11. Supply chain management

Daniel Karlsson

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Supply chain game

- Each week, each stakeholder in the supply chain decides how much to order from their supplier and places their order

- When everyone has placed their orders, you jump in next round
- The lead time from order to delivery is 2-3 weeks
- If you have products in stock, you deliver immediately, if not a backlog is created
- Inventory and backlog cost money

- When all rounds are done, review the summary and provide reflections

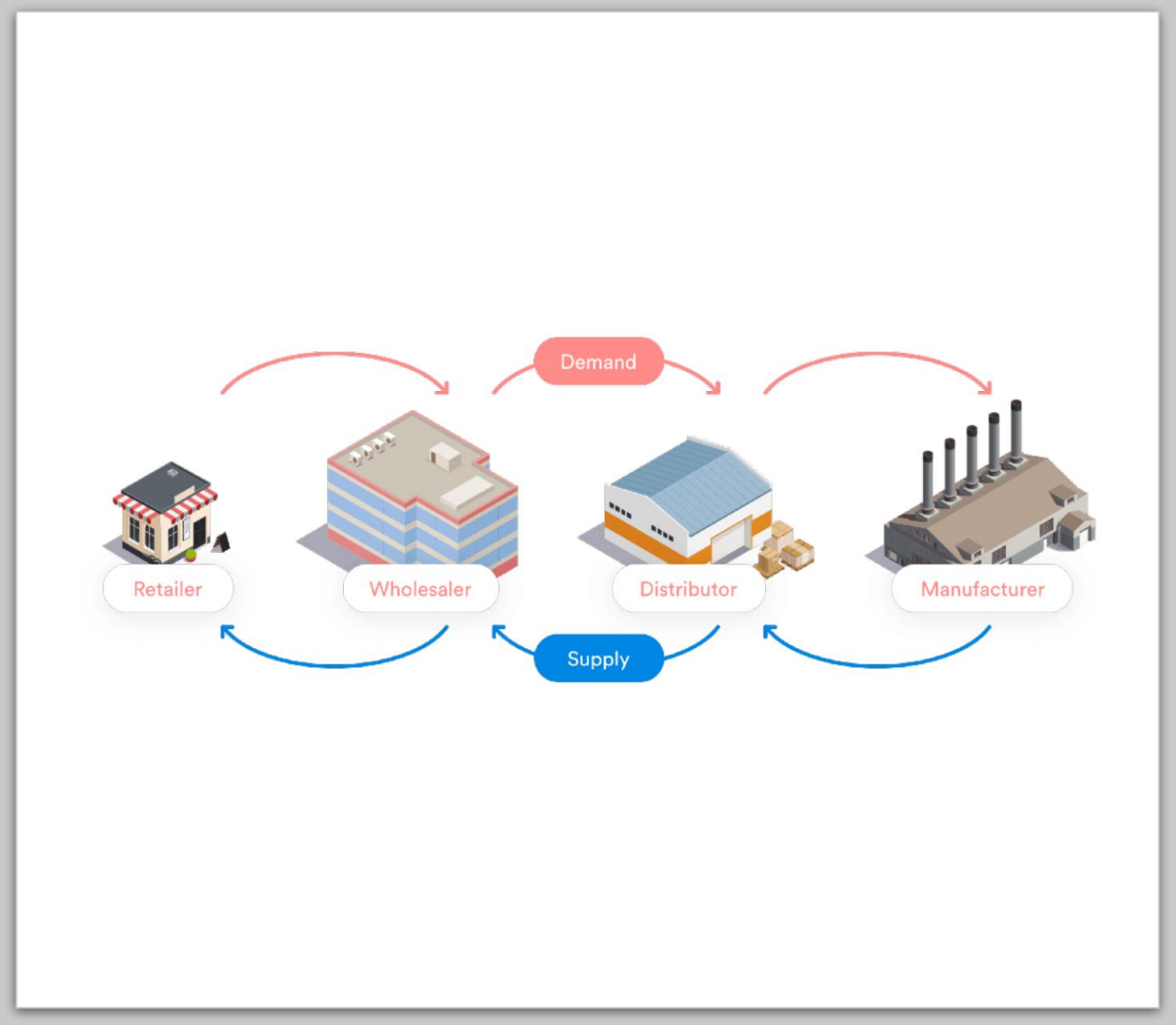
Supply chain game

Goal:

