

Course of «Operations and audit quality»  
Master degree in «Fashion, art and food management»  
Parthenope University of Naples

PART Three: Deliver

# Planning and control systems

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# A general model of operations management

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**PART ONE: directing the operation**

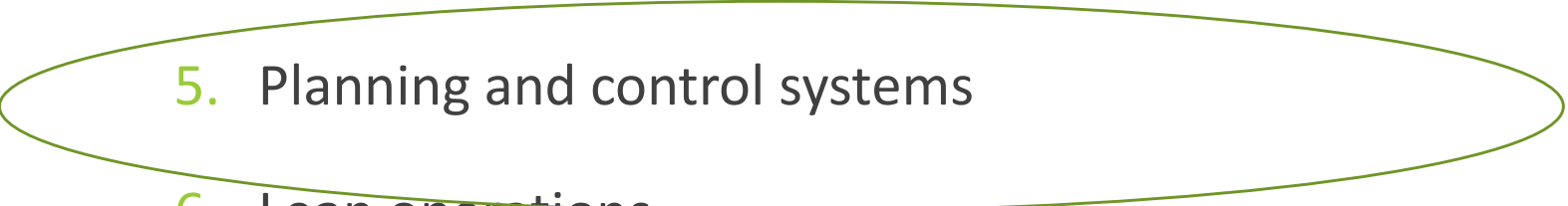
**PART TWO: designing the operation**

**PART THREE: deliver**

**PART FOUR: development**


# PART THREE: deliver

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1. Planning and control
  2. Capacity management
  3. Supply chain management
  4. Inventory management
  5. Planning and control systems
  6. Lean operations
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# Planning and control (Agenda)

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- What are planning and control systems?
  - What is enterprise resource planning, and how did it develop into the most common planning and control system?
  - How should planning and control systems be implemented?
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# What are planning and control systems?

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## *Remember!!!*

Formally, planning determines what is intended to happen at some time in the future...

...while control is the process of coping when things do not happen as intended

Control makes the adjustments that help the operation to achieve the objectives that the plan has set, even when the assumptions on which the plan was based do not hold true

