



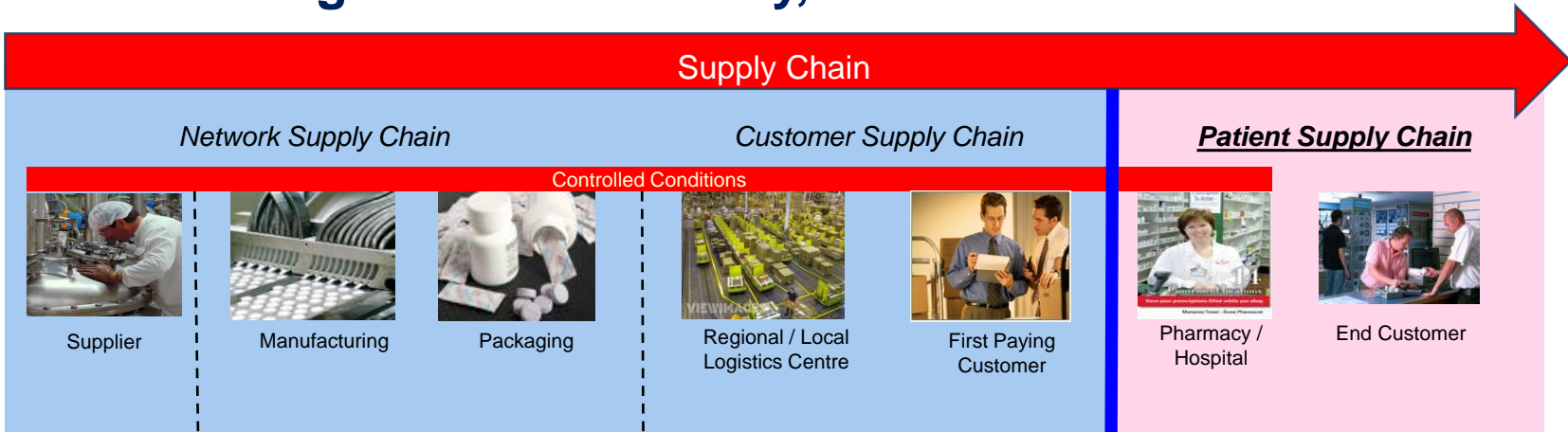
**Sandoz**

# Industry Supply Chain Resilience

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**SANDOZ** A Novartis  
Division

