Chapter 1 생산·운영관리 서론
(Introduction to the Field, Production/Operations Management)

<1> 생산 System 관리의 정의

(1) Production, Production system

① Definition of production

The process of producing economic goods, including tangible goods and intangible services, from factors of production, thus creating utility by increasing value added.

② Concept of "production system" (pp.22-24, <도표 1-2>)

* A production system is defined as a user of resources to transform inputs into some desired outputs.

- input

- transformation process :

  - Physical--manufacturing
  - Locational--transportation
  - Exchange--retailing
  - Storage--warehousing
  - Physiological--health care
  - Informational--telecommunications

- output

  * Operations as service : core service & value-added service

- environment

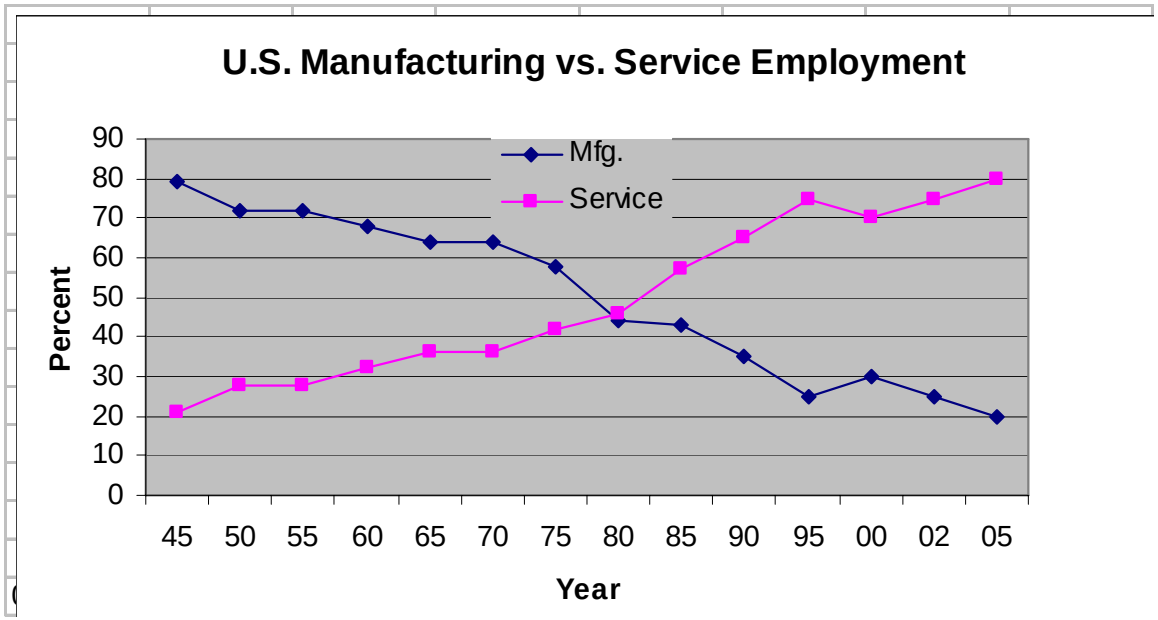
③ Process mapping

- SIPOC diagram :
  Process의 기본요소를 파악하기 위한 간단한 도표

- Value stream map :
  Data(WIP, setup time, processing time/unit, 오류율, 대기시간 등)뿐만 아니라 흐름까지도 기록하는 도구

④ Manufacturing or Service? (pp.24-27, <도표 1-5>)

- Production of goods – tangible output
  Delivery of services – an act
- Declining in manufacturing jobs



- Why manufacturing matters?

1. Accounts for over 70% of value of U.S. exports
2. Average full-time compensation about 20% higher than average of all workers
3. Manufacturing workers more likely to have benefits
4. Productivity growth in manufacturing in the last 5 years is more than double U.S. economy
5. More than half of the total R&D performed is in the manufacturing industries
6. When a California manufacturing job is lost, an average of 2.5 service jobs are lost

(2)Management tasks in operations

•Fundamental tasks for operations manager -Finch & Luebbe

- organizing : designing & implementing systems
- planning : arranging in advance for all prerequisities
- controlling: comparing what is actually happening to what was planned & taking appropriate actions to correct the variance
- improving

(3) Operations management (pp. 16-20)

• Operations management (OM) is defined as the design, operation, and improvement of the systems that create and deliver the firm`s primary products and services.

(4) 생산성(pp.47-50)

- Productivity is a common measure of how well a country, industry, or business unit is using its resource

(cf) KPI (Key Performance Indicator)

(참고) effectiveness vs. efficiency (p.19)

생산성 = (고객에 대한 가치) /(생산자에 대한 비용)

① Total Measure Productivity
② Partial Measure Productivity
③ Multifactor Measure Productivity

<도표2-3>, <도표2-4>

(Example of Productivity Measurement)

- You have just determined that your service employees have used a total of 2400 hours of labor this week to process 560 insurance forms. Last week the same crew used only 2000 hours of labor to process 480 forms.

