



# Inventory Matters – Reviving the Forgotten Principles

**DAWSON CONSULTING**

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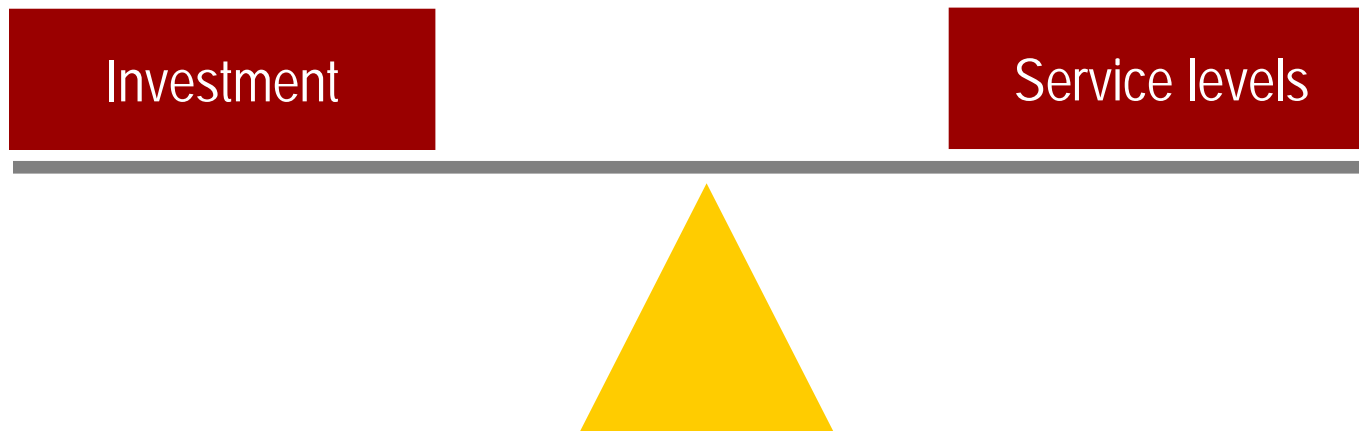
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## Presentation structure

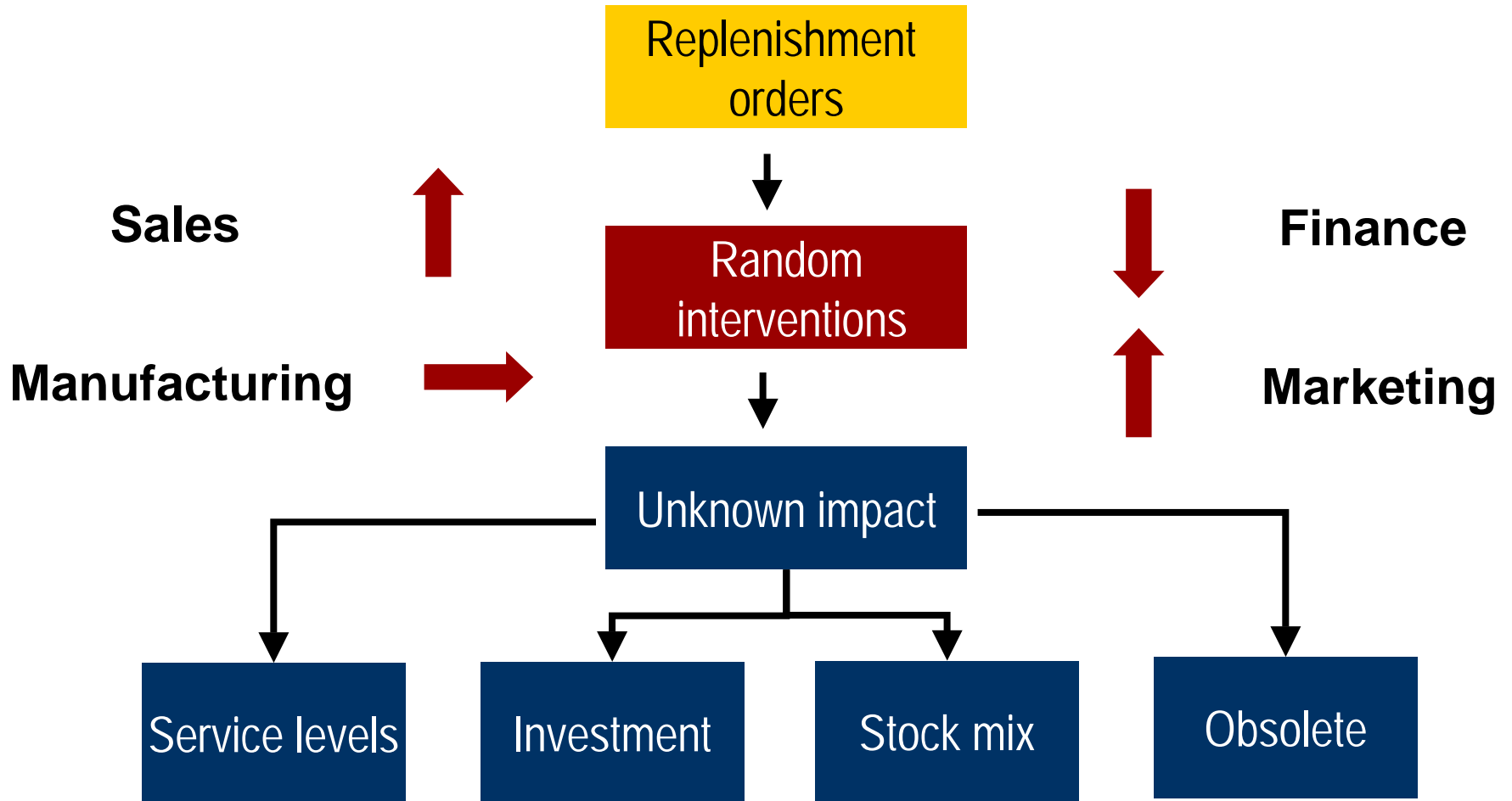
- **Principles**
- Framework
- Techniques
- Infrastructure

The inventory management objective involves balancing service levels against investment.

**Principles**  
Framework  
Techniques  
Infrastructure

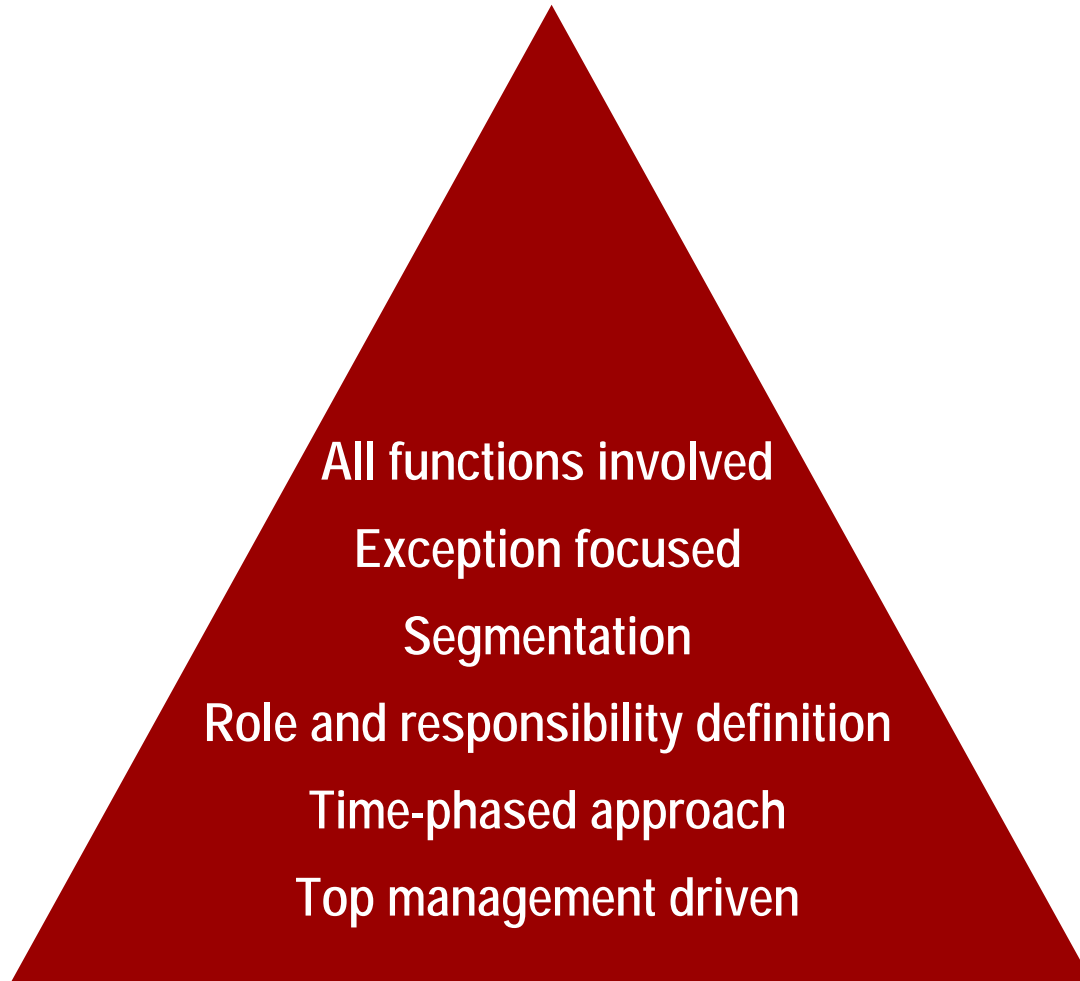


Inventory management approaches tend to be reactive.



