

PERENCANAAN & PENGENDALIAN PRODUKSI

TIN 4113

Kontrak Perkuliahan



Pertemuan & Materi

- ✓ [RPKPS](#)



Penilaian

- ✓ Tugas, short quiz
- ✓ Quiz 1 & 2
- ✓ UAS



Referensi

- ✓ Smith, Spencer B. *Computer Based Production and Inventory Control*, Prentice-Hall, 1989.
- ✓ Vollman, et al. *Manufacturing Planning & Control System*, McGraw-Hill, 1997.
- ✓ Vollman, et al. *Manufacturing Planning & Control for Supply Chain Management*, McGraw-Hill, 2005.
- ✓ Tersine, Richard J. *Principle of Inventory and Materials Management*, 4th Edition, Prentice Hall, 1993.



Lain-lain

- ✓ Minimum kehadiran: 80%
- ✓ Tidak melakukan kecurangan

Course Outline

Materi (13 Pertemuan):

- Introduction to PPC / PPIC
- Demand forecasting
- Sales & Operations Planning
- MPS
- Independent demand inventory models
- MRP
- Introduction to ERP
- Review

Evaluasi (3 Pertemuan):

- Kuis 1
- Kuis 2
- Remidi

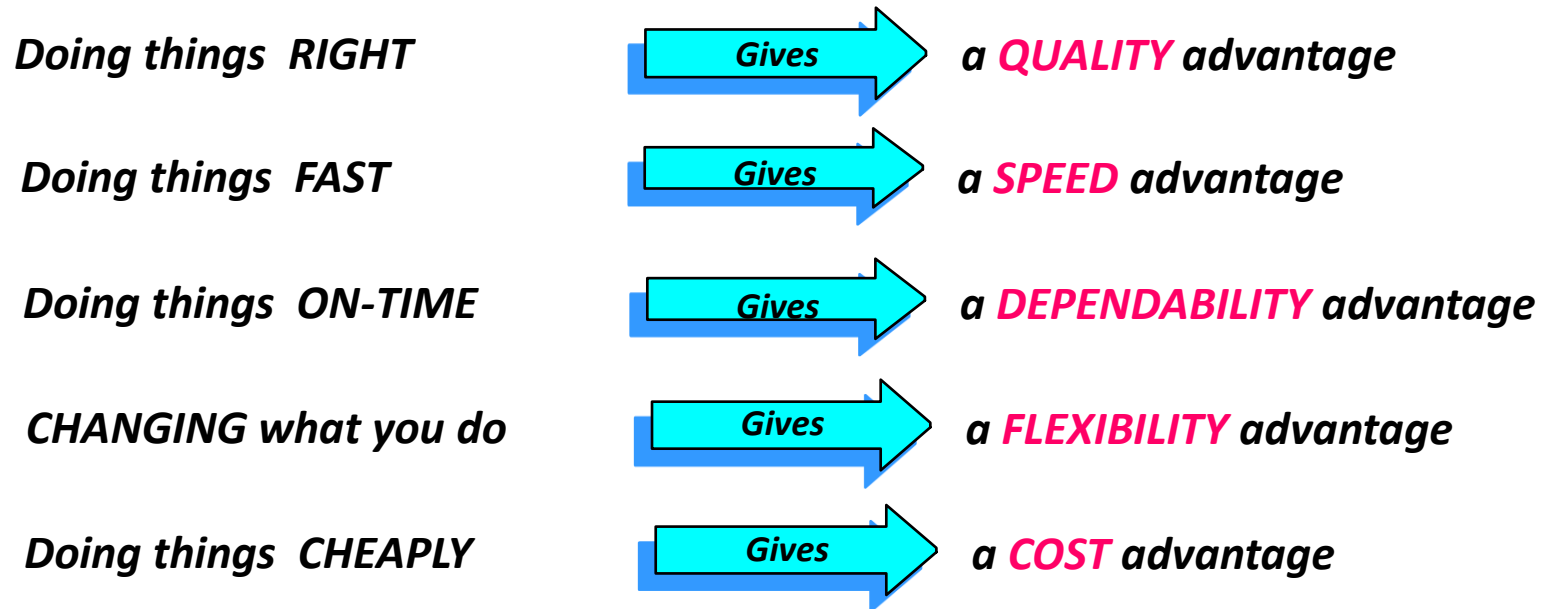
Pertemuan 1

- **Outline:**
 - Competitive Advantage of Manufacturing Industry
 - Product Positioning Strategy
 - Process Positioning Strategy
 - Definisi dan fungsi Perencanaan & Pengendalian Produksi
 - Struktur organisasi
- **Referensi:**
 - Smith, Spencer B. Computer Based Production and Inventory Control, Prentice-Hall, 1989.
 - Vollman, et al. Manufacturing Planning & Control System, McGraw-Hill, 1997.
 - Tersine, Richard J. Principle of Inventory and Materials Management, 4th Edition, Prentice Hall, 1993.
 - Pujawan (Professor of Supply Chain Engineering Department of Industrial Engineering – ITS). Course material: Introduction to Production Planning and Inventory Control.

