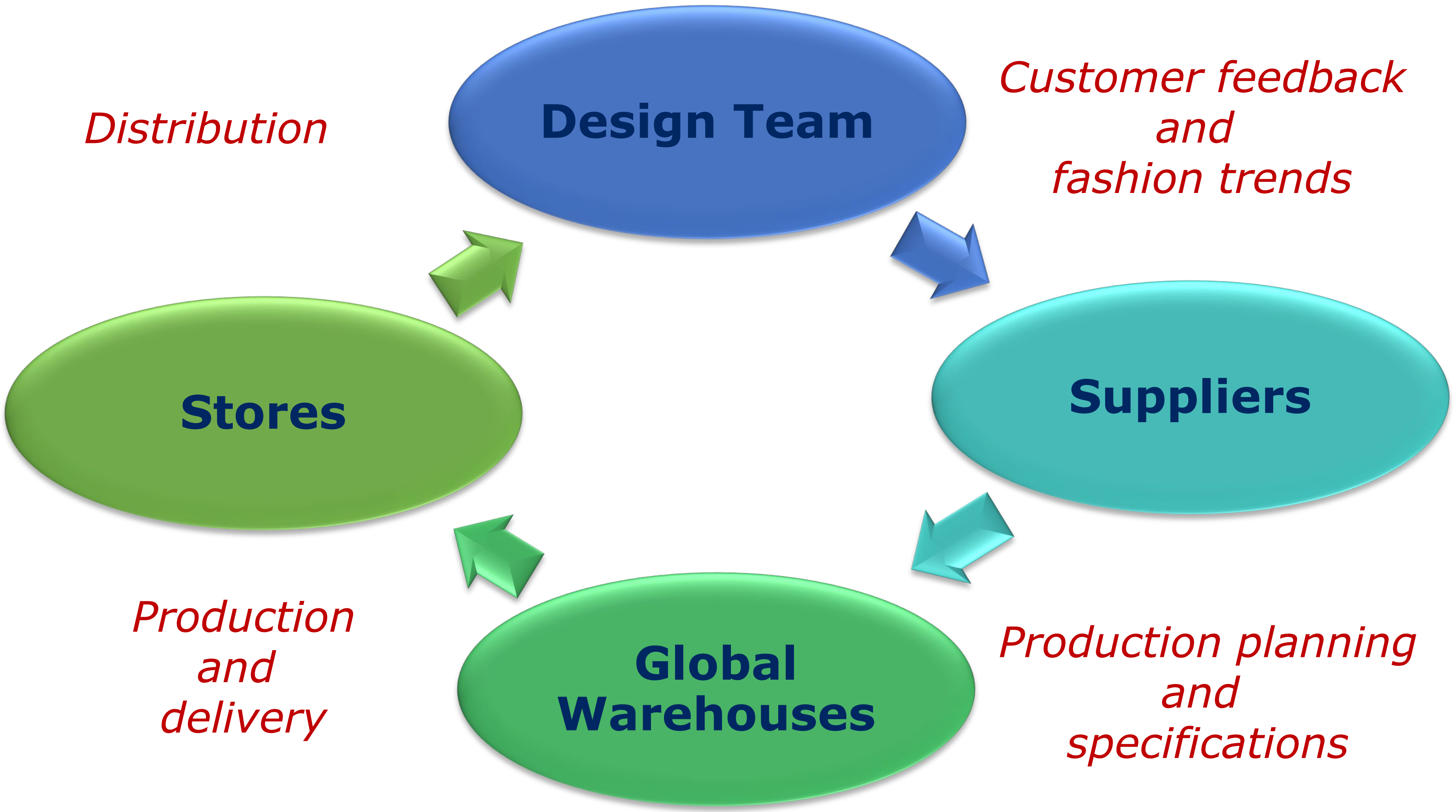
- **Company**
  - Founded 1975, part of Inditex holding
  - 1800+ stores, 75+ countries
- **Customers**
  - Women, Men, Kids: ages 3-40
  - Medium budget fashion seekers
- **Competition**
  - H&M, The Gap, Uniqlo, SHEIN
  - Competes on…