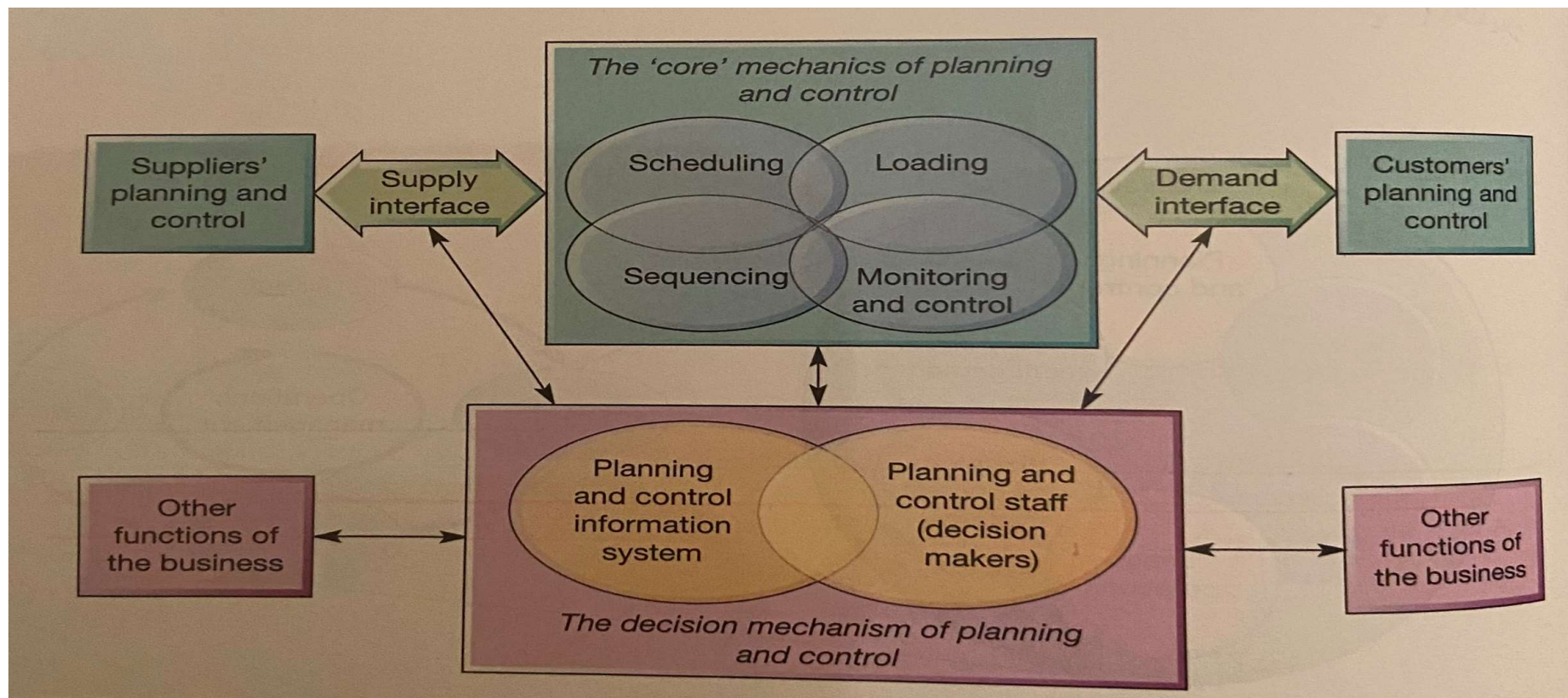
# Planning and control systems

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- Planning and control systems are the information processing, decision support and execution mechanism that support the operations planning and control activity
- Planning and control systems tend to have a number of common elements:
  1. customer interface that forms a two-way information link between the operation's activities and its customers;
  2. a supply interface that does the same things for the operation's suppliers;
  3. a set of overlapping «core» mechanisms that perform basic tasks such as loading, sequencing, scheduling, and monitoring and control;
  4. a decision mechanism involving both operations staff and information systems that makes or confirms planning and control decisions.