- Which productivity measure should be used?

  Answer: Could be classified as a Total Measure or Partial Measure.

- Is productivity increasing or decreasing?

  Answer: Last week`s productivity = 480/2000 = 0.24

  This week`s productivity = 560/2400 = 0.23

  So, productivity is decreasing slightly

<2> 생산관리와 관련한 의사결정

(1) 생산관리의 목표 (operations objective) : pp.39-44
(cf) process vs. product

① Flexibility
② Quality
③ Delivery (Time, Speed) :
(ex) throughput time, cycle time, response time
④ Cost

(2) 생산관리와 관련한 의사결정의 분류

- Strategic (long-term) decisions
- Tactical (intermediate-term) decisions
- Operational planning and control (short-term) decisions

(3) System과 system approach

① System
② System approach

<3> Historical Development of POM (pp.29-35)

① Factory system beginning

② Scientific management era

③ System approach

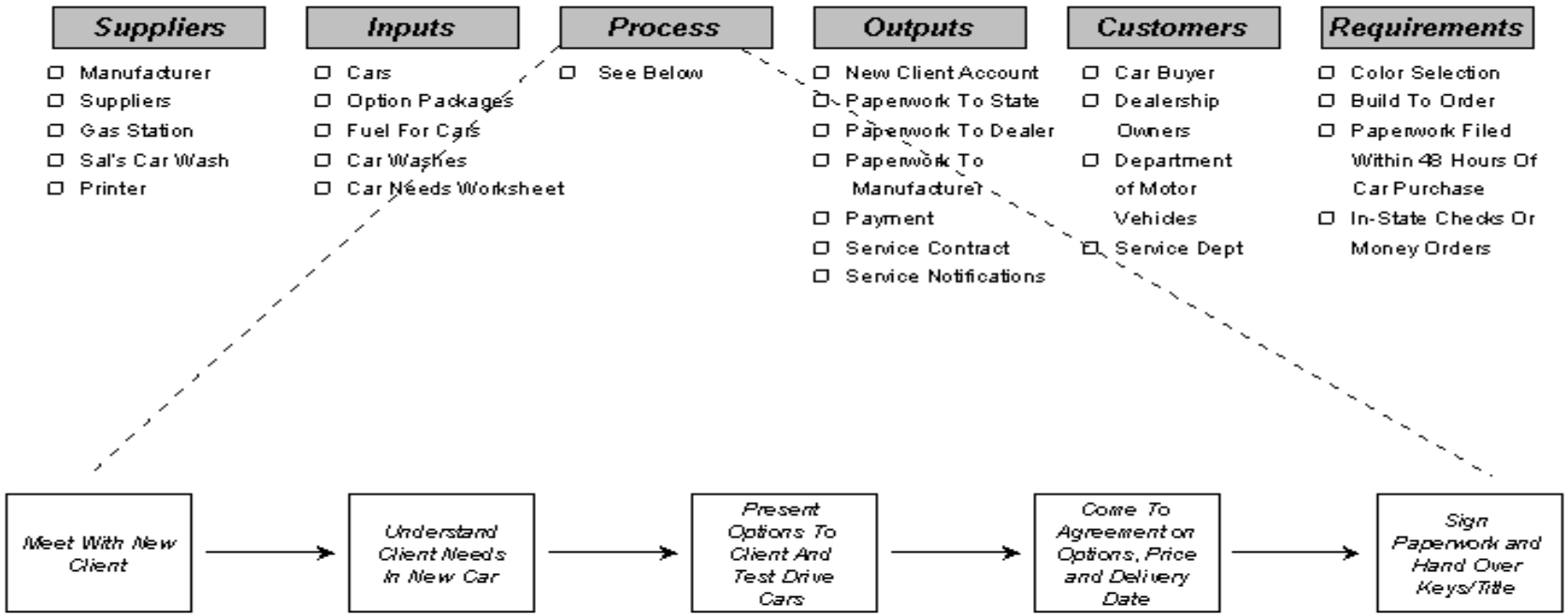
④ 1970`s - 1990`s
- JIT and TQC.
- Manufacturing Strategy Paradigm.
- Service Quality and Productivity.
- Total Quality Management and Quality Certification.
- Business Process Reengineering.
- Supply Chain Management.
- Electronic Commerce.