The Fast Fashion Business Model



Average # visits / customer / year = 17

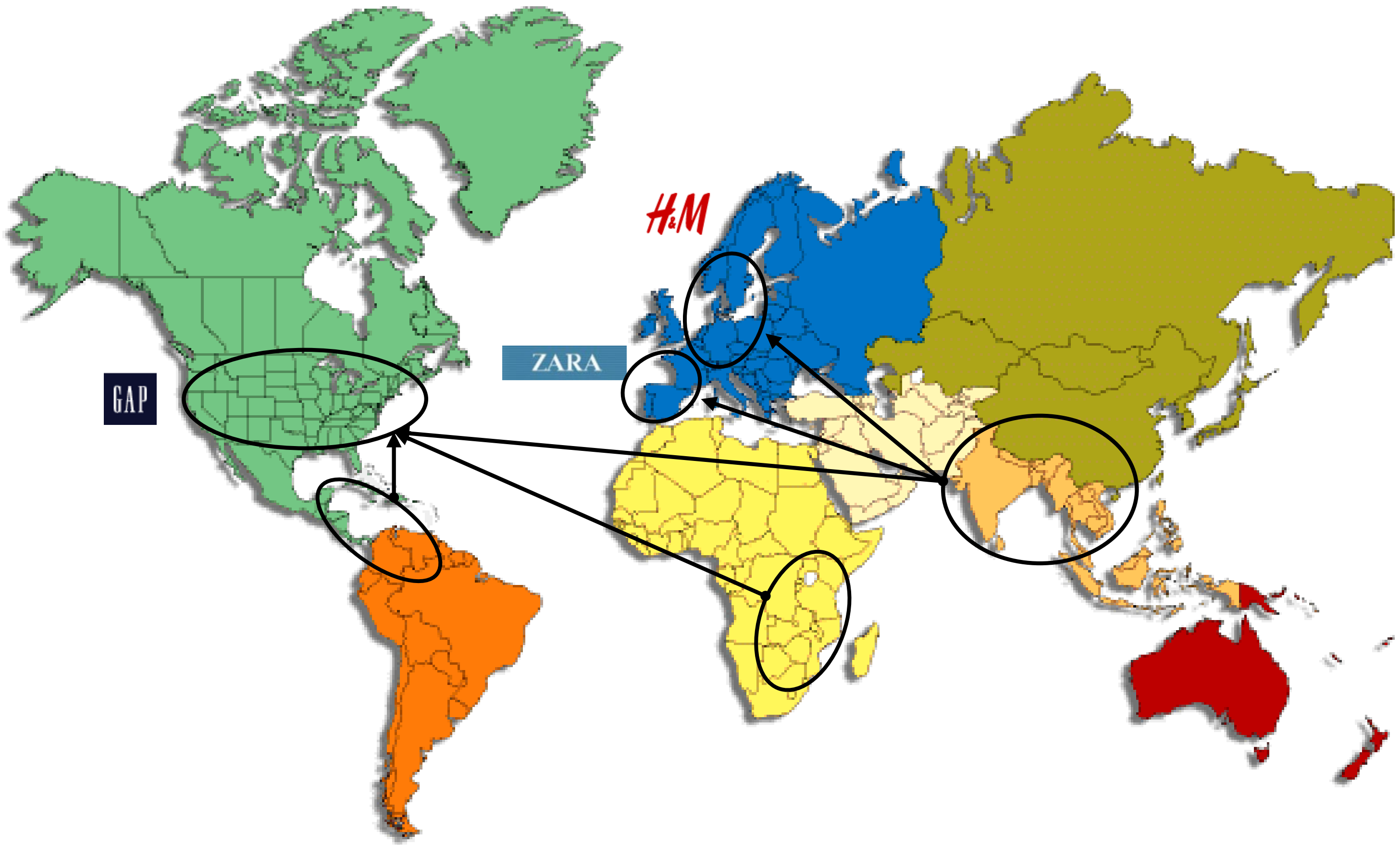
Zara's Continuous Business Cycle



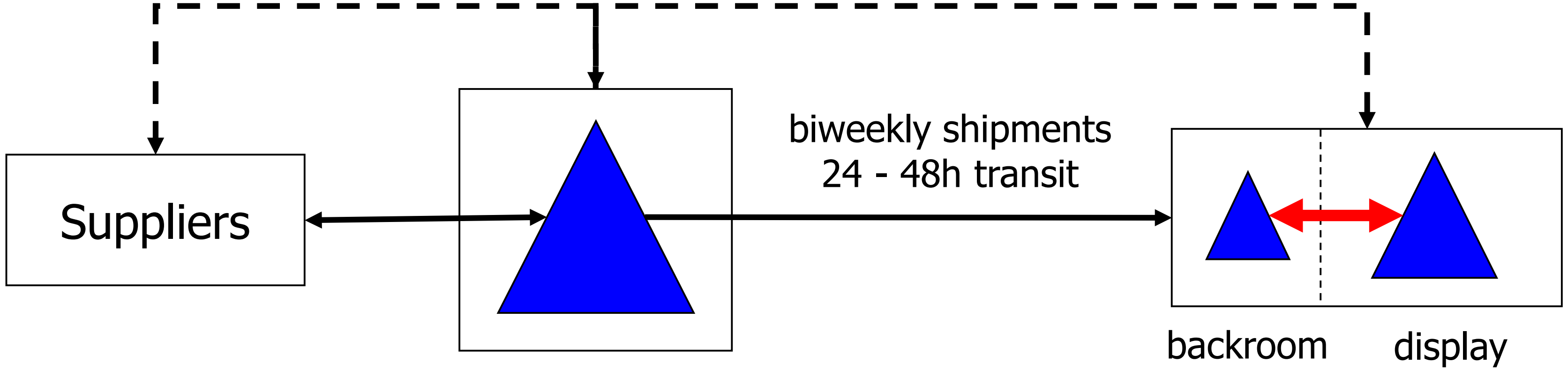
Retail Industry Benchmark

	Time to Market	Pre-season Commitments	Diff. Products Manufac. p/Year	After Season Sales	Average Markdown
Traditional Retailer	6-9 months	45-60%	2,000-4,000	30-40%	30%
Zara	2-5 weeks	30%	~8,000	15-20%	15%

Source: "Zara" CIBER Case 2002; "Zara" HBS Case, 2003.



Zara's Supply Chain (2010)



45% Asia
41% Europe
9% Africa
5% Americas

<u>4 main warehouses:</u>
A Coruña, León, Madrid
and Barcelona

<u>1723 Stores:</u>
29% → Spain
44% → R. Europe
11% → America
16% → R. World

Source: Annual Report, 2010.

Resource/Process Choices

	Resource	Process
Management		
Design		
Sourcing/Manufacturing		
Distribution		
Merchandising		
Store Operations		

Does Zara Have Strategic Fit?