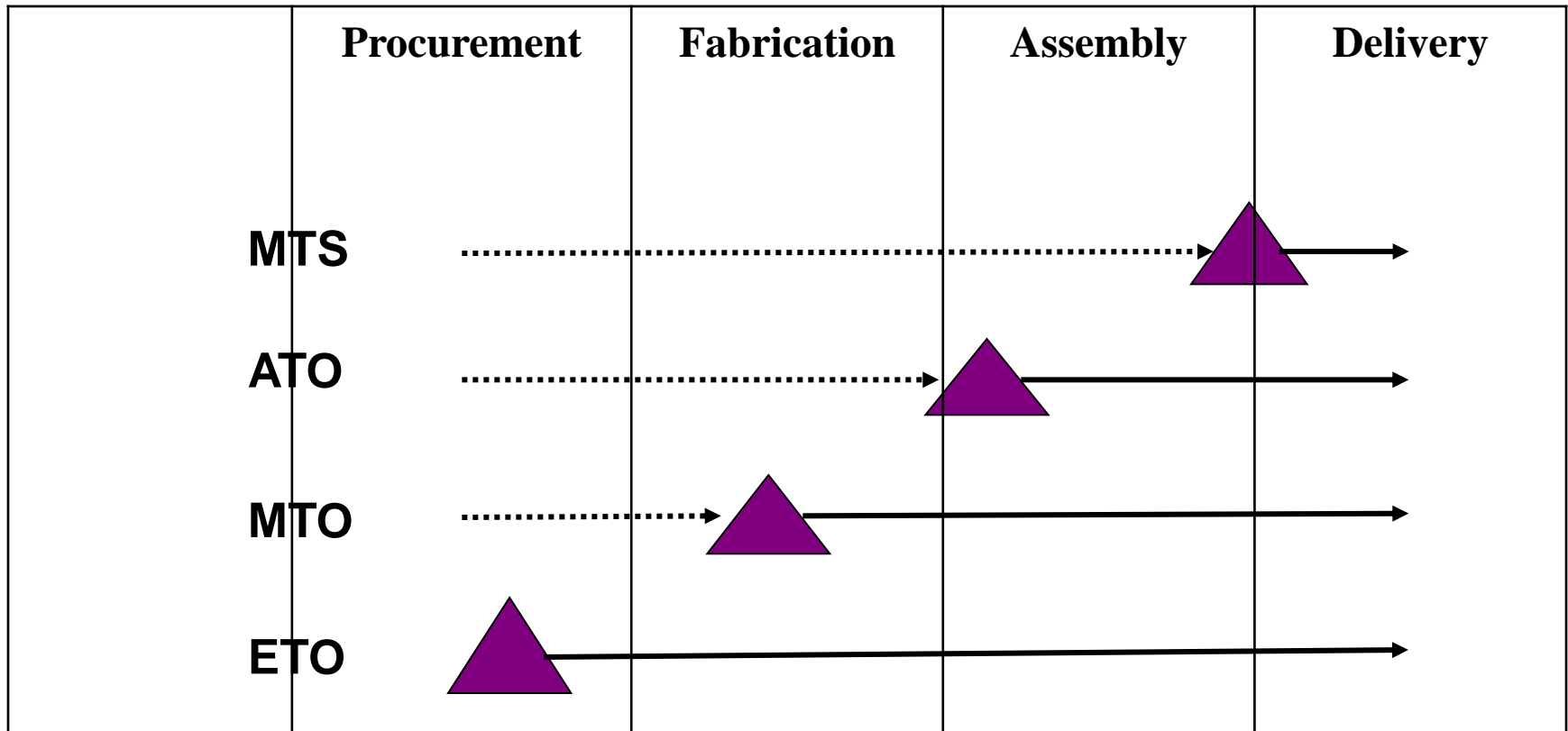
Beberapa Pertanyaan

- Apa peran industri manufaktur dalam kehidupan kita?
- Apa yang membuat sebuah industri manufaktur unggul dalam persaingan?

Competitive objectives



Product Positioning Strategy



Make to Stock (MTS)

- Items tend to be standard
- A customer is not willing to tolerate delay in receiving the product
- Management is required to maintain stock of finished products
- Produced in a flow shop / mass production system