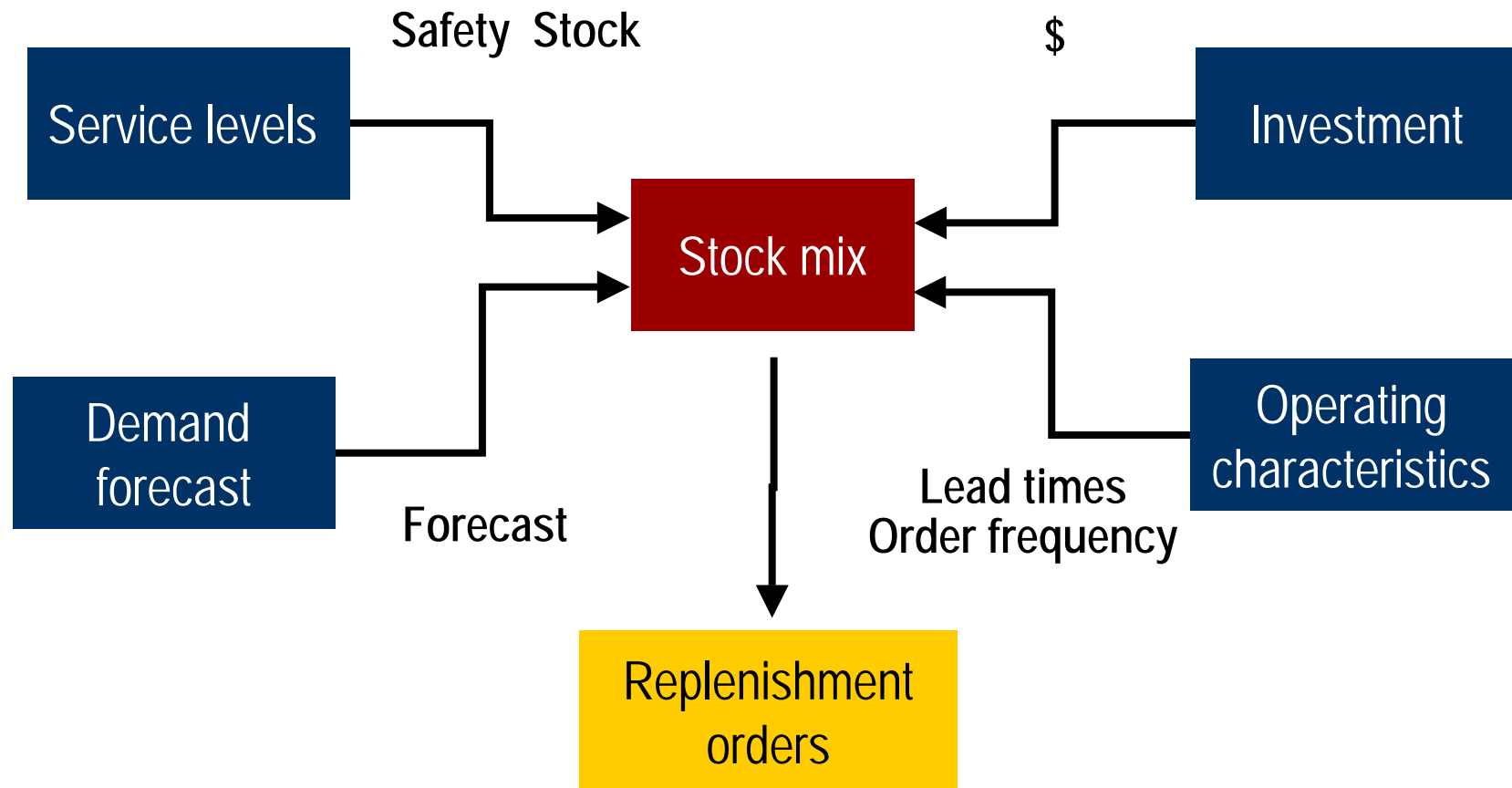
# Inventory management principles

Principles  
Framework  
Techniques  
Infrastructure



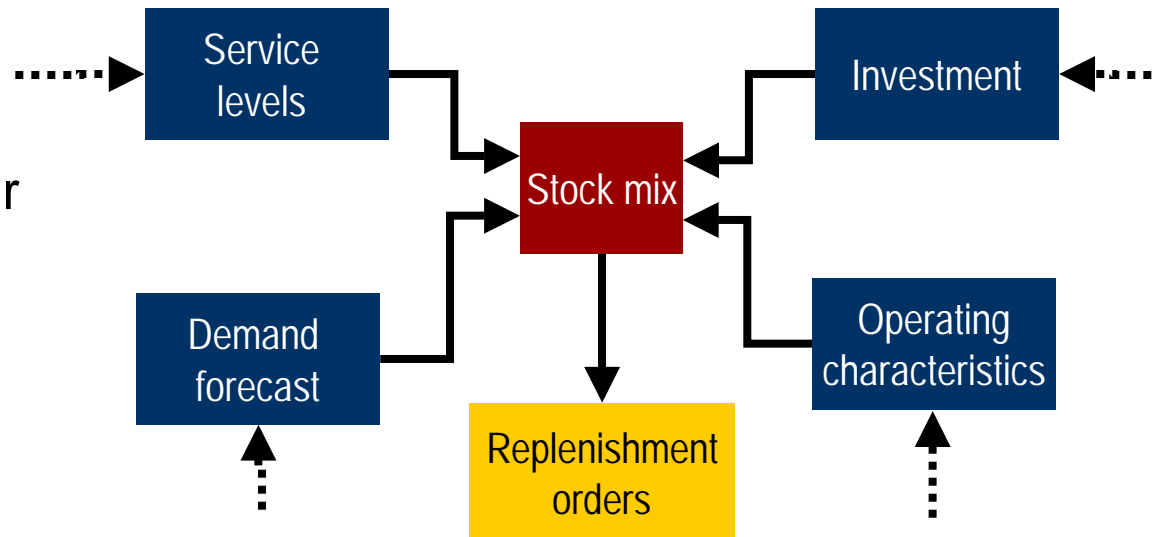
- Principles
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Proactive inventory management offers a means to optimise the mix between service and investment.



Emphasis needs to be given to managing the most important line items.

- Definition
- Management decisions
- Convert to cover
- Focus on important items



- Related to service levels
- Decide on acceptable range

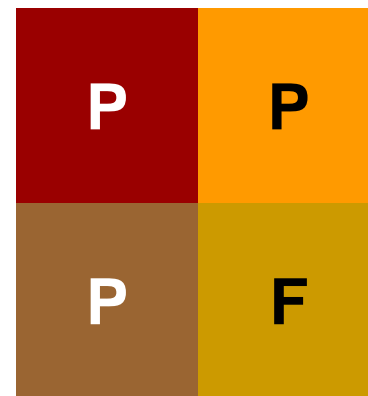
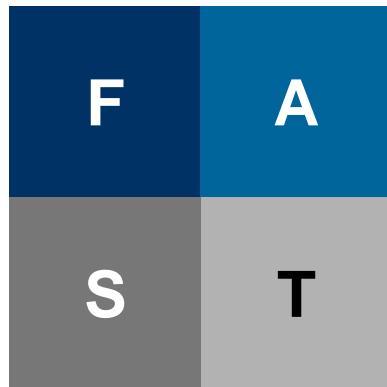
- Not the budget or sales target
- Based on 'clean' demand
- Incorporate market trends, intelligence
- Allocate specific responsibility
- Monitor forecasting accuracy
- Monitor performance

- Monitor and manage
- Supplier, WIP, order processing and distribution
- Actual values

