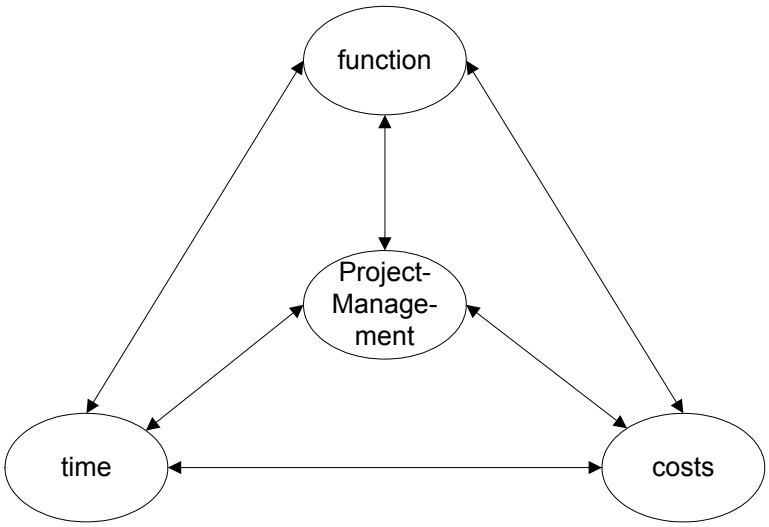
Projectmanagement

1 Introduction

Project –Definition:
- limit of time
- high complexity
- interdisciplinary tasks

Different tasks:
- Planning
- realisation settlement
- construction, testing
- monitoring



Phases of a project:

planning (10..15%)

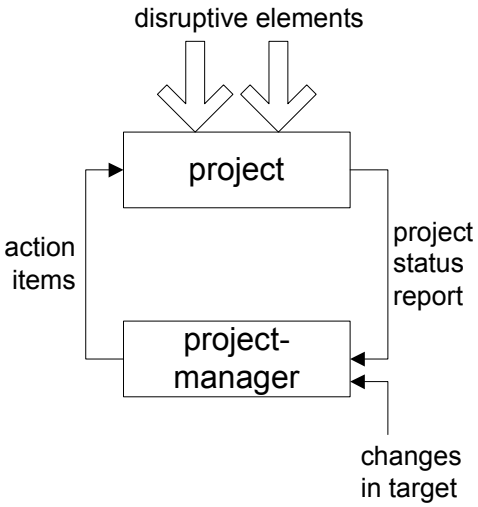
Phase 0	description of task/problem
Phase A	conception
Phase B	definition
Phase C	draft definition
	(for bidding papers, tenders [Ausschreibungen])
Phase D	realization
	(development, construction, manufacturing, tests, …)
Phase E	use, maintenance
Phase F	sort out, recycling, disassembly, disposal

2 big projects (in Europe)

- tunnel France/Great Britain
- bridge Danmark/Sweden
- Ariane 5
- UMTS
- change to EURO currency
- toll collect

3 some Phases in detail

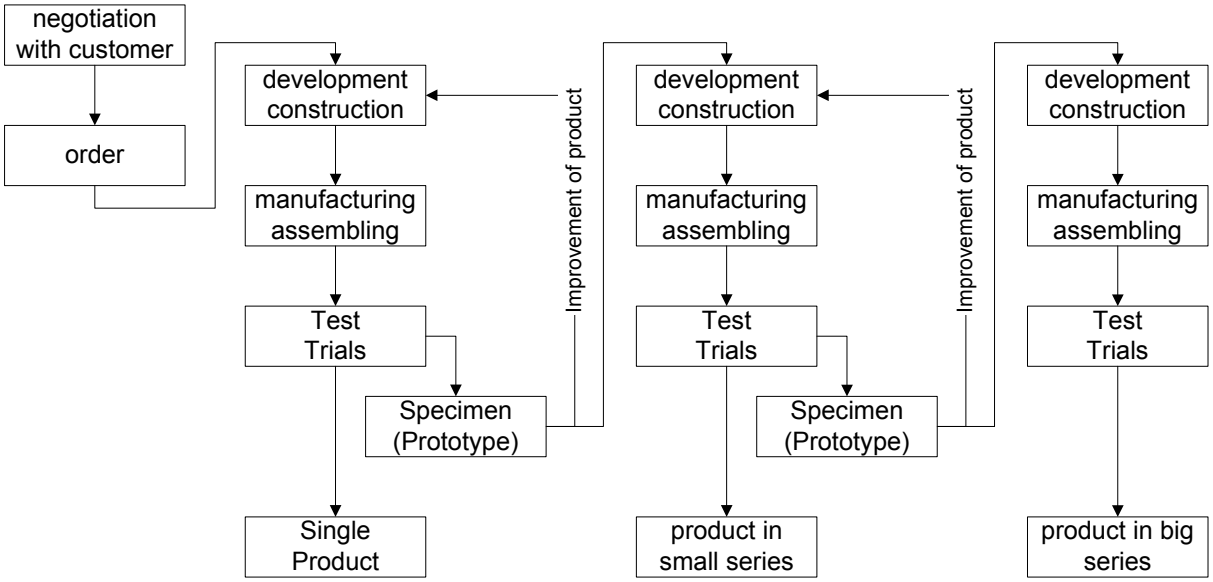
3.1 Phase D: Development, Construction, Manufactoring