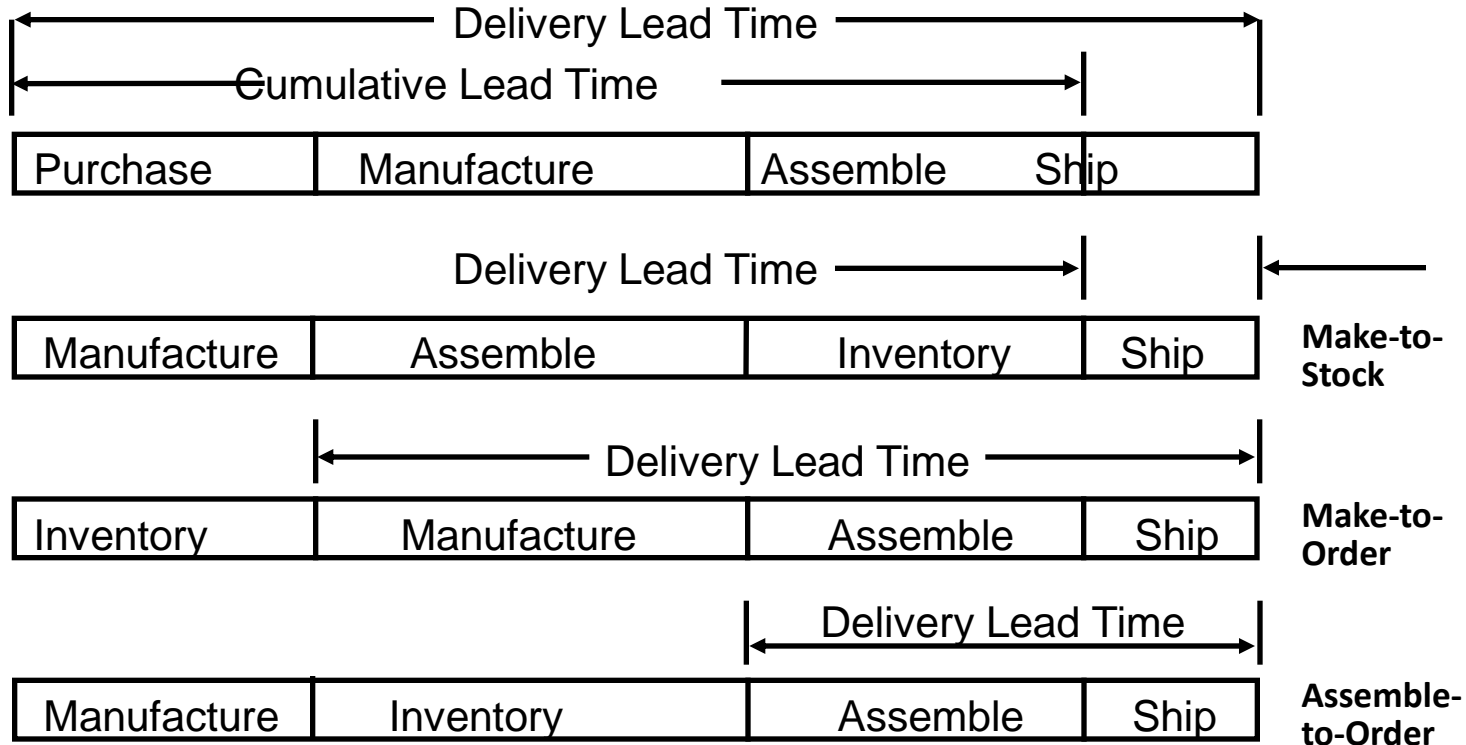
Assemble-to-Order (ATO)

- Product variety tend to be large, produced from standard components and sub-assemblies with a short assembly lead time.
- Options, subassemblies, and components are either produced or purchased to stock
- The customer enjoys for some customization, yet has a shot wait for delivery