- Principles
- Framework
- **Techniques**
- Infrastructure

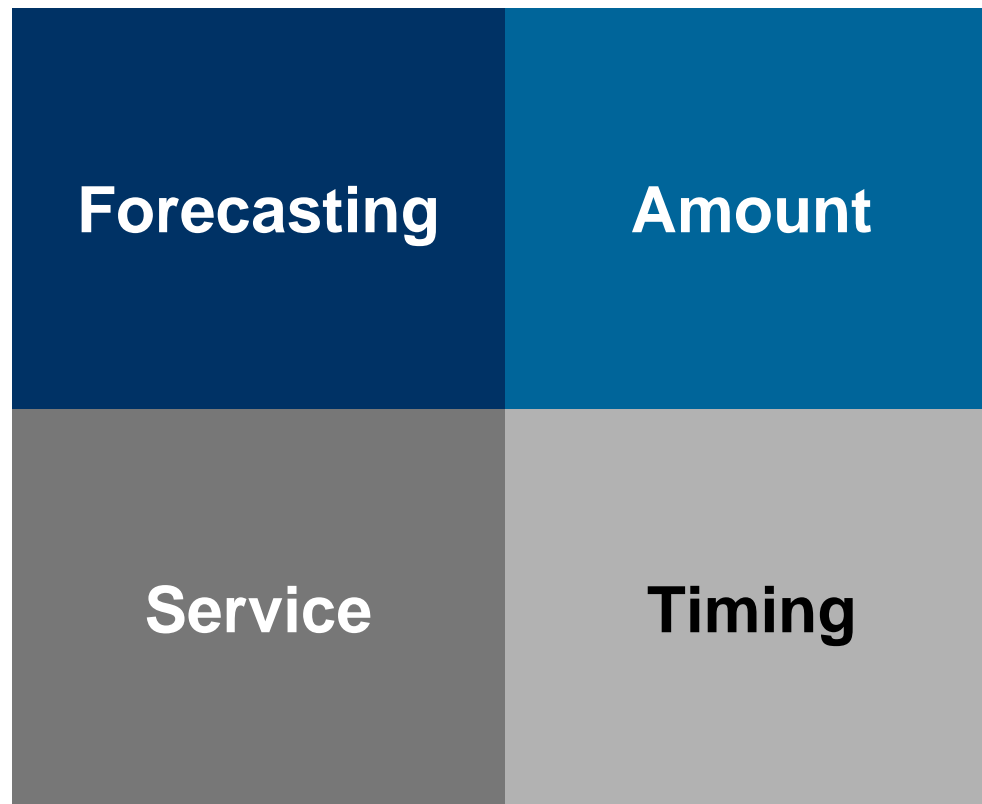
Knowledge of inventory management is essential.  
So too is appropriate support.

Principles  
Framework  
**Techniques**  
Infrastructure

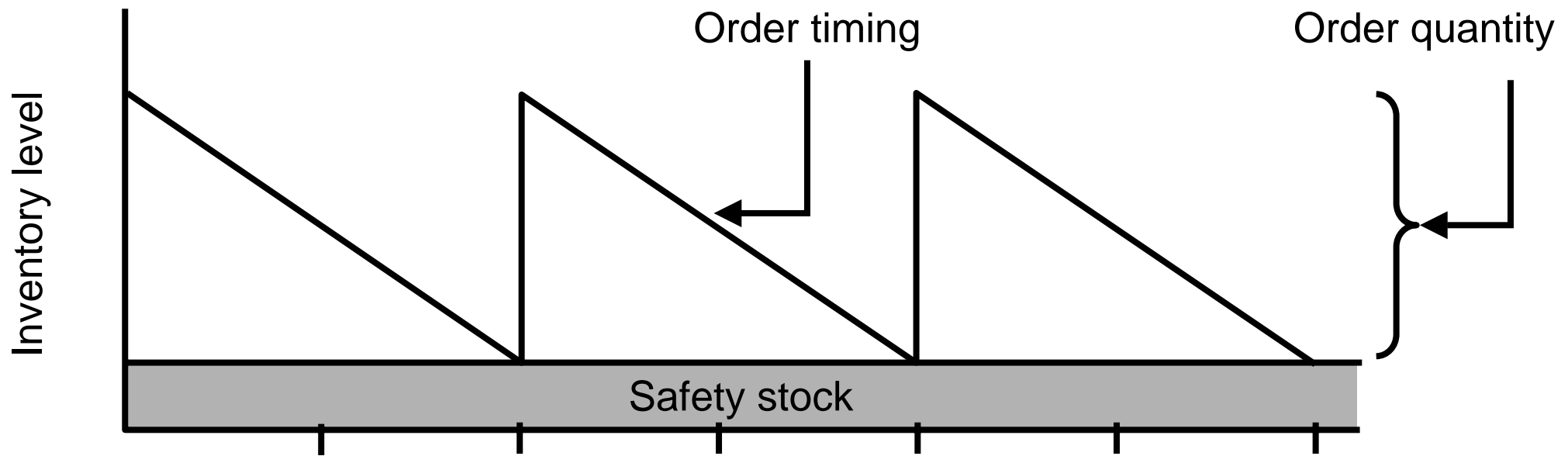


Inventory management consists of determining future requirements then establishing how these requirements are to be satisfied.

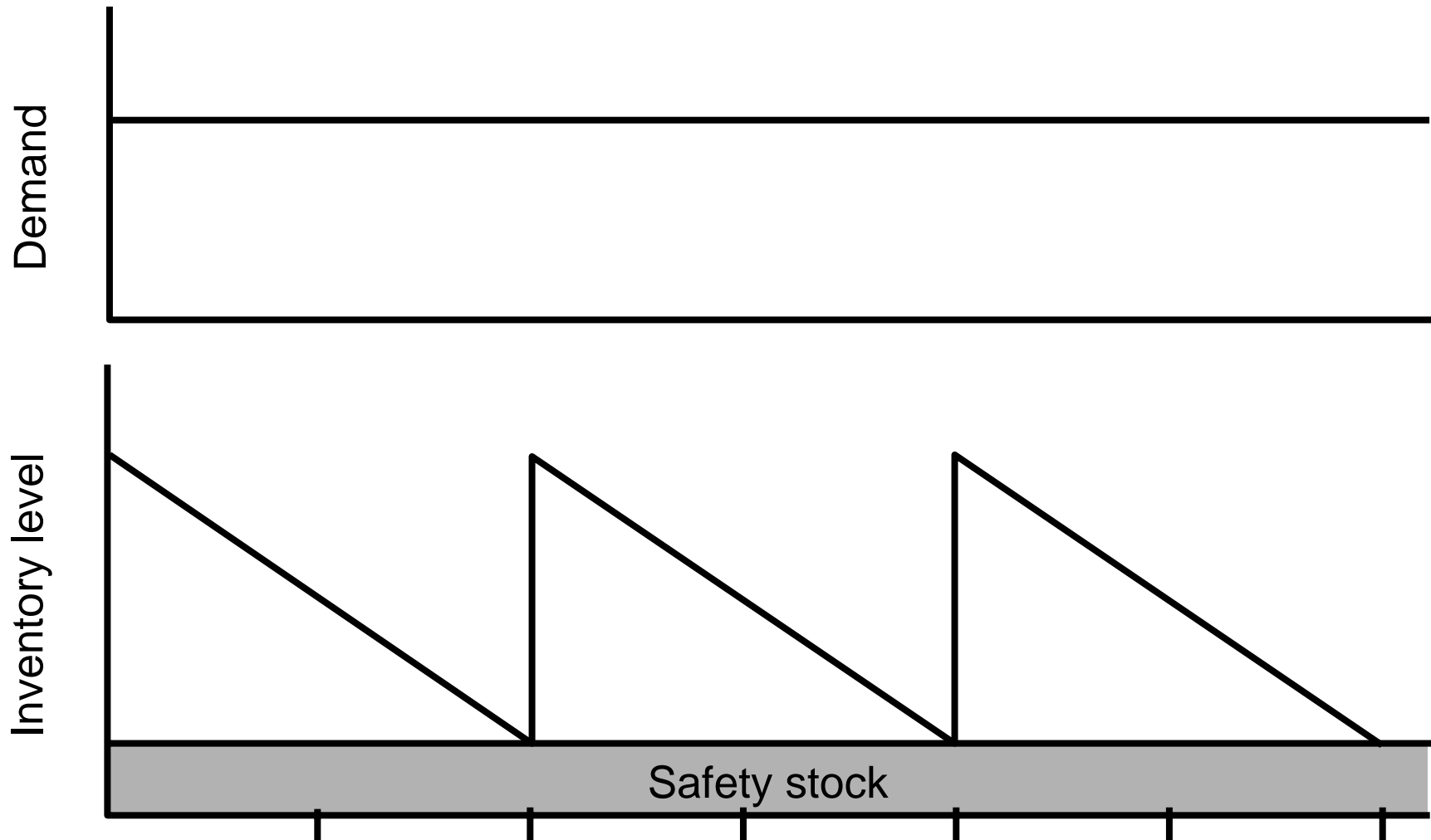
Principles  
Framework  
**Techniques**  
Infrastructure