- Keep inventory as low as possible – inventory costs you money
- Make sure you can always deliver - missed orders (backlog) cost you money

The supply chain consists of:

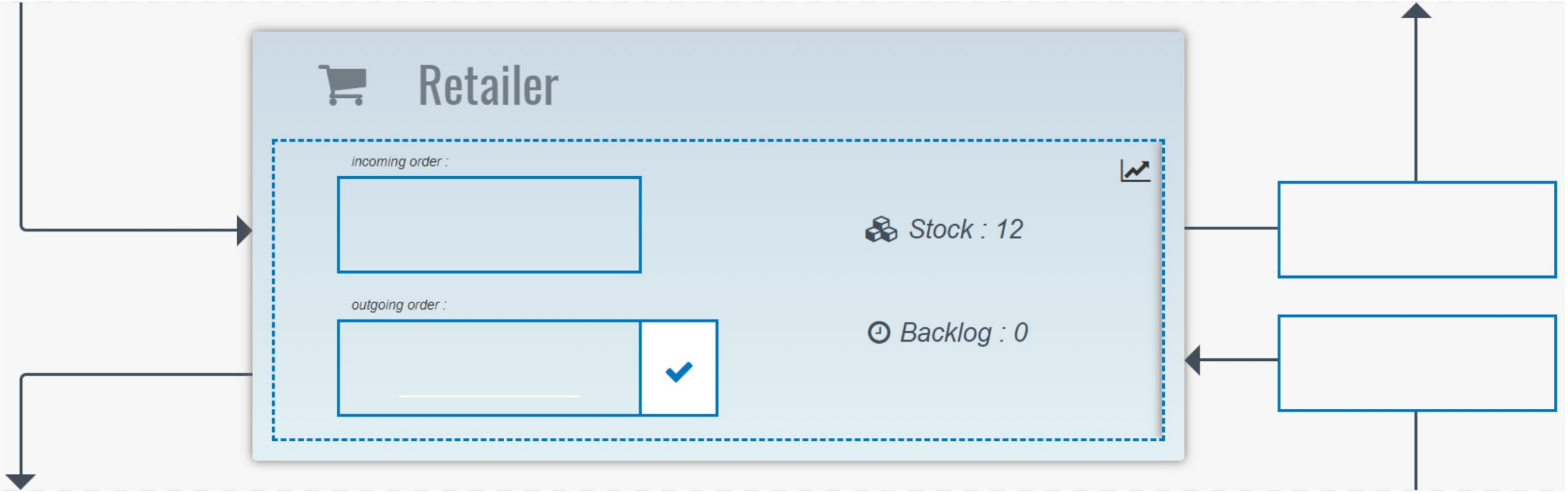
- Retailer
- Wholesalers
- Distribute
- Manufacturer