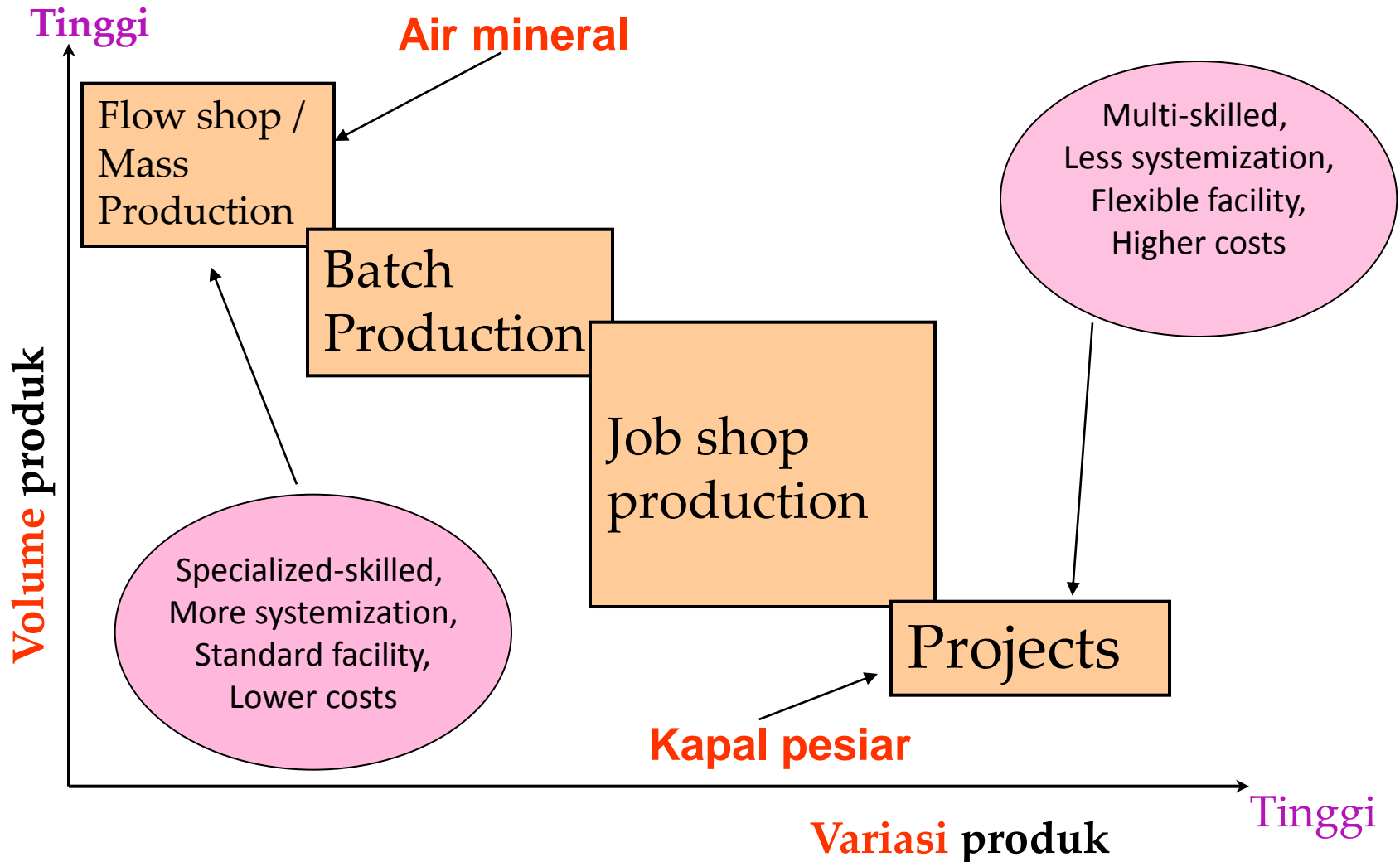
Make- or Engineer-to-Order

- Produce specialty goods
- In many situations, the design of the item is part of what is purchased
- The final product is usually a combined of standard components and other components custom designed for the customer
- The manufacturer often purchases materials after the order is placed
- The customer must be willing to tolerate a long lead time

Decoupling Points Vs Lead Times



Process Positioning Strategy



Flow Shop

- The product always follows the same sequential steps of production
- Could be continuous or discrete flows
- The production process generally is arranged to minimize materials handling
- Inventory planning and control is driven by the rate of flow
- Balanced capacity of different works stations along the line is important

Batch Production

- Two or more products are manufactured in the same facility
- Long setup time between batch → each batch should run for several hours or days to achieve economies of scale
- Equipments tend to be more general purpose, and thus less efficient, than the flow shop

Job Shop

- Organization of similar equipment by function
- Orders may follow similar or different paths through the plant, suggesting one or more dominant flows
- The layout is designed to support great diversity of flow among products and large WIP
- Many different lots could be in the production facility at the same time
- Resource availability must be coordinated with order planning

Diskusikan:

Pabrik TV, Mobil, dan Kapal

- Bedakan posisinya pada spektrum Volume dan Variasi
- Model layout apa yang digunakan?
- Bedakan strategi manufakturnya
- Seberapa penting ramalan penjualan produk akhir pada produk-produk tersebut?
- Hal-hal apa yang menjadi kinerja kritis sistem produksi tersebut?
- Dalam bentuk apa rencana produksi akan dibuat?
- Dalam bentuk apa inventory akan disimpan?