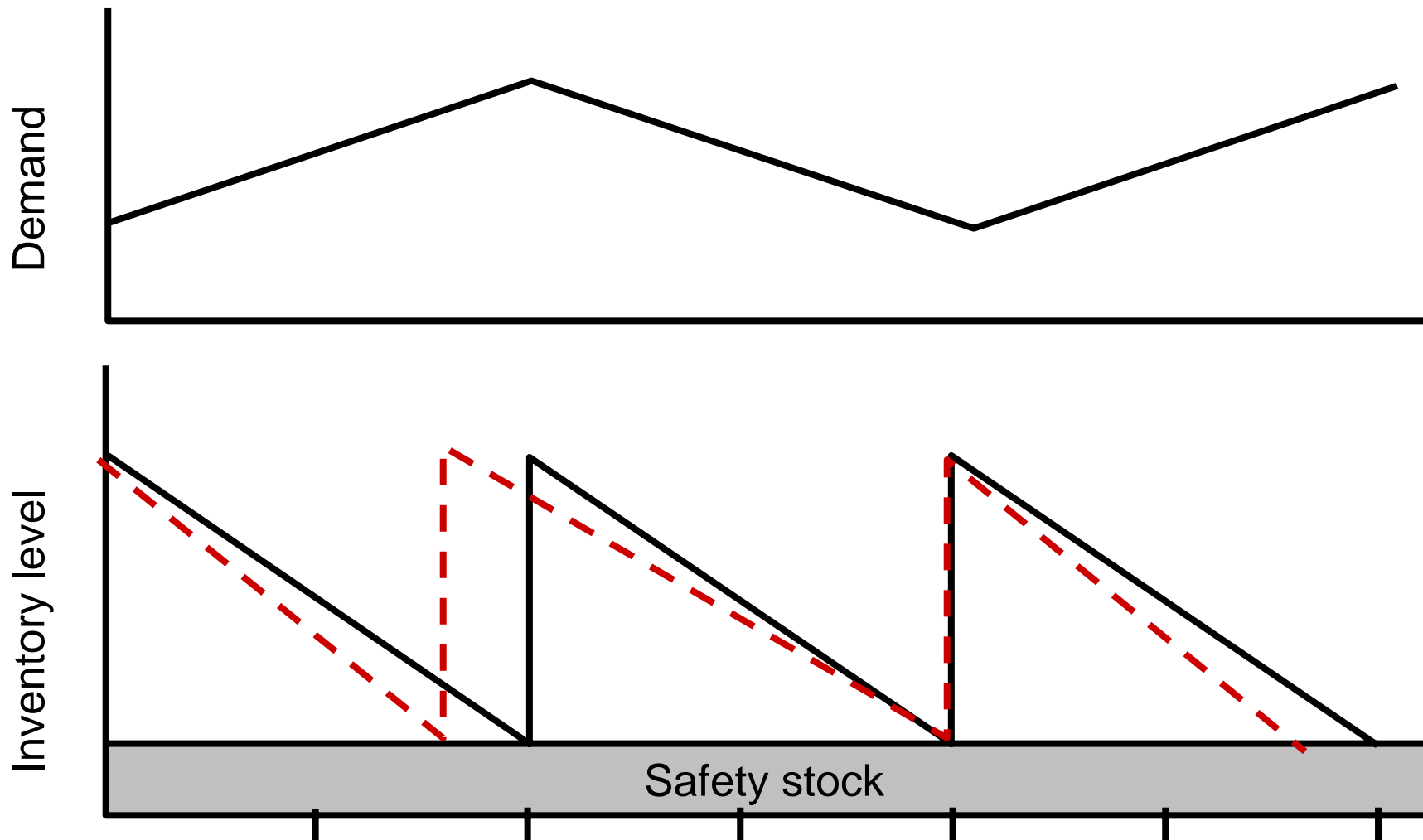
# Inventory management terminology



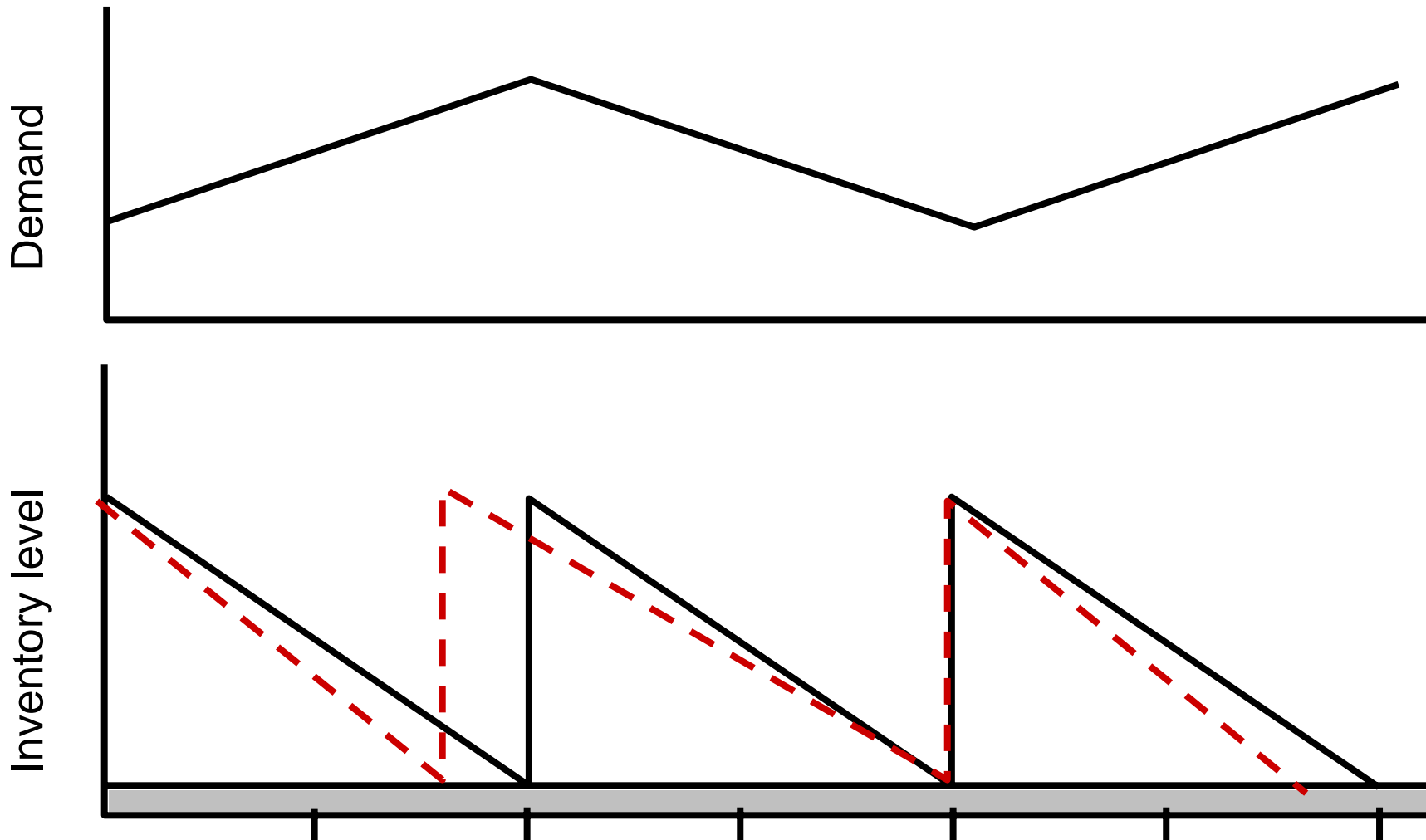
When demand is steady, inventory management is relatively easy.



Through the use of forecasting, future lead time demands may be used to adjust replenishment timing.



The more accurate the forecast, the less safety stock required.  
Less safety stock means reduced inventory.