3.2 Phase E: Use, Maintenance

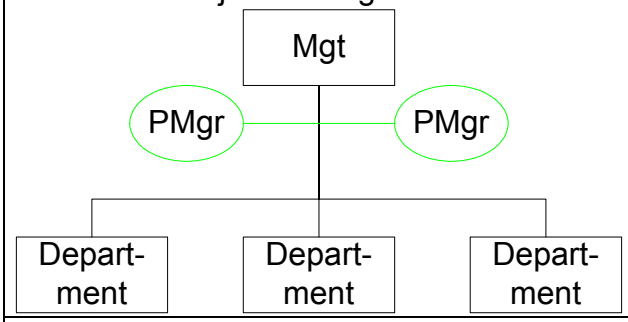
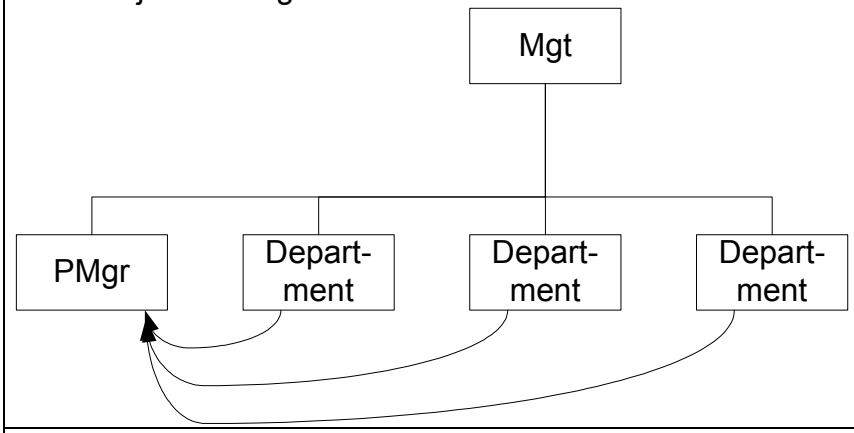
3.3 Phase F: Disassembling, Recycling