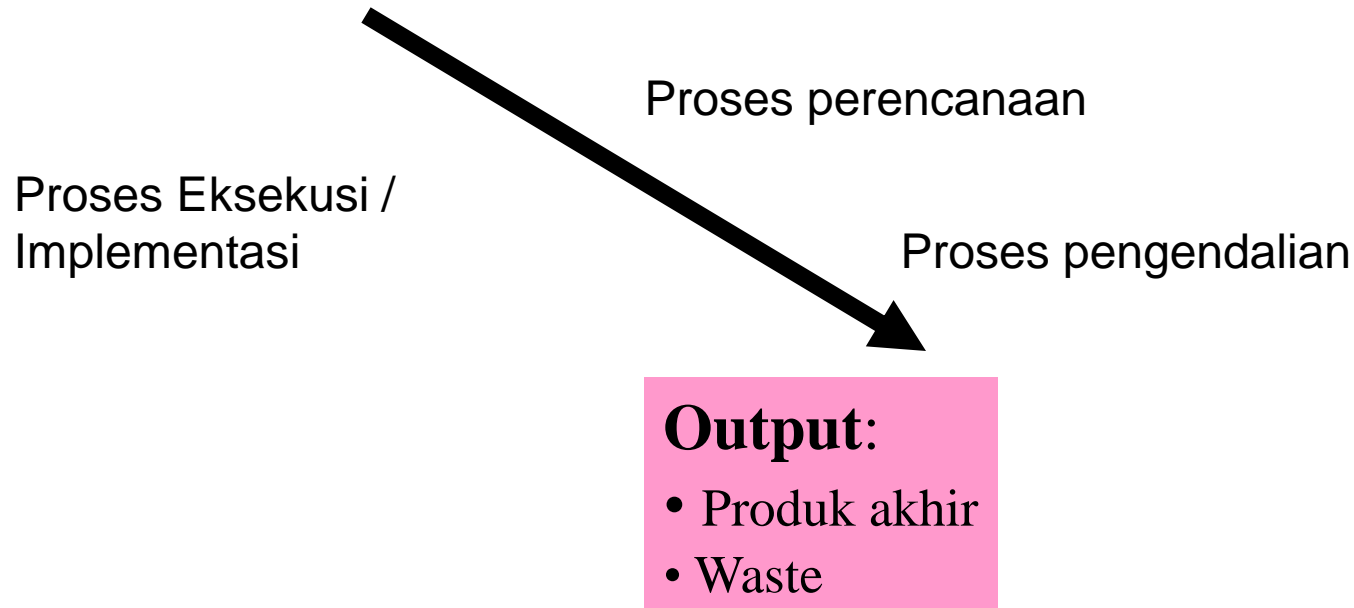
PPIC

Terminologies

- Production Planning and Control (PPC)
- Production Planning and Inventory Control (PPIC)
- Manufacturing Planning and Control (MPC)

Sumber Daya Produksi:

- Bahan baku dan komponen
- Tenaga kerja
- Mesin dan peralatan



Planning and Control: What decisions are involved?



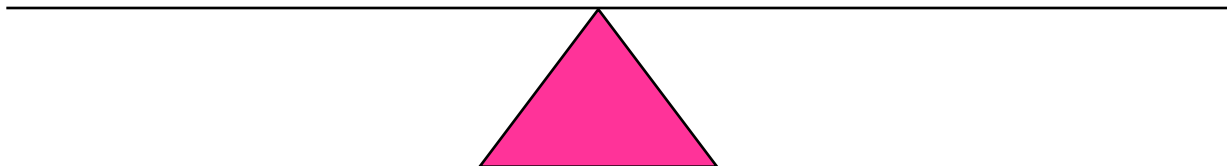
Why Plan?