**It is important that all these elements are effective in their own right  
and work together!**

Planning and control systems interface with the internal planning and control mechanism, customers, suppliers and the other functions of the business



# How does the system interface with customers?

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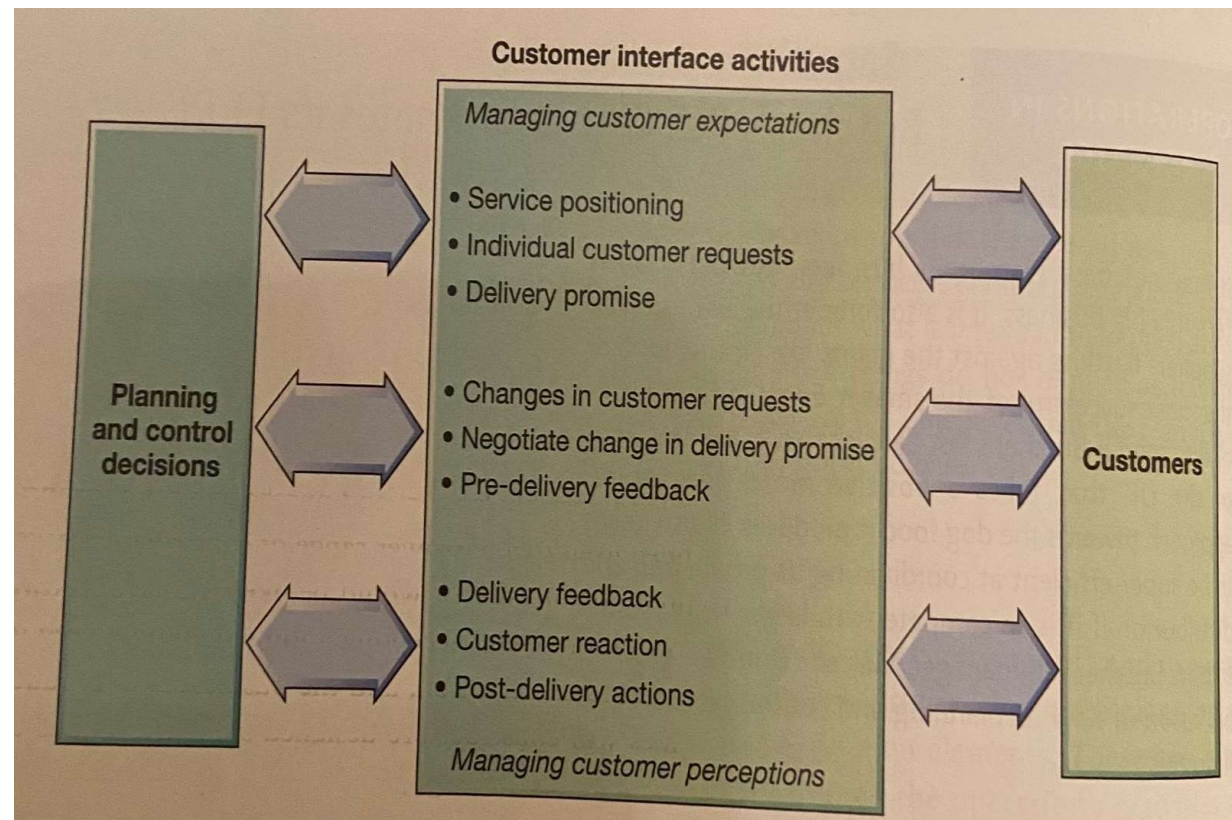
- This is a set of activities that interface with both individual customers and the market more broadly
  - Depending on the business, these activities may include: customer negotiation, order entry, demand forecasting, order promising, updating customers, keeping customer histories, post-delivery customer service and physical distribution.
1. Customer interface defines the customer experience
  2. The customer interface should reflect the operation's objectives