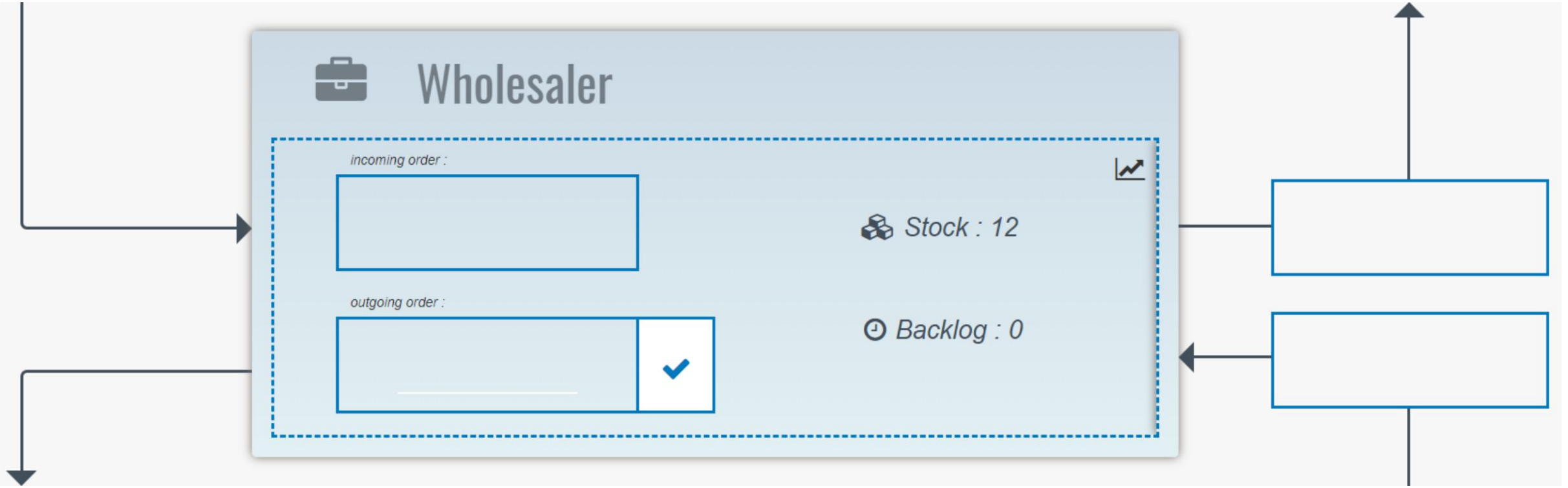
Some simplifications in the game

- There is only one product and one end customer
- No deficiencies from the raw material supplier
- No unplanned problems or disruptions in the delivery or order processes