To satisfy customer demand, ensure the availability of resources

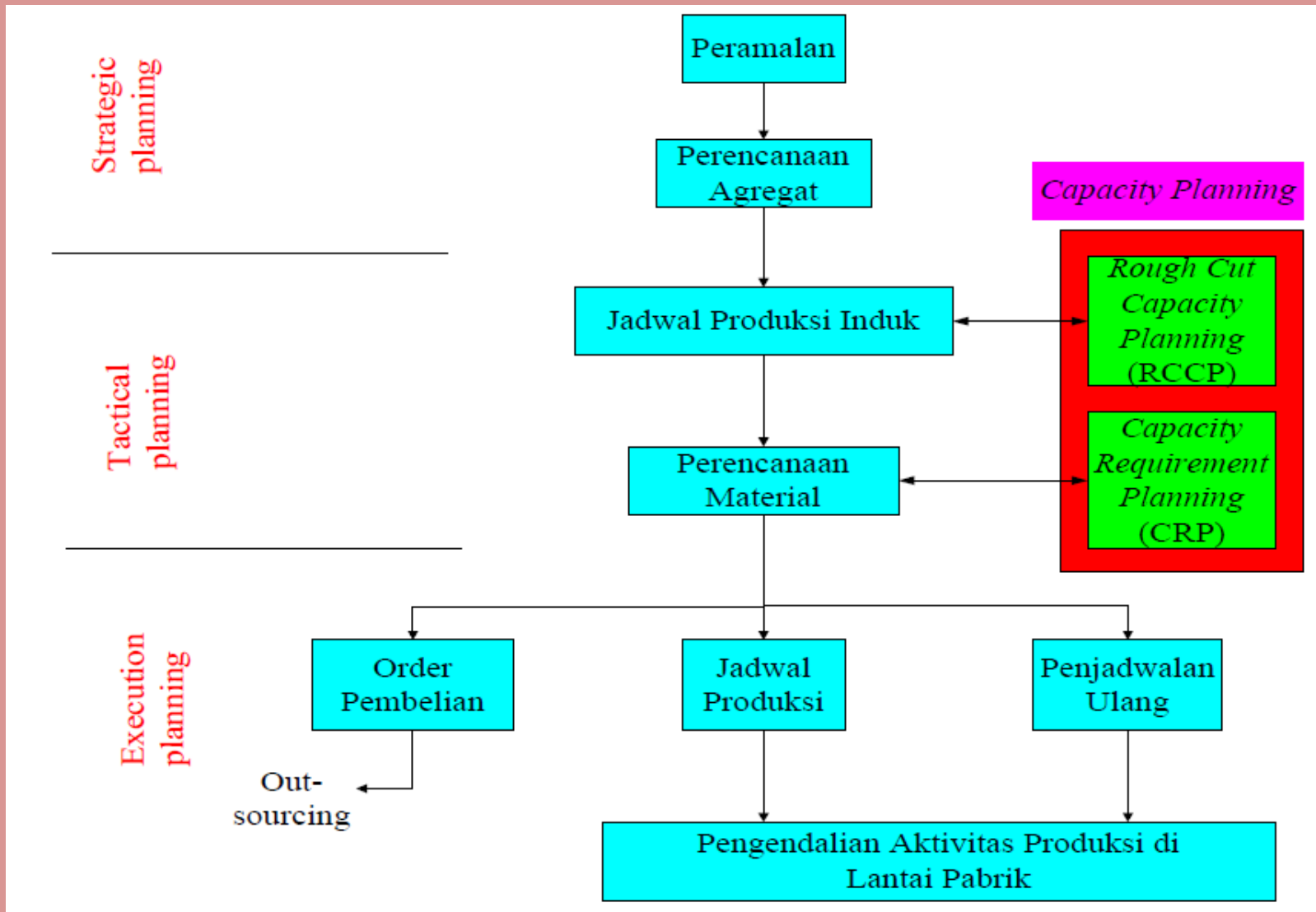
- Material
- Capacity

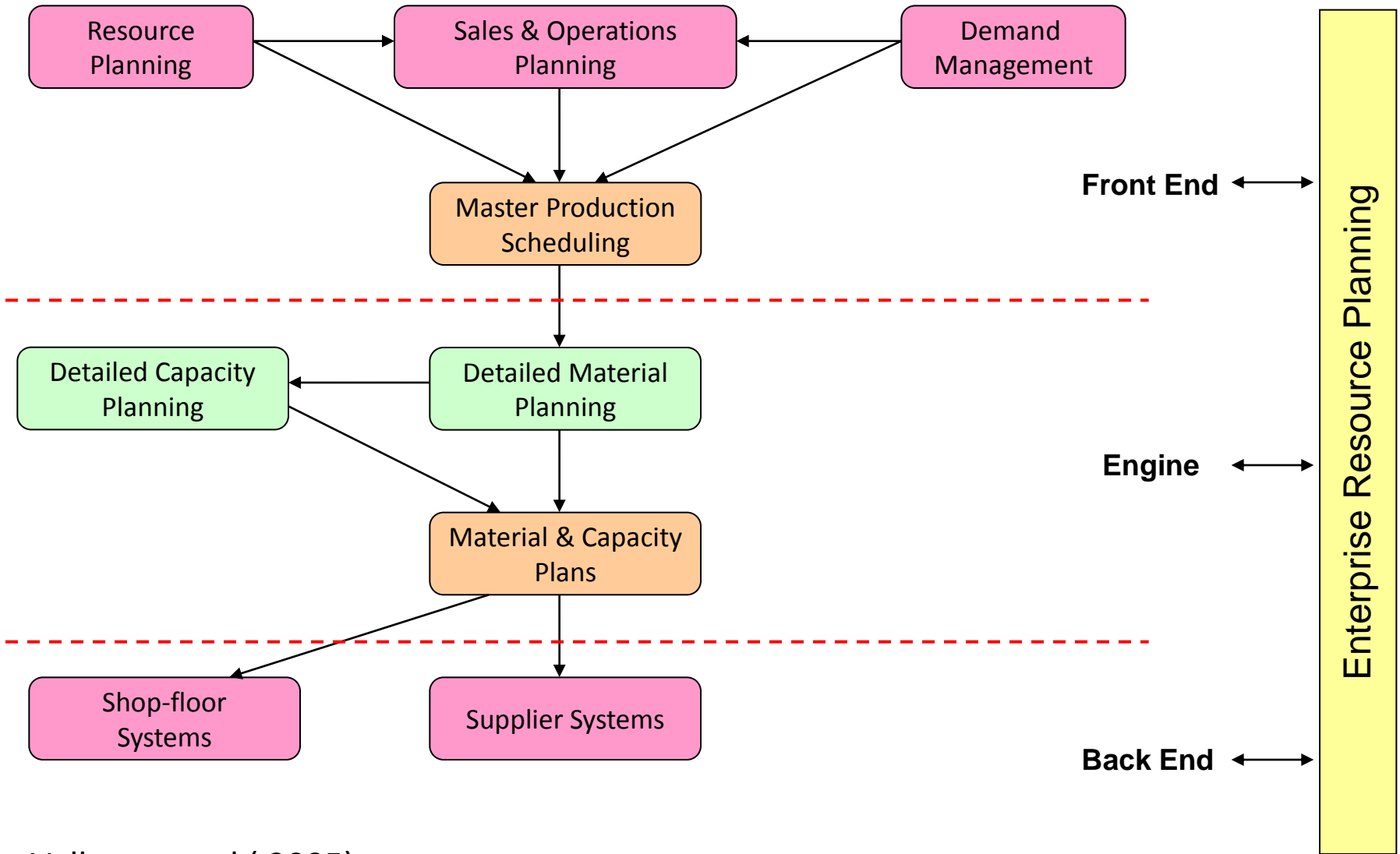
Demand

Resources



Tahapan Perencanaan & Pengendalian Produksi

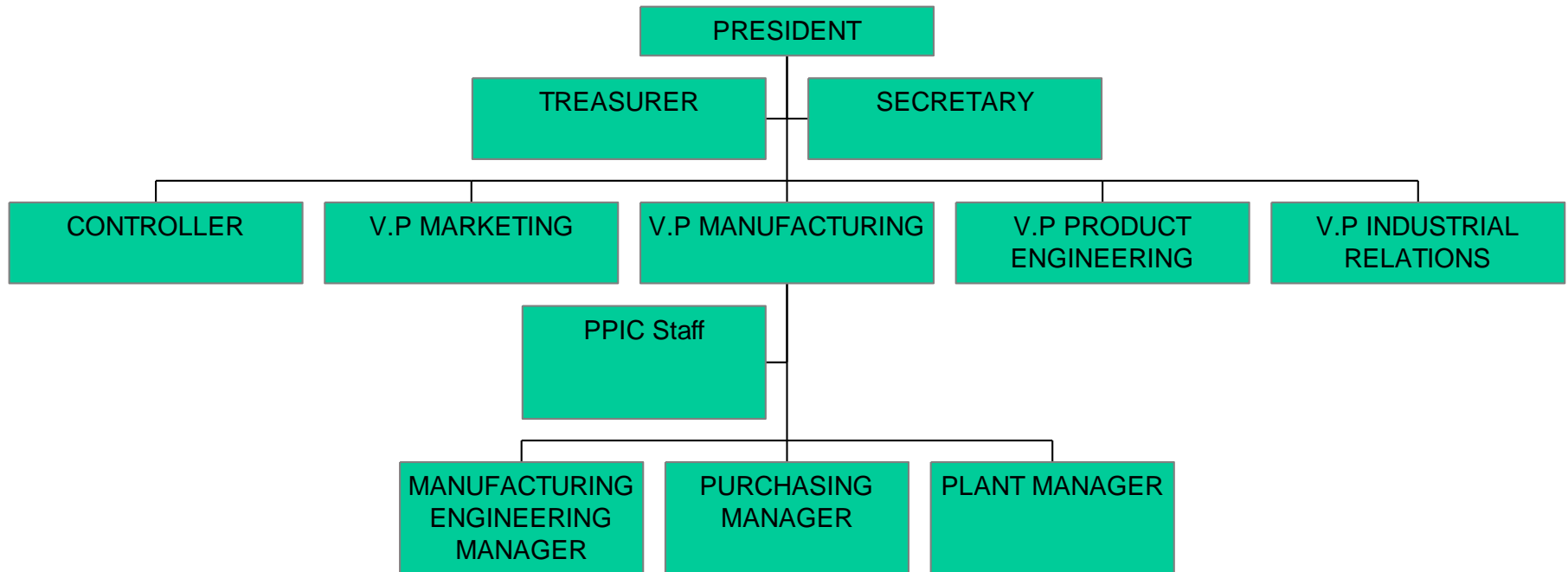