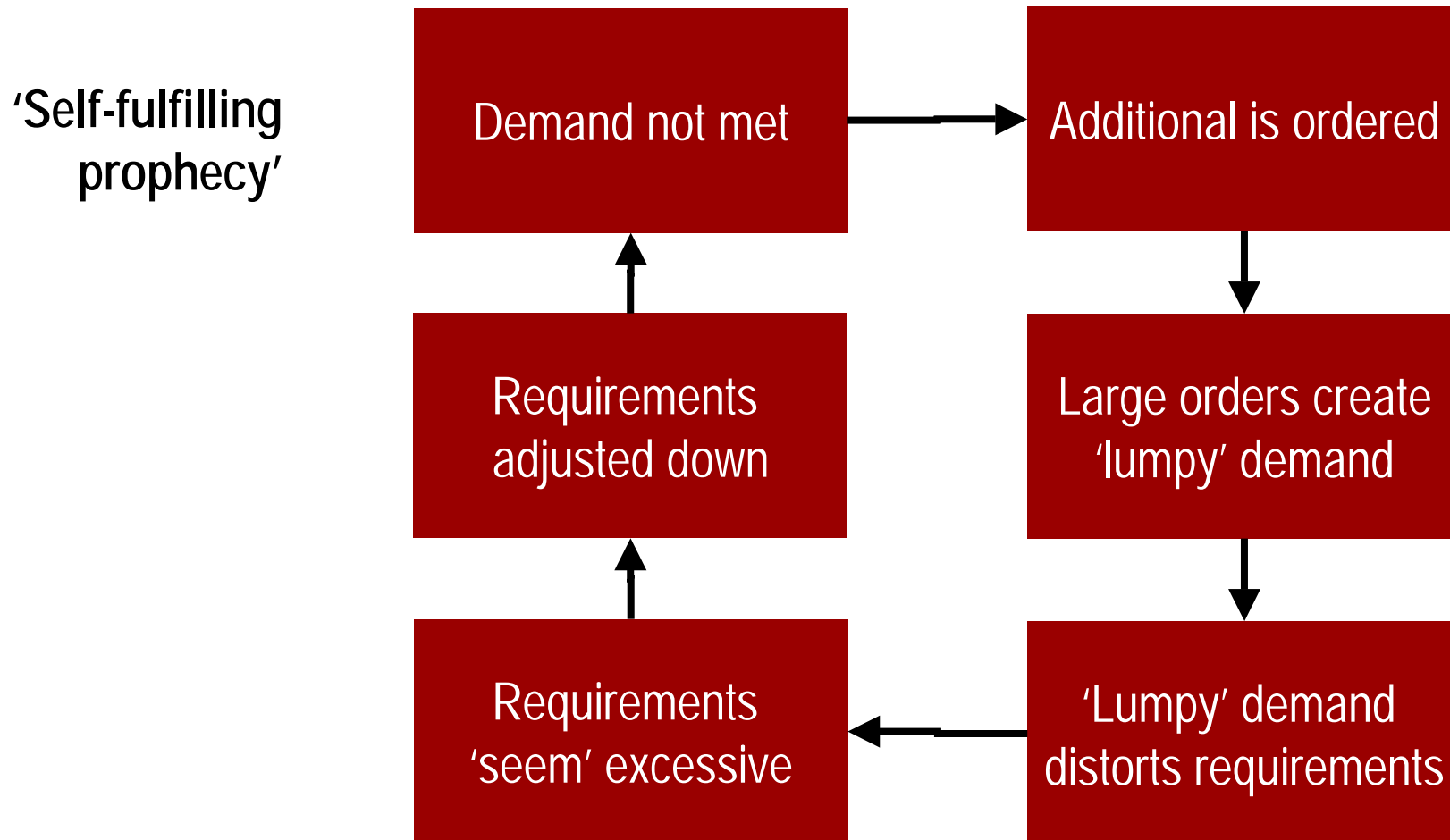
Most of the inventory management techniques are over 20 years old. They are still valid if applied appropriately.

- Forecasting
  - Fast moving
    - Basic – exponential smoothing ( before 1960s)
    - Advanced forecasting - Box-Jenkins, Brown (1960s)
  - Slow moving
    - Probabilistic techniques - Poisson, Binomial (before 1950s)
    - Slow moving inventory forecasting – Croston (1970s)
- Amount - order quantity techniques (before 1920)
- Safety stock determination approaches (1960s)
- Timing - replenishment
  - Time-phased (1970s)
  - Reorder point (ROP) and reorder quantity (ROQ) (1960s)

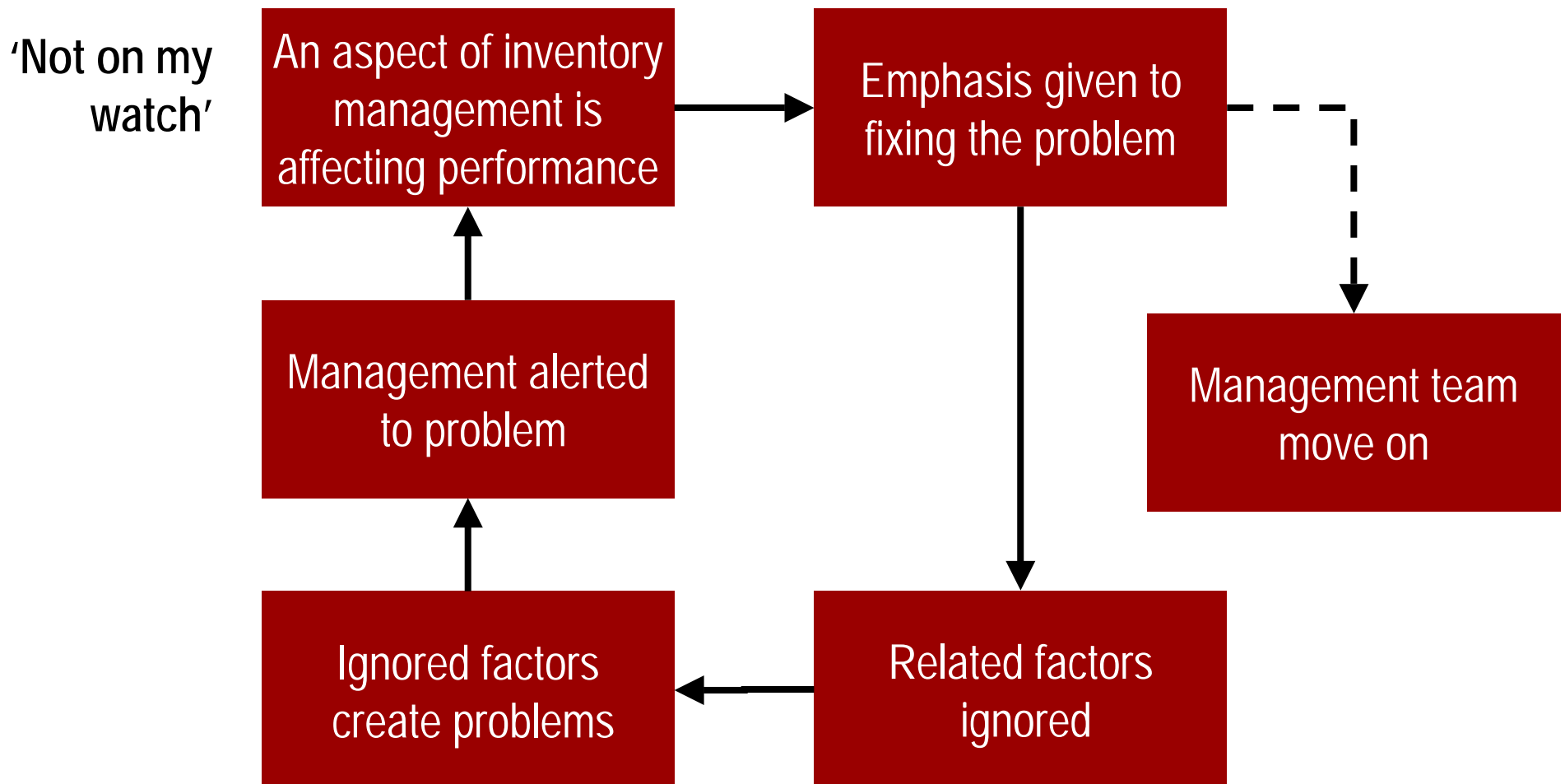
There is an aversion to incorporating established inventory management techniques.

- Computing limitations
  - Systems were initially designed around computing constraints
  - Systems have not been upgraded as constraints have been removed
  - Cultures have grown around the old systems
  
- Human nature
  - Motivation around avoiding stock outs – emphasis not on managing risk or maximising profit
  - Not all inventory managers may be willing to embrace the best techniques
  - ‘Self-fulfilling prophecy’ – a belief that change will not delivery means that it does not
  - ‘Not on my watch’ – results needed immediately

Disbelief in the 'system' to meet requirements may result in the system not meeting requirements.



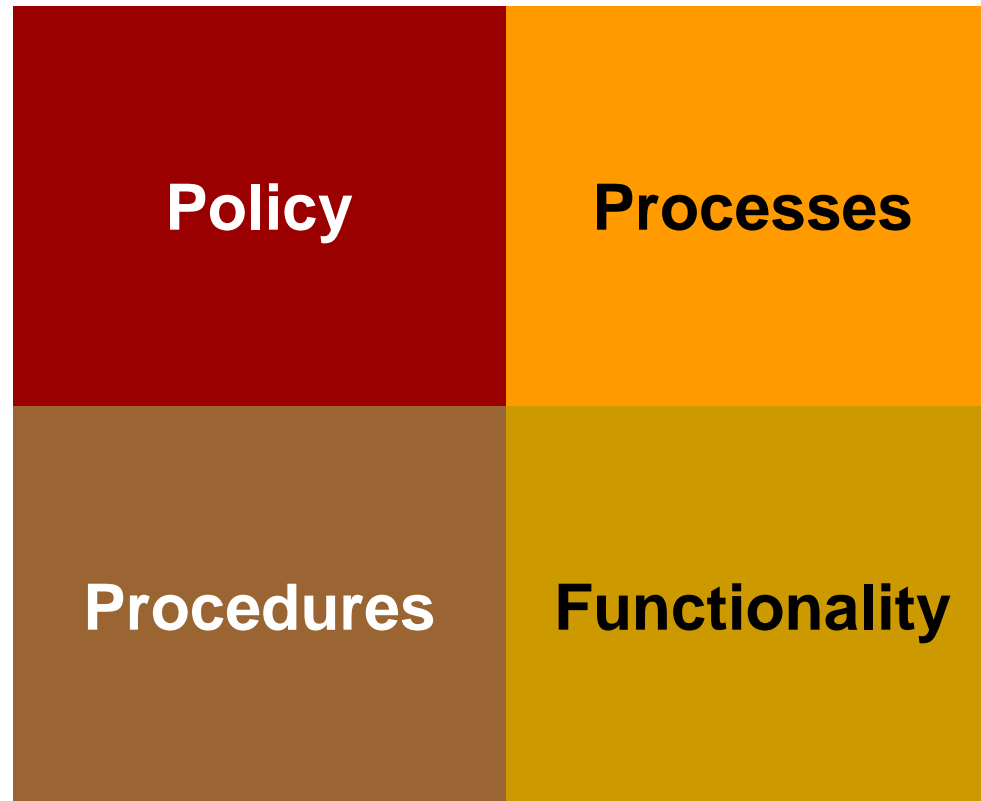
A desire for instant gratification makes sustaining a comprehensive inventory management approach difficult.