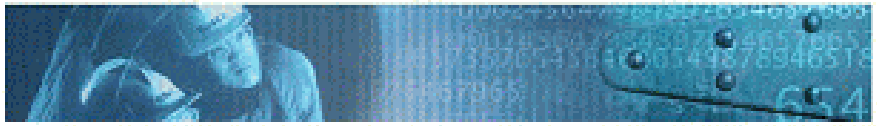
* Current Issues in POM

- Market of consumers has evolved into market of prosumers
- Age of mass production is passing
  (production-driven system → market-driven system)
- Developing flexible supply chains to enable mass customization of products and services.
- Managing global supplier, production and distribution networks.
- Increased commoditization of suppliers.
- Making efficient use of internet.
- Achieving good service from service firm.

SIPOC Diagram

Fictitious Car Dealer Example

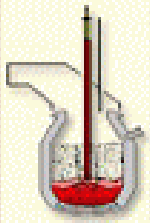
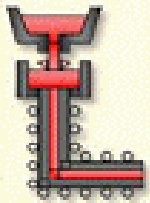
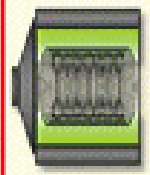




3.공정 소개

Define

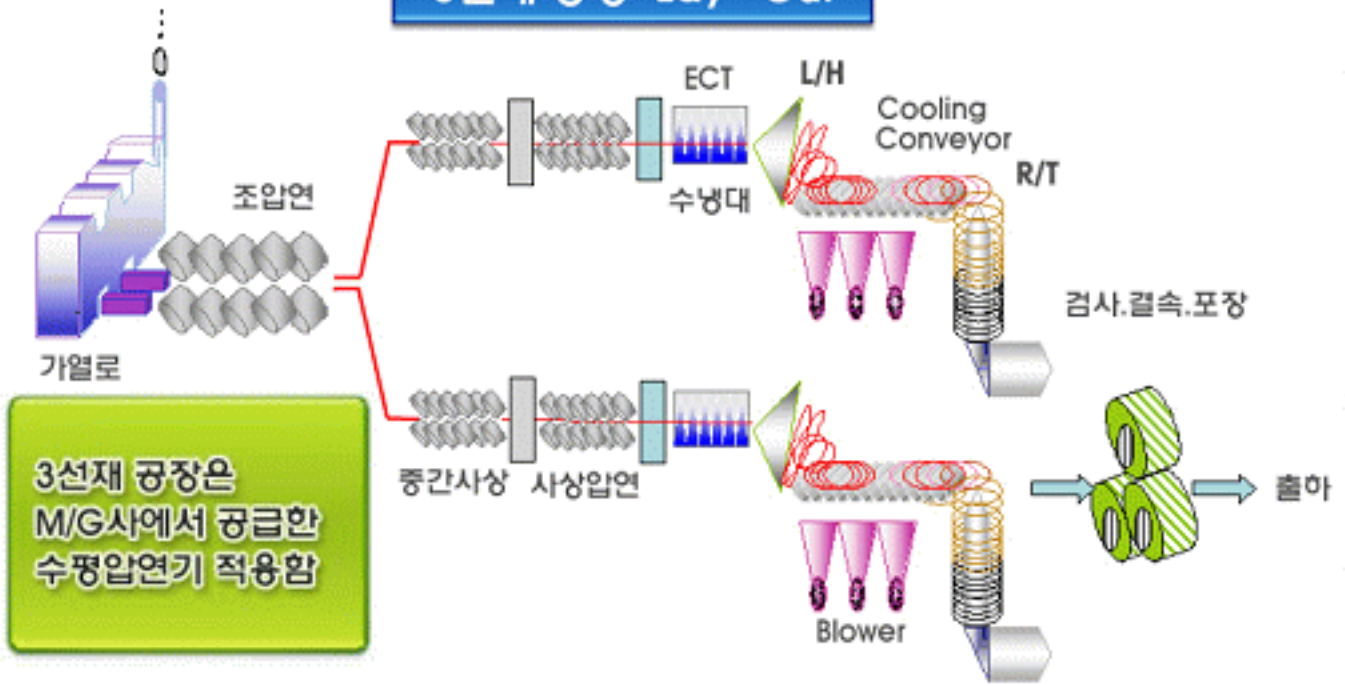
3-1. 공정 소개 및 으뜸 활동장소

순위	1	2	3	4	5 활동장소	6	7	8
공정 기호								
공정 기호								
공정명	용광로	전로	연주	정정	**압연**	냉각	검사	출하
세부 작업	철광석 용해	불순물 제거	용강 응고	빌렛트 연마	**압연 공정**	냉각 공정	품질 치수 검사	제품 이송

4-5. 프로세스 분석(SIPOC)

Suppliers	Inputs	Process	Outputs	Customers
연주공장 강편공장 창원 특수강	Billet (Billet품질양호) Billet 정보 압연 지시정보	Start → End Billet 추출 → 조압연	Wire Rod 제품정보 생산량 조업실적정보	고객사 후공정 -냉각공정 -시험공정

3선재 공정 Lay-Out



3선재 공장은
M/G사에서 공급한
수평압연기 적용함