# Customer interface defines the customer experience


**Operations principle:** customers' perceptions of an operation will partially be shaped by the customer interface of its planning and control system

- Customer interface defines the nature of the customer experience.
- It is the public factor of the operation (the «line of visibility»)
- It need to be managed like any other «customer processing» process, where the quality of the service, as the customer sees it, is defined by the gap between customers' expectations and their perceptions of the service they receive
- As is usual with such customer experiences, the managing of customer expectation is particularly in the early stages of the experience



# The customer interface should reflect the operation's objectives

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- In managing a customer's experience, the customer interface element of the planning and control system is, in effect, operationalizing the business's operations objectives
  - It may have to prioritize one type of customer over another
  - It may have to encourage some types of customer to transact business more than other types of customer
  - It will almost certainly have to trade off elements of customer service against the efficiency and utilization of the operations resources
  - This part of the planning and control systems cannot operate effectively without clear priorities derived from the operation's strategic objectives
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# The customer interface acts as a trigger function

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- Acceptance of an order should prompt the customer interface to trigger the operation's processes
- What is triggered depend on the nature of the business

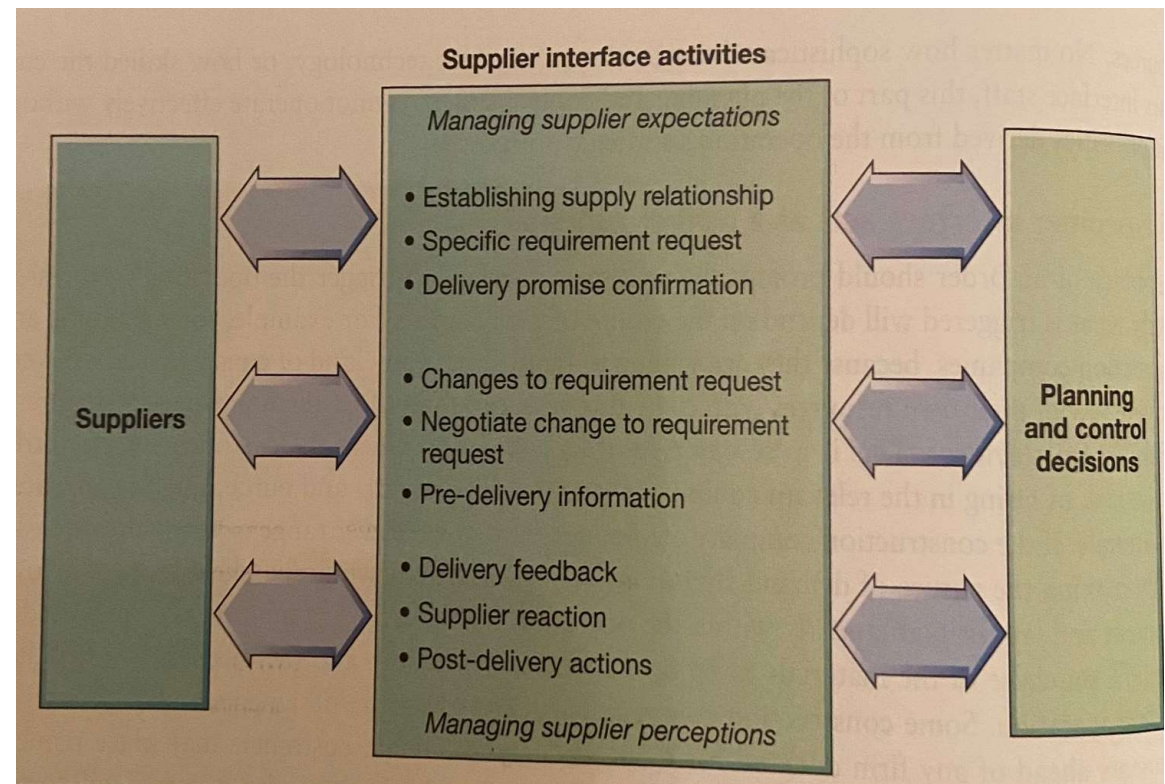
## Example:

*«Some building and construction companies, because they are willing to build almost any kind of construction, will keep relatively few of their resources within the business, but rather hire them in when the nature of the job become evident. This is the «resource-to-order» operation where the customer interface triggers the task of hiring in the relevant equipment and purchasing the appropriate materials»*

# How does the system interface with suppliers?

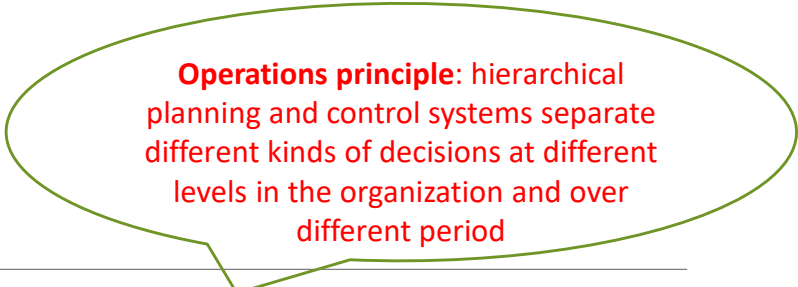
**Operations principle:** an operation's planning and control system can enhance or inhibit the ability of its suppliers to support delivery effectiveness

- The supplier interface provides the link between the activities of the operation itself and those of its suppliers
- The timing and the level of activities within the operation or process will have implications for the supply of products and services to the operation
- Suppliers need to be informed so that they can make products and services available when needed



# Hierarchical planning and control

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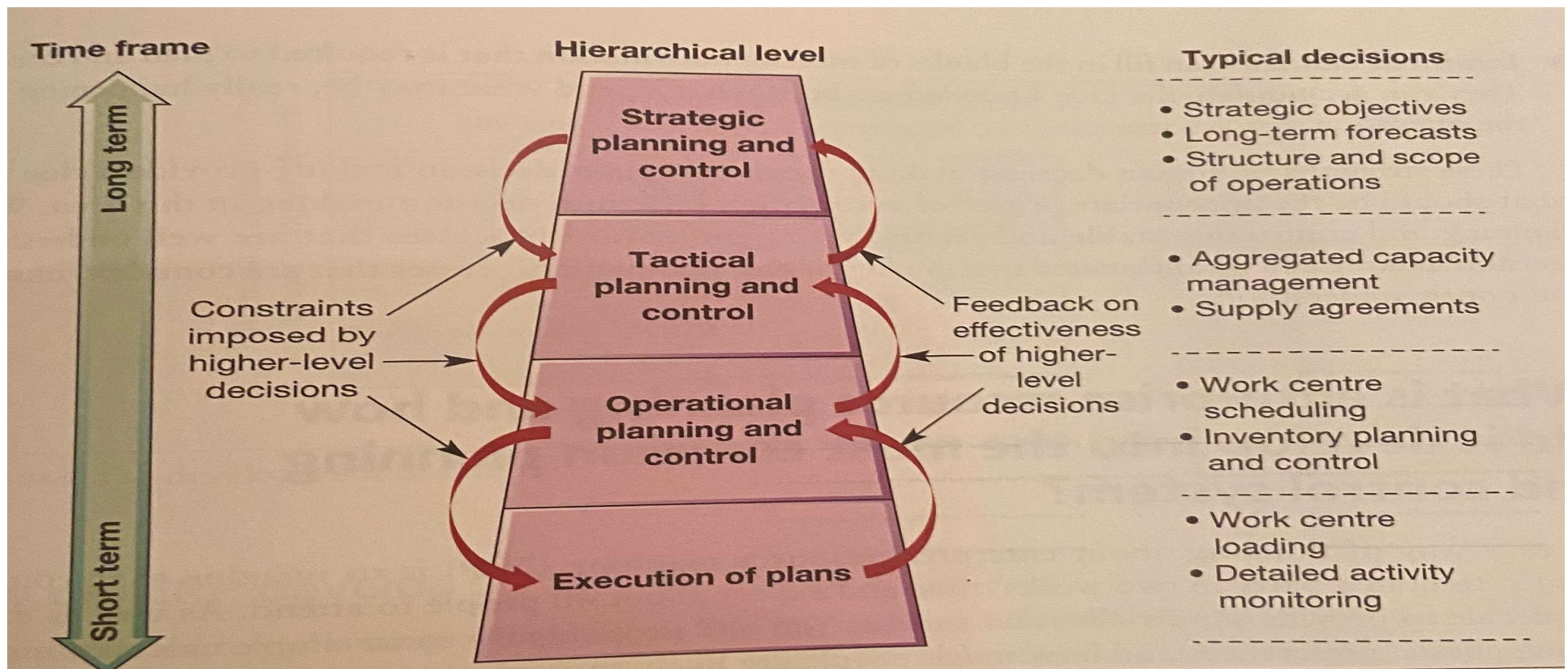
**Operations principle:** hierarchical planning and control systems separate different kinds of decisions at different levels in the organization and over different period