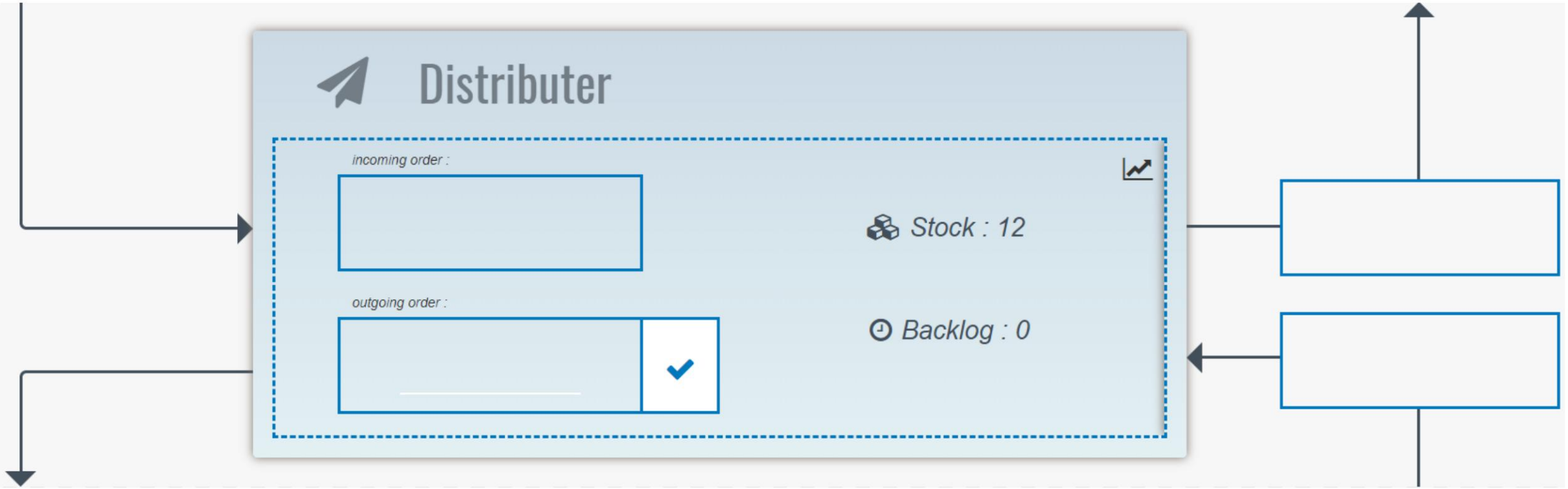
The retailer



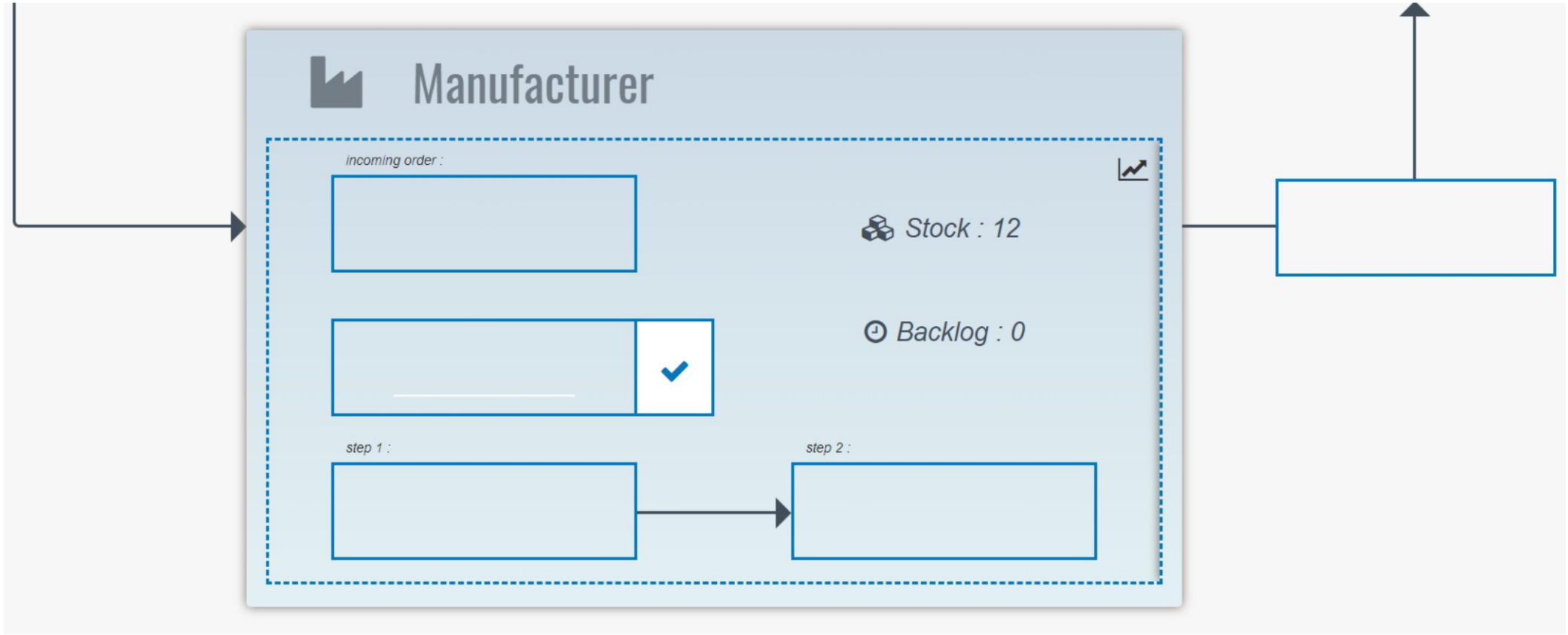
The wholesaler



The distributor



The manufacturer



Supply chain game

- Four people per supply chain
- Before placing your first order, read through the tips presented

- Link to Supply chain game

Supply chain game - Discussion

- How was the result?
  - Good or bad?
  - Were there any delays?
  - What did the cost end at? (total and for each unit in supply chain)
  - Was there a bullwhip effect?
  - Why did it happen?
  - Lead times
  - Batches
  - Safety stock
  - Delivery flexibility
- What should we change next time?