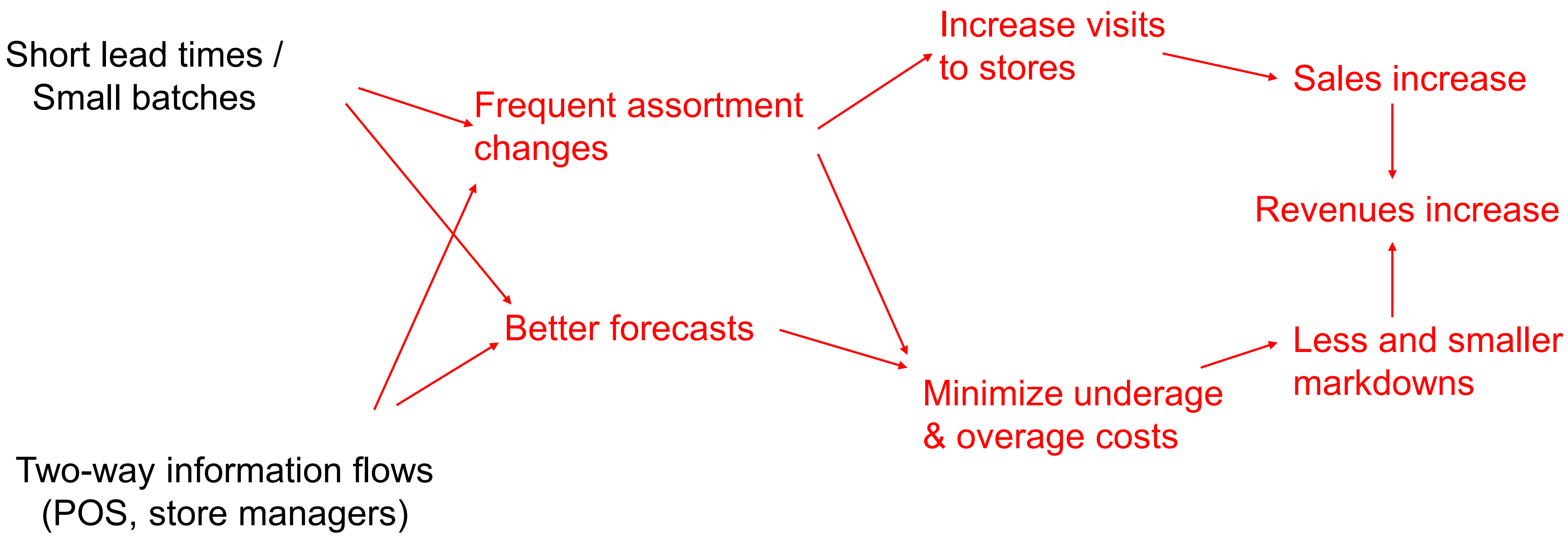
- What is Zara's business strategy?

"Cutting-edge fashion at affordable prices"

- How is Zara doing in terms of Fit and Focus?
- What structural/infrastructural choices allow Zara to offer "cutting-edge fashion"?

Selling at an Affordable Price

- If procurement costs are higher, how can Zara still sell at an "affordable price"?