- The «hierarchical approach» to operations planning tries to bring some order to the complexity by dividing up the many interrelated planning and control decisions into sub-problems
- Decisions at high level link with decisions at lower levels in an effective manner
- Decisions that are made at the higher level will of course impose some constraints in the lower-level decisions
- The execution of detailed decisions at the lower level will provide the necessary feed-back so the quality of higher-level decision making can be judged

In this way the «hierarchical approach» separates different kinds of decisions at different levels in the organization and over different time periods




# The general structure of hierarchical production planning and control

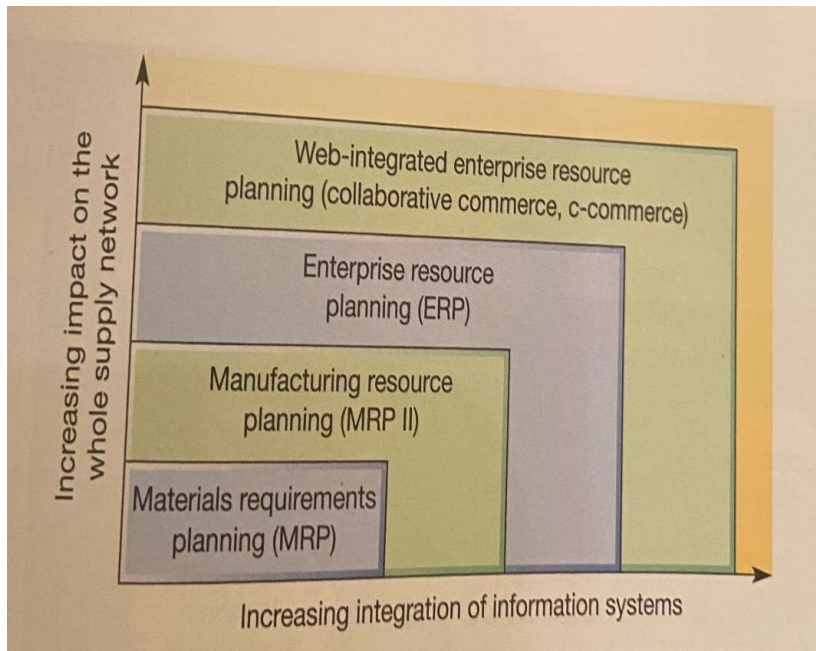


# Enterprise Resource Planning (ERP)

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- ERP is an enterprise-wide information system that integrates all the information from many functions, which is needed for planning and controlling operation activities. This integration around a common database allows for transparency
  - It often requires very considerable investment in the software itself, as well as its implementation. More significantly, it often requires a company's process to be changed to bring them in line with the assumptions built into the ERP software
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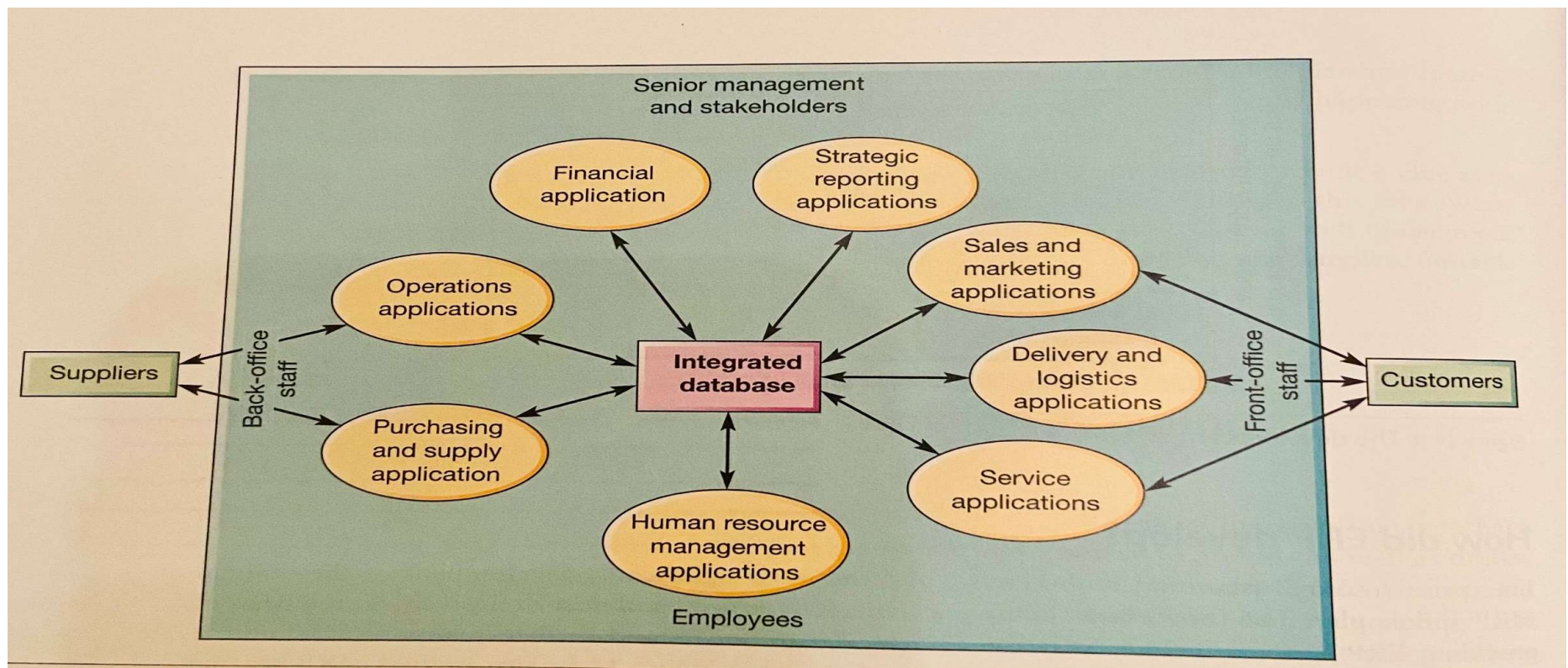
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- ERP can be seen as the latest development from the original planning and control approach known as Materials Requirements Planning (MRP)
- Although ERP is becoming increasingly competent at the integration of internal systems and databases, there is the even more significant potential of integration with other organization's ERP

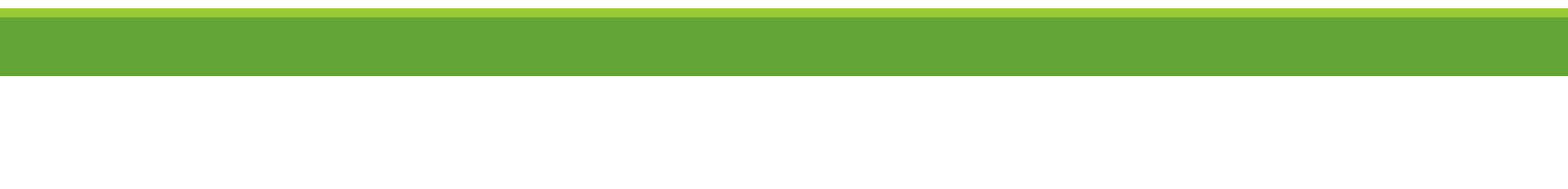


# ERP integrates information from all parts of the organization



# How should planning and control systems be implemented?

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- Because planning and control systems are designed to address problems of information fragmentation, implementation will be complex and cross organizational boundaries
  - There are a number of Critical Success Factors (CSFs) that the organization must «get right» in order for the ERP system to work effectively. Some of these are broad, organization-wide, or strategic, factors. Others more project specific, or tactical, factors.
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Case study

## «The life and times of a chicken and salad sandwich» Part 2

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[Case studies\Lesson 12- The life and times of a chicken salad sandwich \(Part 2\).pdf](#)