4 P-Mgt for Development

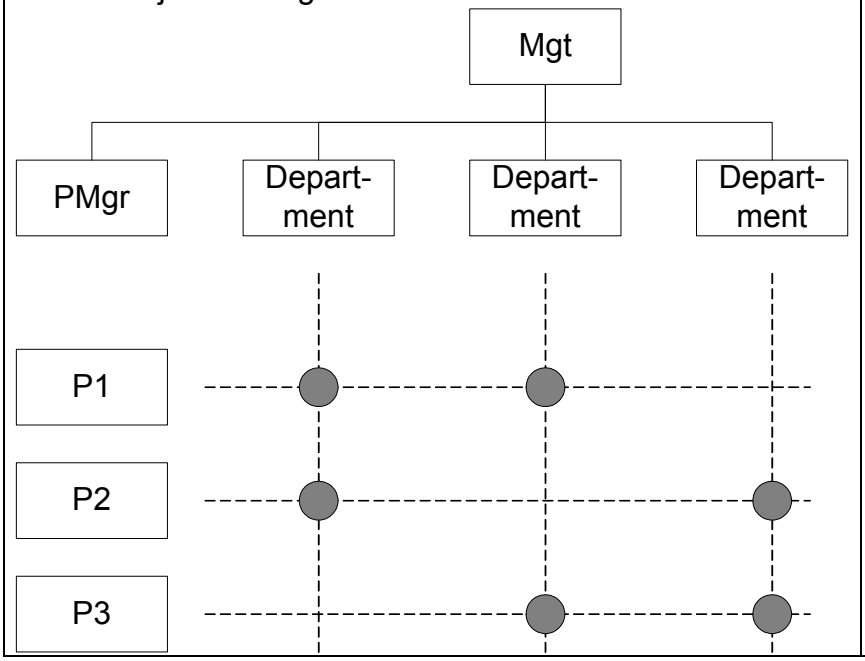


10.11.2003

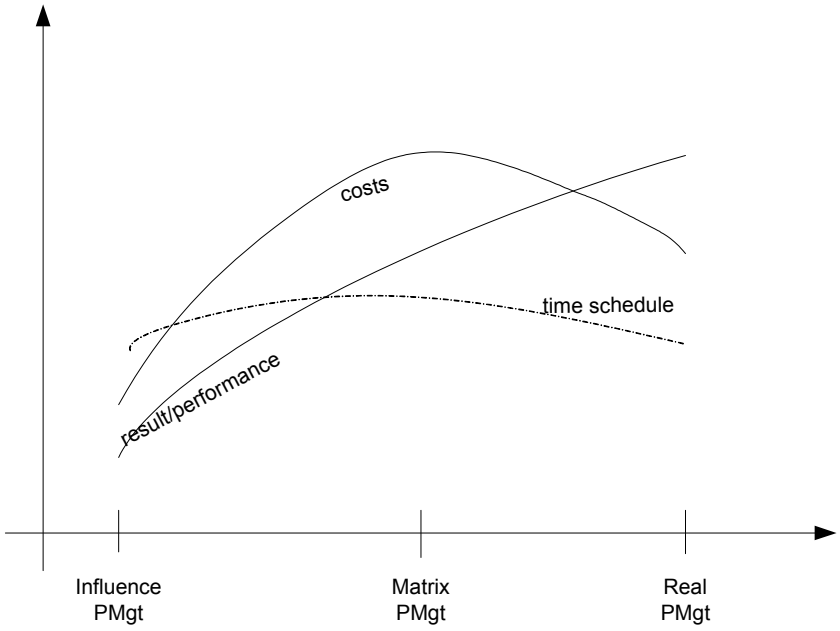
5 Organizations

Influenced Project Management  	assisting PMgrs - financial projects - organizational projects - employees: • working time • salary
Real Project Management  	project managers come out of the departments for the time of the project

Matrix Project Management



project managers stay in their departments (don't loose important contacts) are only controlled by a higher PMgt.



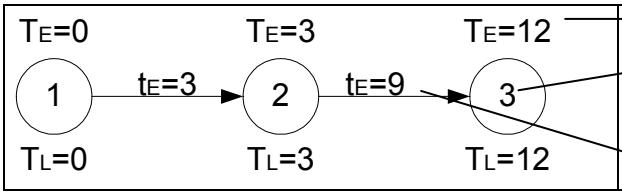
6 Example: dough production line

- customer: Japanese company (No. 3 in Japan dough manufactures)
- competitor for production line: leading Japanese company