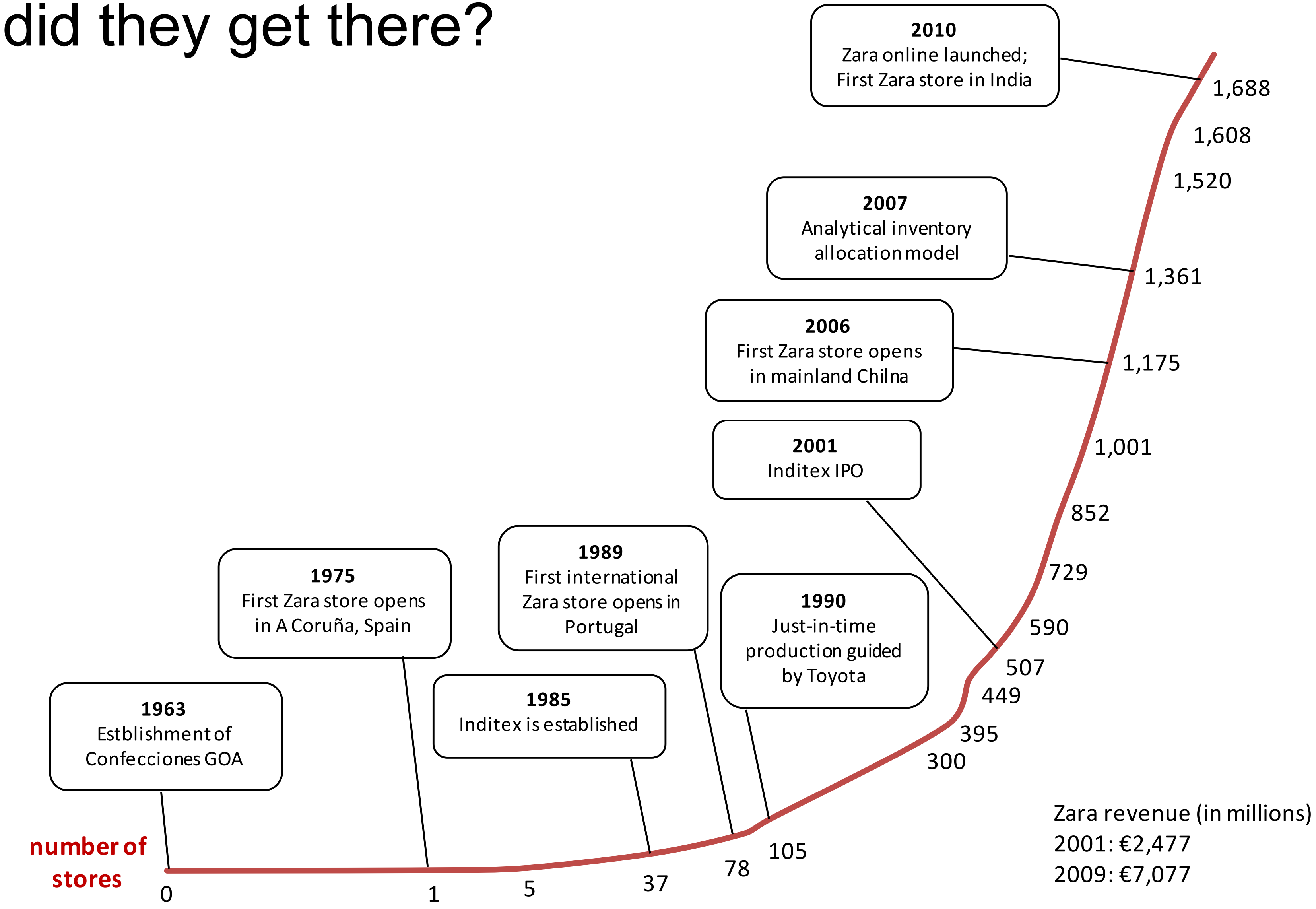
Operating Margin Analysis

- Local/regional procurement costs are 15-20% higher
- Assume traditional retailer expects 50% gross margin (i.e. 100% markups on manufacturing costs)

	Traditional Retailer	Zara
Posted Selling Price	100.0	100.0
- Markdown	-30.0	-15.0
Retail Selling Price	70.0	85.0
- Manufacturing Cost	- 35.0	-39.9
Gross Margin	35.0	45.1
- Advertising	- 2.5	-0.3
Advertising-adjusted Margins	**32.5**	**44.8**

Zara's Learning Path

- How did they get there?



Motivation Revisited

	Zara (Spain)	H&M (Sweden)	The Gap (U.S.A.)
Vertical Integration (2007)	Fully integrated. Subcontracts sewing and shipping	Controls every link in the chain but does not own factories	From design to store but outsources production
No. of stores worldwide (2010)	1,723	2,206	1,573
No. of Countries (2010)	77	38	28
Distribution of Stores – Main Locations (2010)	55% Southern Europe 4% North America 16% Asia	62% Northern Europe 12% North America 5% Asia	13% Europe 72% North America 15% Asia
Assortment Composition (2006)	40% Basic 60% Fashion	>70% Basic <30% Fashion	99% Basic
Sourcing - Main Suppliers (2006)	34% Asia 50% Spain & Prox. 14% Rest of Europe	>60% Asia <40% Europe	97% outside U.S.A.
Lead Times - Dual SC (2006)	Efficient SC: 6 Months Responsive SC: 2-5 Weeks	Efficient SC: 6 Months Responsive SC: 3-6 Weeks	Efficient SC: 9 Months
New Arrivals (2010)	Twice a week	Daily	Occasionally
Pricing (2010)	Overall, higher than H&M (especially out of Spain)	Lowest among Fast Fashion	Comparable to Zara, if not higher
Marketing Expenditure (2010)	0.3% of Revenues	3-4% of Revenues	3.5% of Revenues

Note: North America includes only Canada and U.S.A.
Source: Annual Reports and Public Press

Future Challenges

Lessons Learned from Zara

- **Strategic Fit:**
  - Aligned business and operations strategies are self-reinforcing
- **Time is money:**
  - Short lead times can compensate for higher costs through less uncertainty and less need for markdowns
  - Value of assortment rotation
- **Developing the best technical capabilities is not sufficient for success:**
  - What matters is to embed them in business models that effectively develop and deploy them

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¡Muchas gracias!