- Principles
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- **Infrastructure**

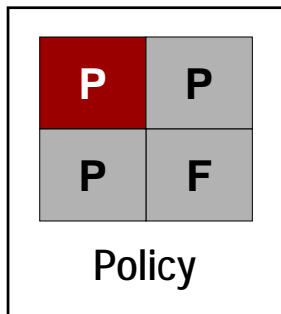
Optimised inventory management requires a 'complete' solution.

Principles  
Framework  
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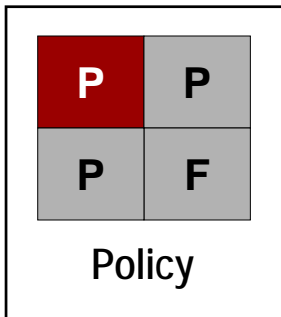
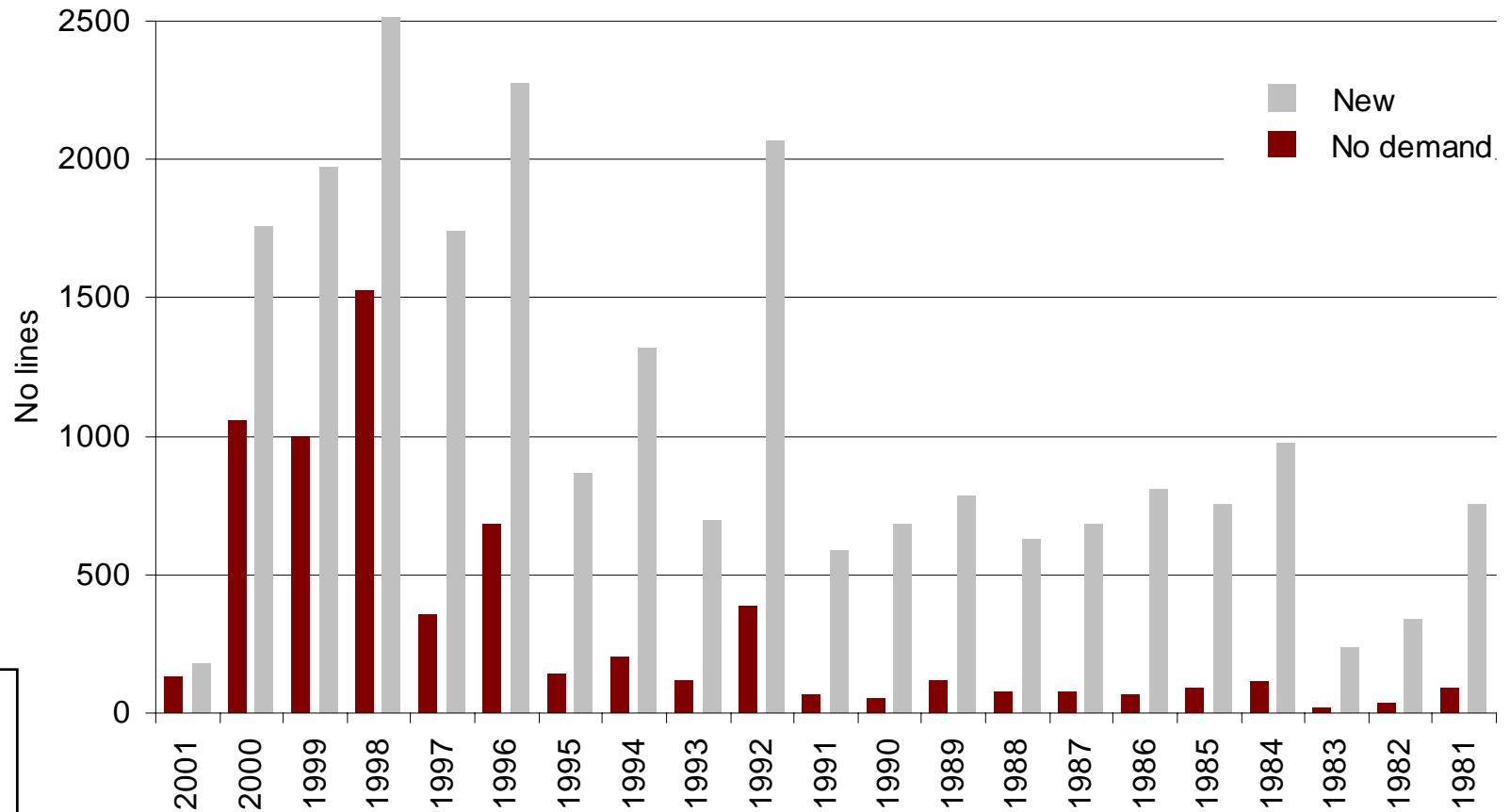
## Policy details management's requirements.

- Introduction of new items
- Disposal of obsolete items
- Segmentation and segment approaches
- Review requirements
- Performance indicators
- Performance expectations

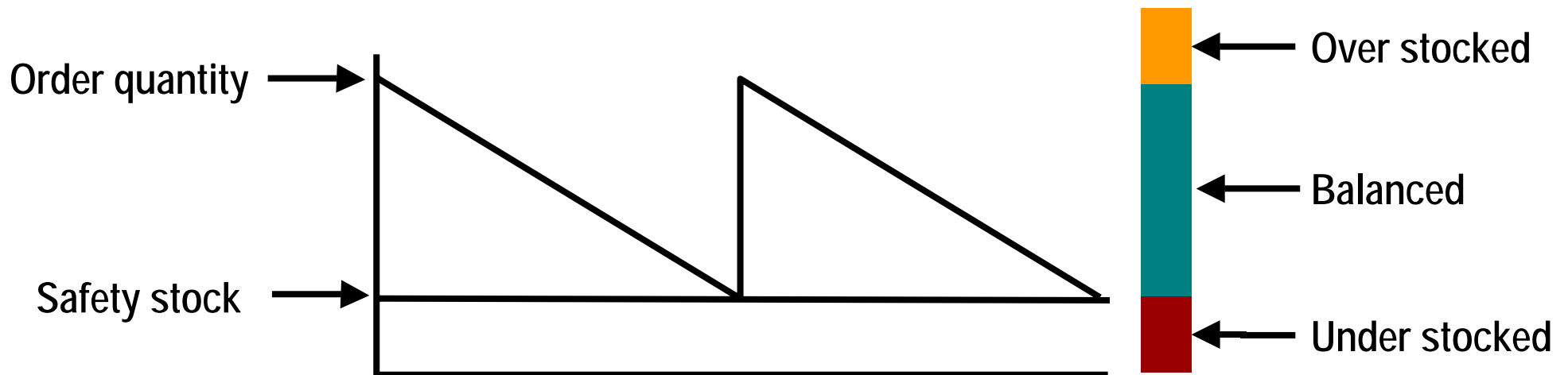


An absence of guidelines resulted in inappropriate items being introduced into the inventory.

Principles  
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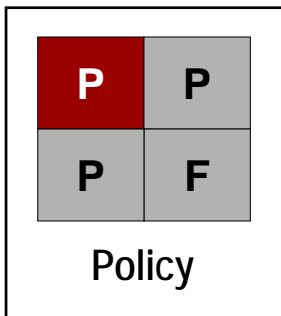


An inventory position approach allows performance to be aligned to the organisation.



Inventory position = available stock - required stock

$$IP = (SOH + DI) - (F + BO + SS)$$



IP: inventory position

DI: dues in

BO: back orders

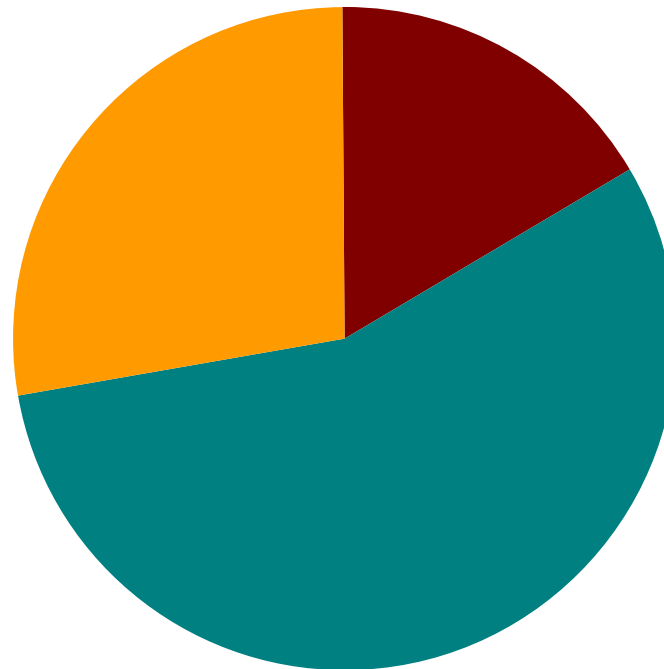
SOH: stock on hand

F: forecast demand

SS: safety stock

An inventory position based performance measurement approach allows effort to be maximised.