Supply chain game - Discussion

- How was the result?
  - Good or bad? •

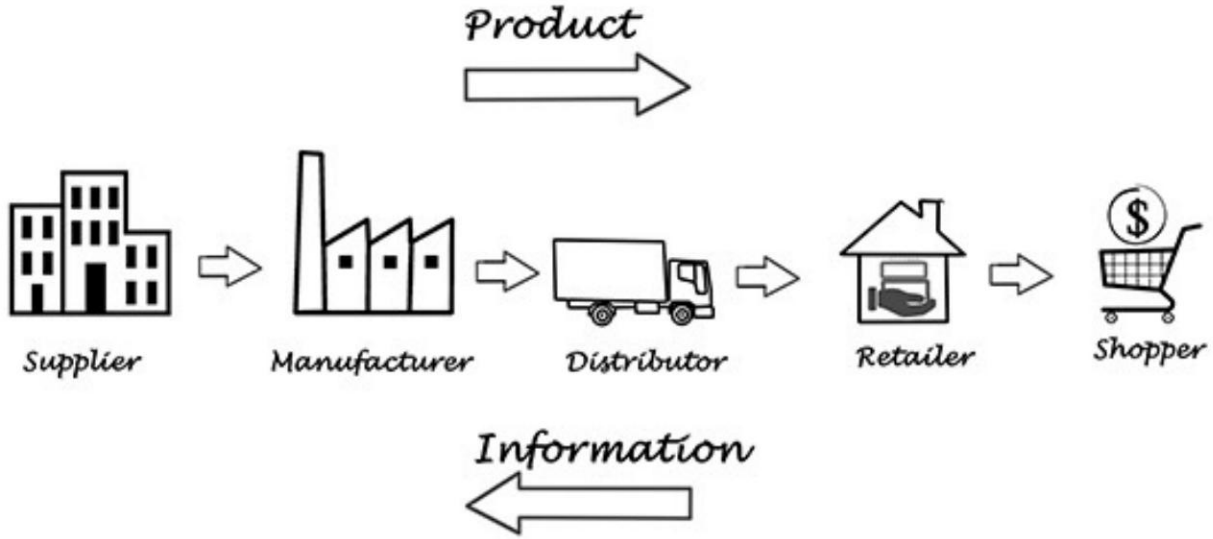
    Were there any delays?
  - What did the cost end at? (total and for each unit in supply chain)
  - Was there a Bullwhip effect?
- Why did it happen?
  - Lead times
  - Batches
  - Safety stock
  - Delivery flexibility
- What was the difference from the first round?

Two central concepts i SCM

Feedback and forward feedback

feedback

- Our stock levels look like this
- We need the next delivery then
- Next delivery we will need this much
- This is how we react to varying transmission volumes
- We would have liked to have this delivery frequency
- Etc.