PPC FUNCTIONS

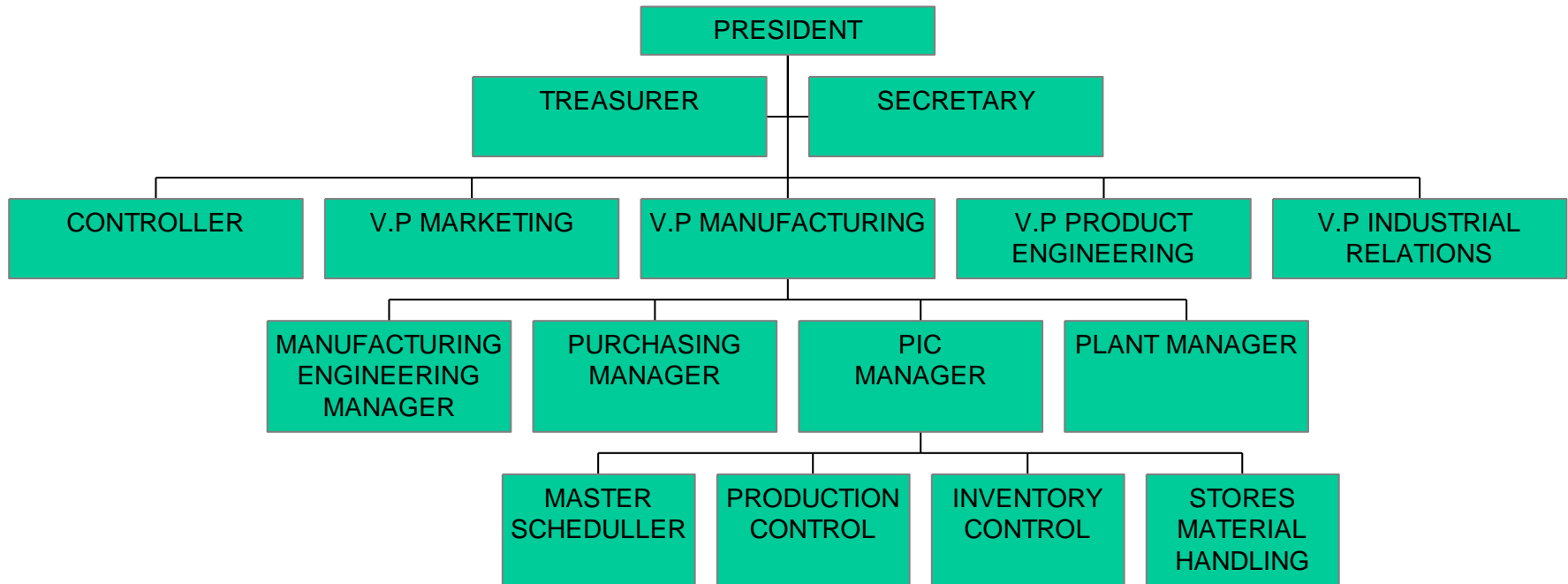
- PLANNING PRODUCTION
- PLANNING INVENTORIES
- PLANNING CAPACITIES
- AUTHORIZATION OF PRODUCTION AND PROCUREMENT
- CONTROL OF PRODUCTION, INVENTORIES AND CAPACITIES
- STORAGE AND MOVEMENT OF MATERIALS