■ Under ■ Balanced ■ Over

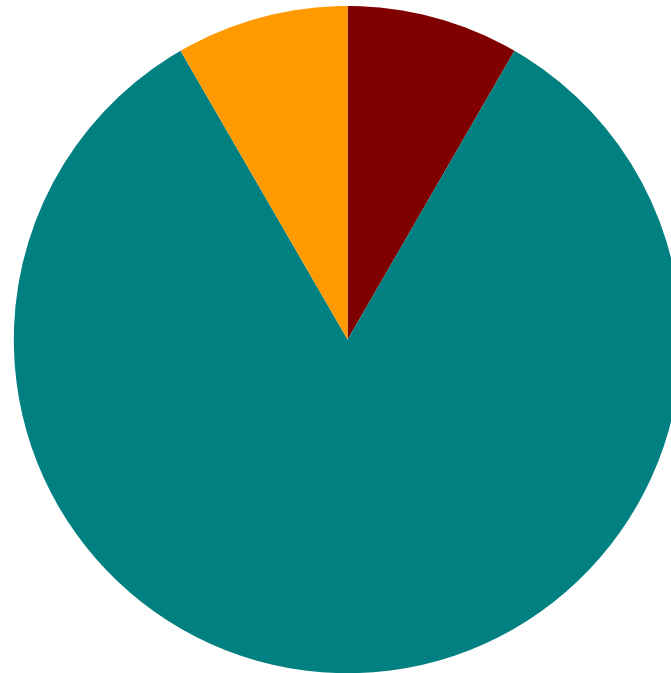


P	P
P	F

Policy

The more balanced stock, the better the inventory performance.

■ Under ■ Balanced ■ Over

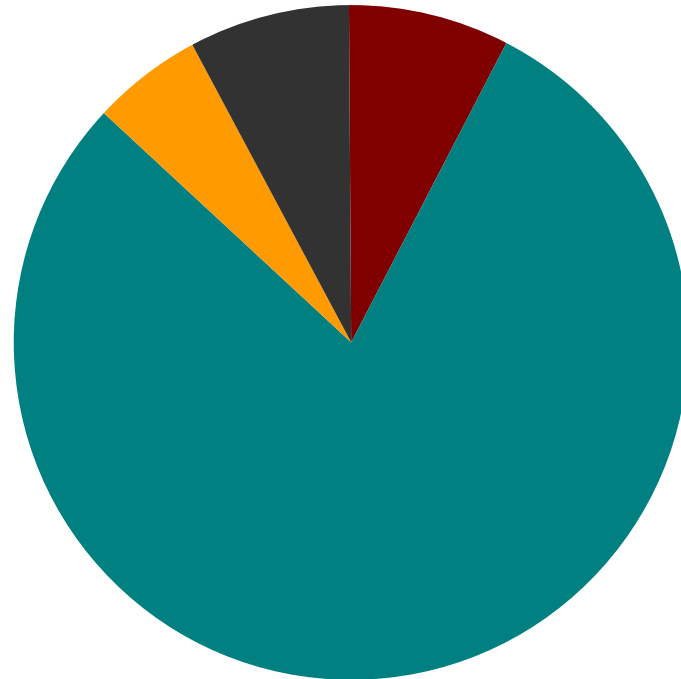


P	P
P	F

Policy

The stock position approach can be expanded to encompass all inventory categories.

■ Under ■ Balanced ■ Obsolete ■ Over



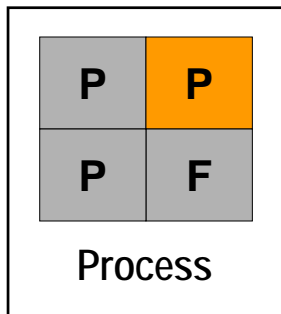
P	P
P	F

Policy

Process information ensures a coordinated approach to inventory management.

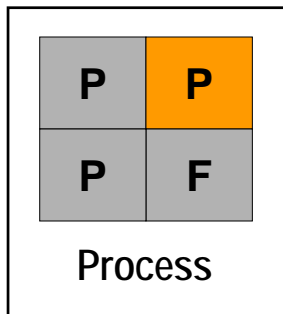
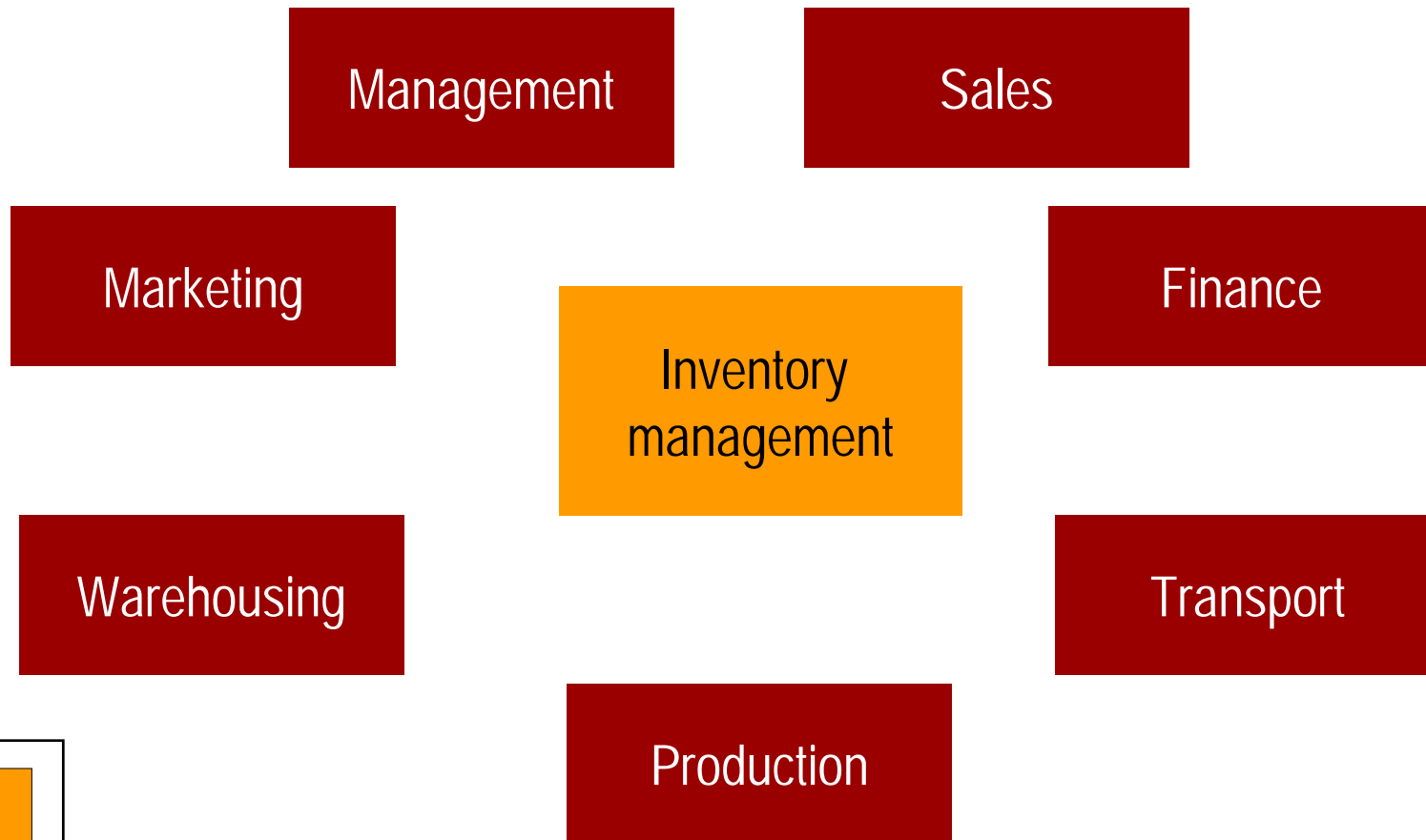
Principles  
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- Forecasting and demand planning
- Roles and responsibilities
- Time frames – when the activities are to be completed



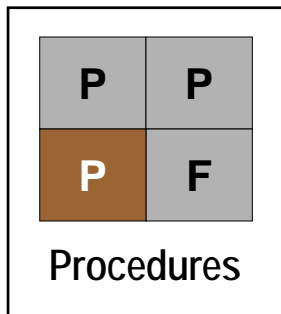
Irrespective of the organisational arrangements, it is necessary to coordinate activities.