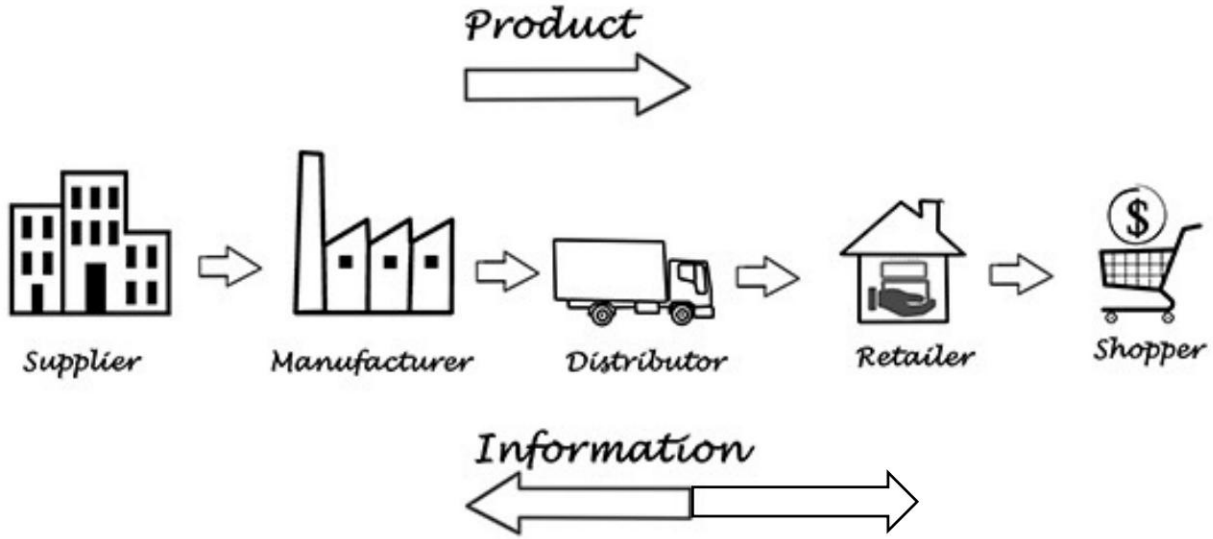


Two central concepts i SCM

Feedback and forward feedback

Feed forward

- We have/will have this in stock
- We will be ready with this order then
- We would like to send these volumes
- We would like to deliver with this frequency
- We can handle this one delivery flexibility
- Etc.



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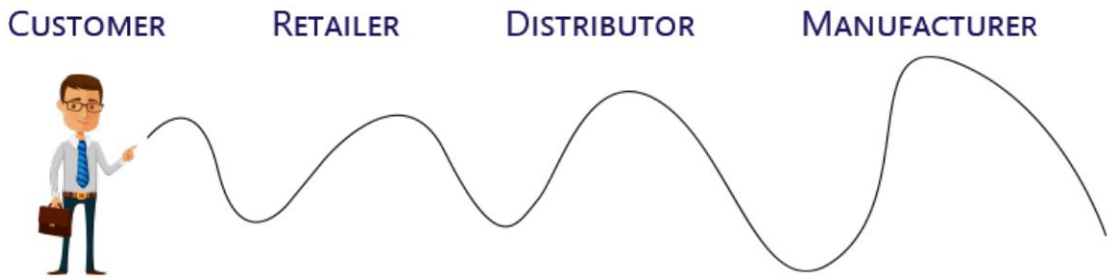


Bullwhip effect

- Random variations affect forecasts and are interpreted as a trend
- Insufficient communication between the ranks leads to wanting to guard one
- Time delays between the links mean that different links go after different ones forecasts