# Generic & Originator- One industry, two business models

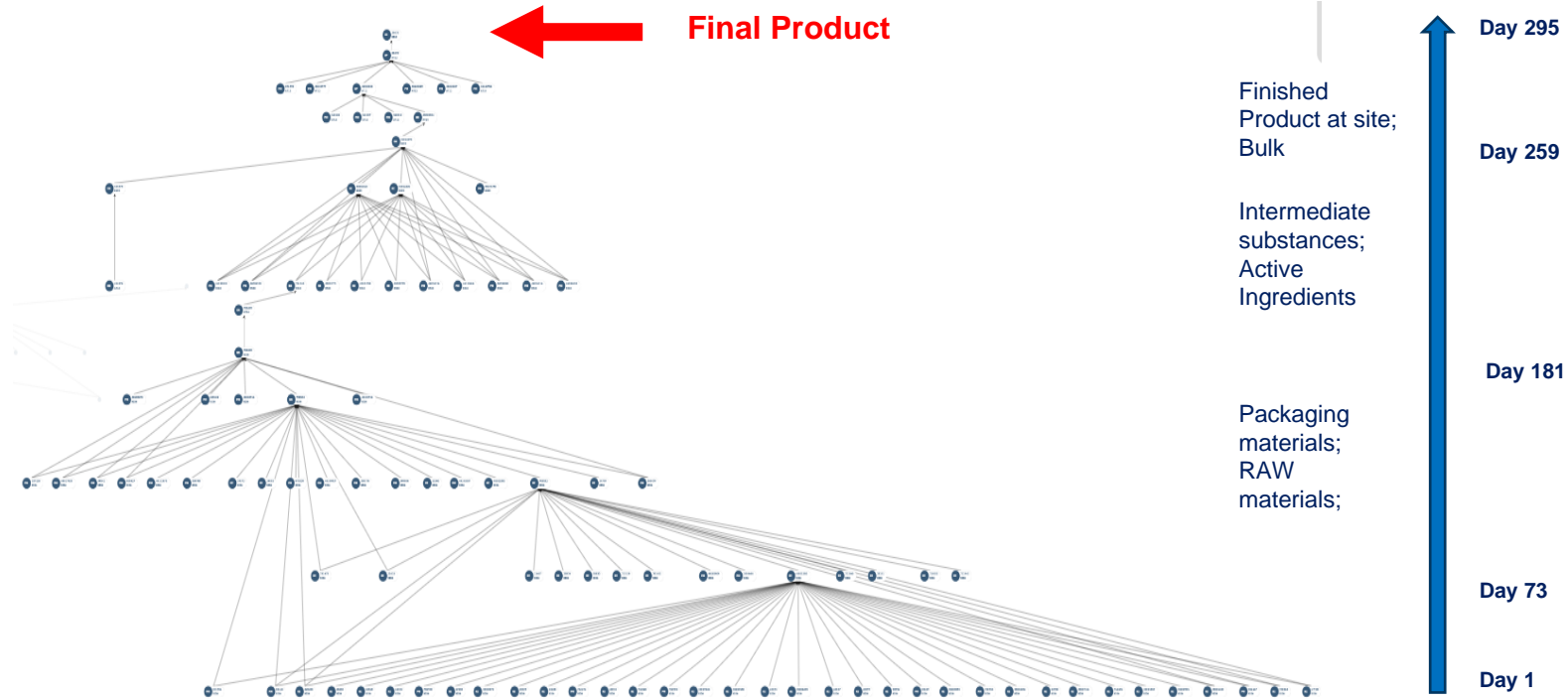


Business Model	Supply Chain Cost as % of price	Price
Originator	Lower	Higher
Generic	Higher	Lower

Cost of Generics Supply Chain is high compared to price  
 Impact of cost burden seen in manufacturing consolidation, market exits & shortages, primarily in generics

# Complexity of the supply chain to the Final Product

- EU Pharma Strategy encourages dialogue on supply chain



On average >350 components necessary either produced, purchased or in-house  
We need them all on time to make the final product

# Supply Risk Management

## Inventory Management

- Inventory and product prioritization
- National/regional stockpile requests
- Customer dedicated inventories and demand management

## Sourcing Strategy

- Dual sourcing
- Supplier risk identification & Audits
- Product prioritization

## Mfg. network and footprint

- Preserve current strong EU footprint
- Launch sites (risk analysis & strategy)
- Network Analysis & Future sites

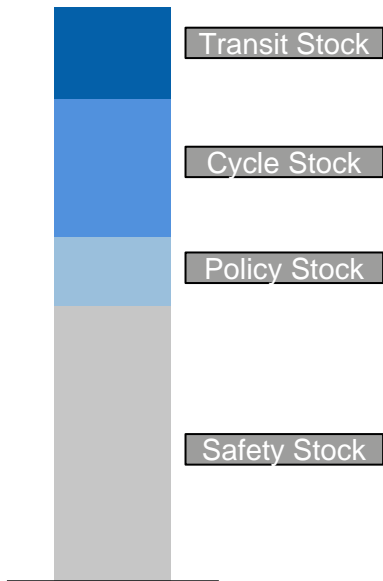
Governance / Training / Best Practice Sharing / Empowerment

Supply Risk Management process assesses whole supply chain network  
Identifies risks & implements counter-measures across the portfolio

# Stock and Dual Sourcing Strategy

- issues and costs discussed with commission, member states and industry

## Stock Strategy



## Dual Sourcing Strategy



*Drug Substance* first (longest duration)



*Finished Product* covered through safety stock



*Drug Product*. Focus on flexibility e.g. 2 sites registered

Average cost to build dual source is \$300K – \$1M

Ensure a clear policy on stock for entire portfolio  
Link with the dual sourcing strategy brings supply chain resilience

# The Future

## Industry Focus



Further improve supply by continuing further

- active dual sourcing
- inventory policies
- operational excellence programs to further improve site reliability
- re-inforce end to end supply network management



«European Footprint» can reduce dependency on other territories

- only solution if combined with a shift in focus from industry and governments
- could have the opposite impact driving to even more shortages

## Government & Industry Focus



Where a change in government & industry focus would help:

- **data transparency for coordination/collaboration** across industry
- reward manufacturers for **investing in supply resilience**
- **promote sustainable contracts and pricing**
- **Increase regulatory flexibility**