Principles  
Framework  
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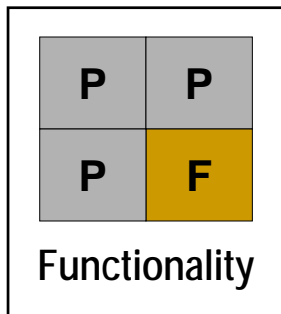
Procedural information is necessary to ensure that activities are performed in accordance with guidance.

- Information interpretation and application
- System use
  - Variable meanings
  - Event sequencing
- Parameter calculation
- Activity/approach rationale

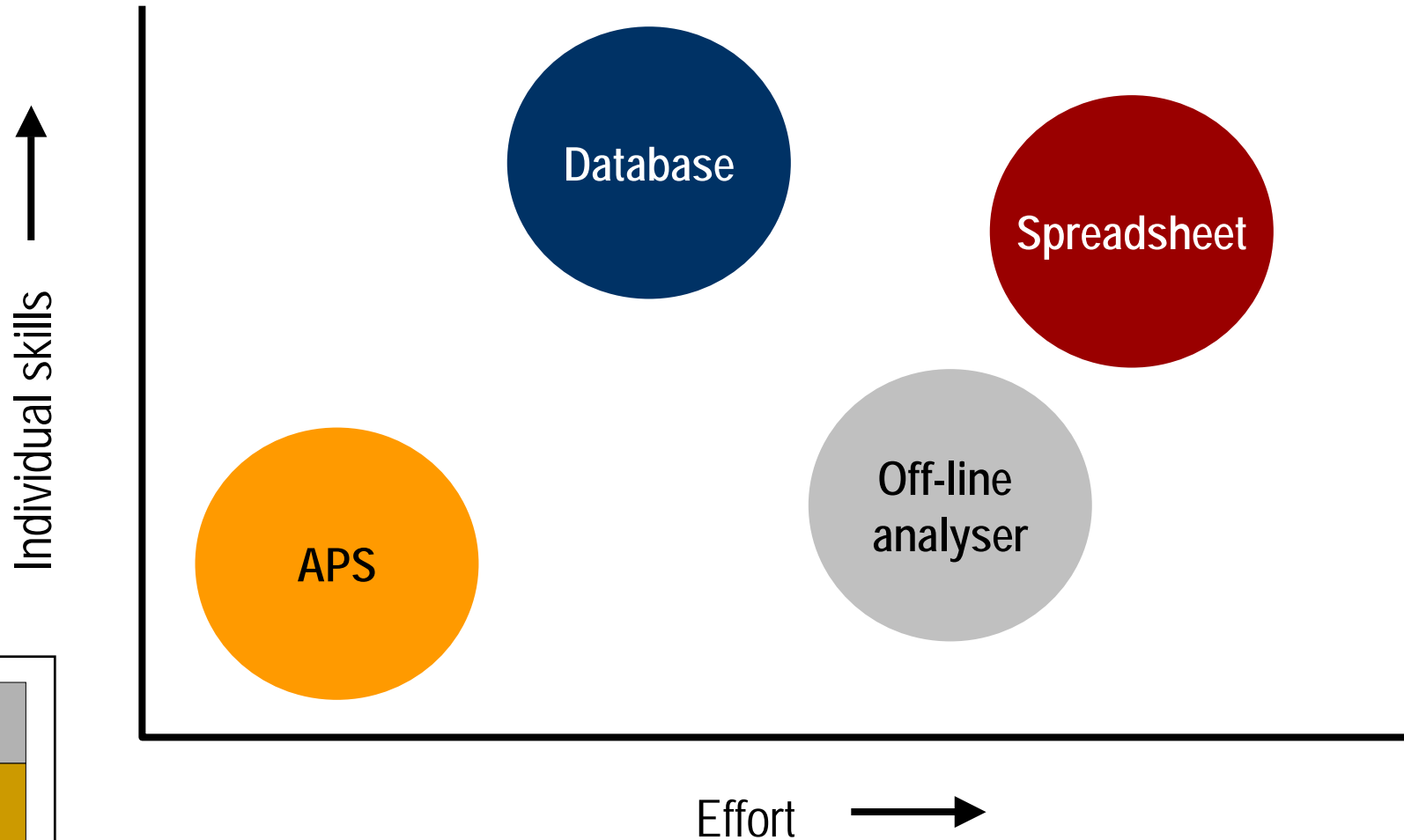


Functionality needs to be aligned to the business.

- Return on investment
- Emphasis on a coordinated solution
- Business profile
- Allows for constraints
  - Data integrity
  - Product and its life cycle



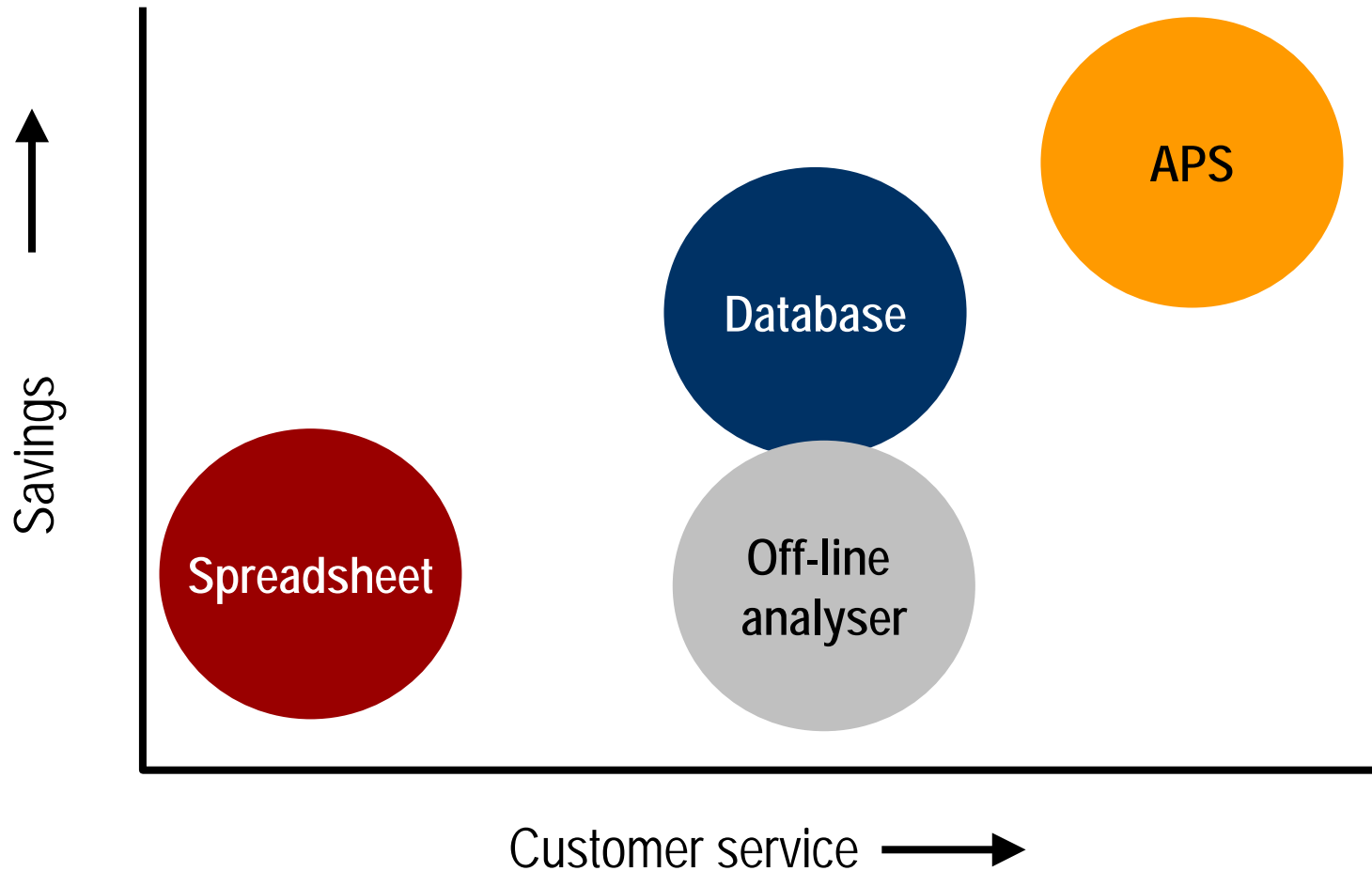
Advanced systems require less skill and effort to achieve an optimal outcome.



P	P
P	F

Functionality

Typically, more advanced systems will deliver higher service levels at reduced cost.



P	P
P	F

Functionality

The requirements for inventory management are not new. Ensuring your business provides support for the activities is essential.

F	A
S	T

- Inventory management involves relatively simple activities

P	P
P	F

- Efficient and effective inventory management requires a complete solution



# Questions

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## Inventory levels increase in line with uncertainty

Are typical inventory management issues addressed and communicated in your business :

- Top management objectives and policies
- Service levels
- Roles and responsibilities
  - Demand forecasting
  - Stock levels
  - Parameters
- Routine processes and procedures
- Performance measures