ORGANIZATION STRUCTURE



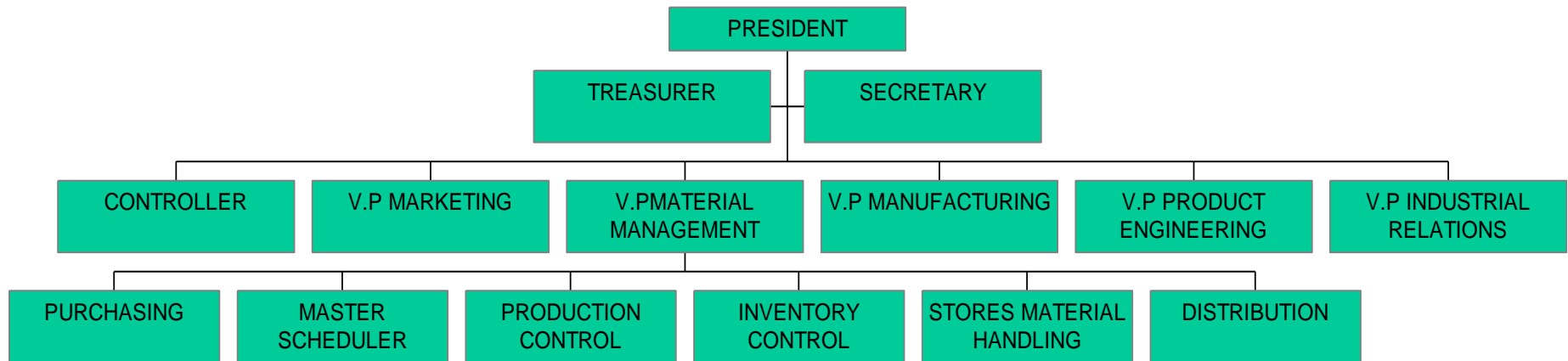
PPIC AS A STAFF FUNCTION

ORGANIZATION STRUCTURE



**PPC AS A LINE FUNCTION
DEALING WITH MATERIAL MOVEMENT INSIDE FACTORY**

ORGANIZATION STRUCTURE



**PPC AS A LINE FUNCTION
DEALING WITH MATERIAL MOVEMENT INSIDE AND OUTSIDE FACTORY**

1. PPIC is only one function in a production system. The function is not to work in isolation, but it needs good cross functional team with other functions.
2. PPIC is also an agent in a company which should foster good coordination with suppliers, subcontractors, customers, and other relevant parties within a supply chain.

Conflicts Between Functions

We should always have enough inventory so that none of the customer orders are missed

Our inventory turnover rate is too low, we need to have our inventory level reduced by 10% this year

We need to have a better delivery schedule from our suppliers. Too much inventory increase difficulty in managing store activities

I don't want my machine to have more than one setup in a week. Too many changes from customers significantly deteriorating our productivity.

Bad cross functional team: Some causes

Engineering changes not
Communicated to other
functions

Marketing team did not
know the load of the Production
system and make decisions
Without consulting
Production people

When issuing materials,
warehousing people often
forget to input the transaction
to the system

Information about late
Material delivery from
suppliers is not shared
with other functions

PPC for Networked Companies

- It is very often one company does not perform the whole PPIC functions. Rather, the functions are spread over a number of different points within a networked companies.
- For example, many multinational companies do the strategic plan and procurement centrally, but make detailed plan in a local office.

Collaborative Planning

- A new issue in production planning and control is the emergent trend of companies doing collaborative planning.
- This is important to make better synchronisation and visibility across the supply chain.

Pertemuan 2 & 3

- **Tugas Baca:**
 - Prinsip dan Metode-metode *Forecast*
- **Short quiz 1:**
 - Awal pertemuan ke-2:
 - Materi: review materi pertemuan 1, Prinsip, dan Metode-metode Forecast.

SAMPAI JUMPA MINGGU DEPAN