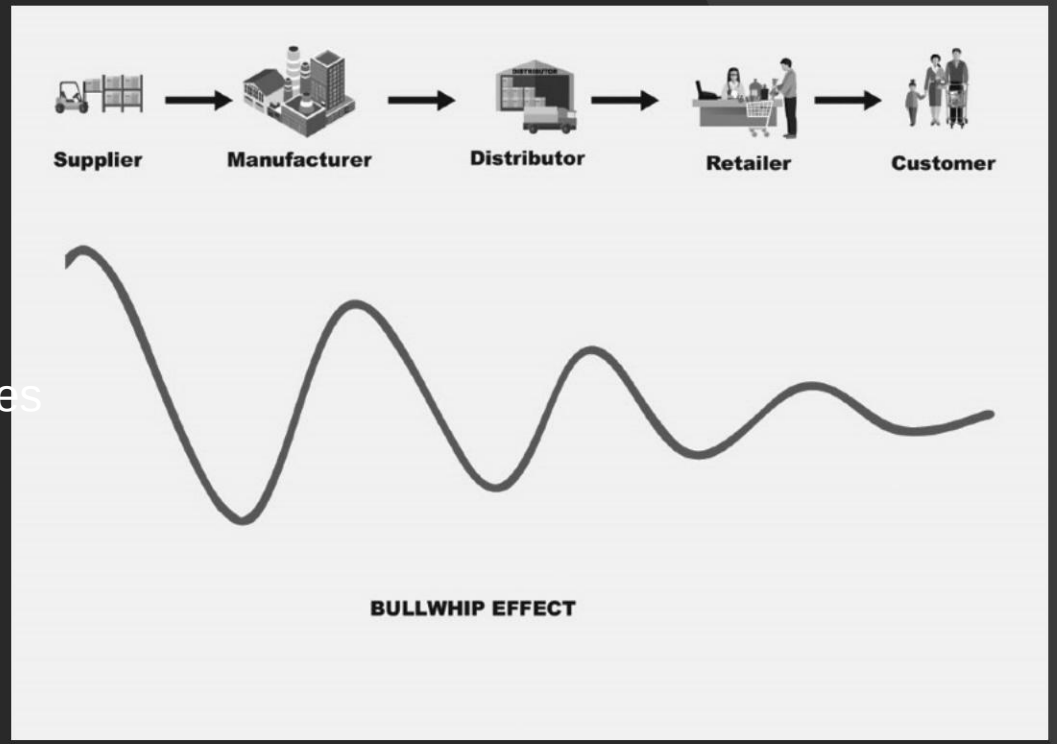
The bullwhip effect

- Some ways to reduce the Bullwhip effect
  - Reduce lead times
  - Forecasts and order information upstream in the supply chain •

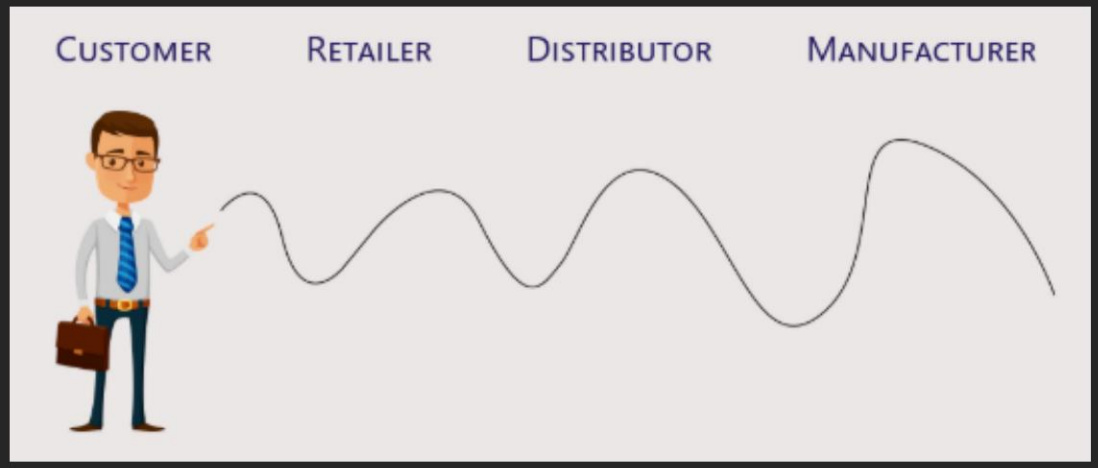
  Smaller and more consistent order

  sizes • Use stable pricing

  structures • Reduce the number of intermediaries



The bullwhip effect



Structural causes

• Lack of transparency in the supply chain • Long lead times • Too many steps in the chain • Not demand-driven • Discount structures and campaigns • Etc

Behavioral causes

• Over-reaction to shortages
• Withholding orders to reduce inventory
• Speculation in inventory • Over-ordering to secure one's needs
• Etc

Case: Supply chain management

See article on Omniway

1. What criticism does Professor Mats Abrahamsson make against Swedish retail company?
2. What does he think the retail business is doing wrong a logistic and an SCM perspective?
3. Describe the differences between the two different logistics systems for the trade
4. How is it that so much of the logistics costs are in the stores, and why is this often missed?
5. At the end, Mats presents 29 guiding principles, what is meant in concrete terms in principle 5: "Optimization for the whole is always prioritized before optimization of the parts"?