1.12.2003

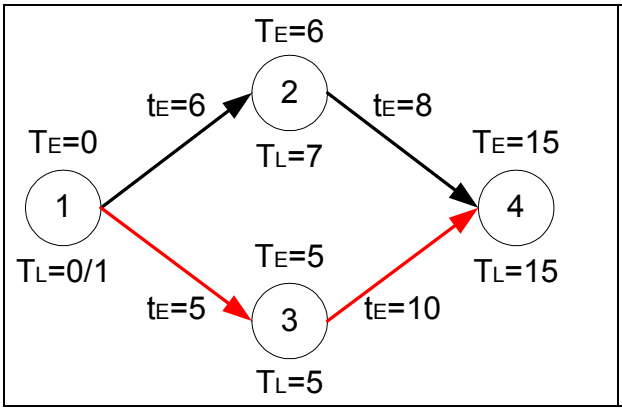
7 Time calculation by MS Project

PERT
Program
Evaluation and
Review
Technique



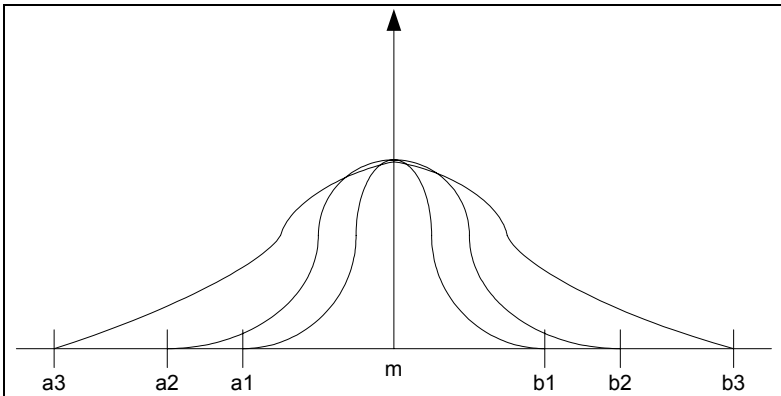
Resource
event

activity



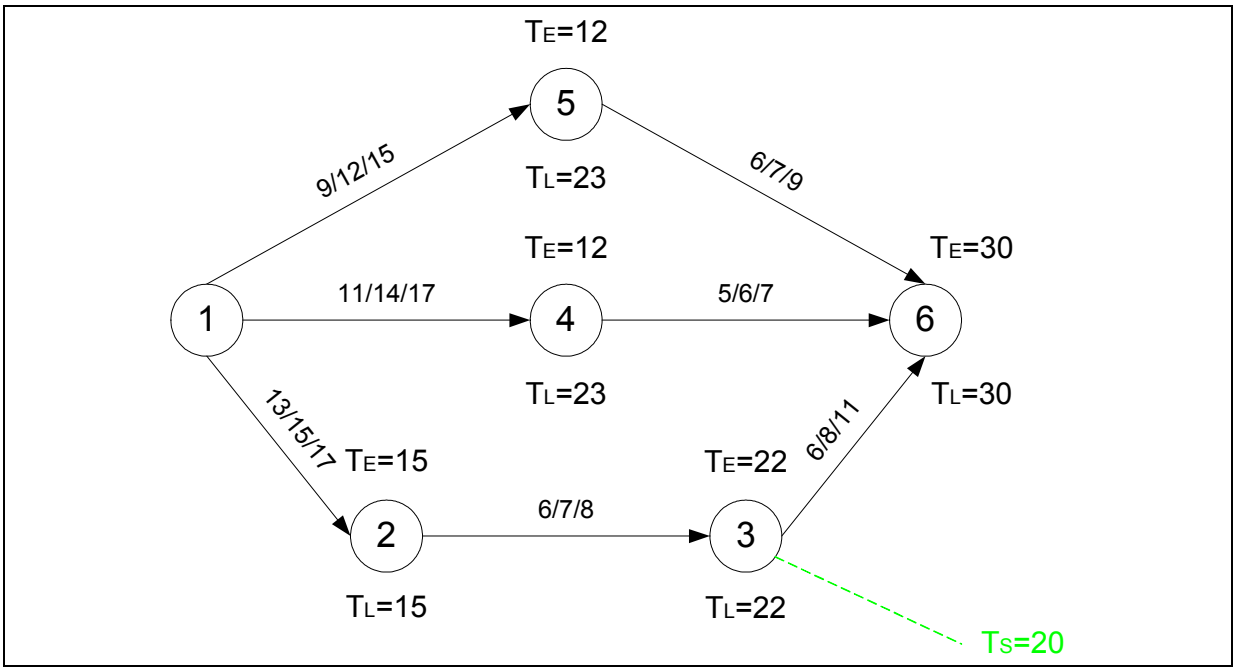
T_L-T_E=0 → critical Path
T_L-T_E>0 → surplus of resources
T_L-T_E<0 → locking of resources

T_L – time latest
T_E – time earliest
T_S – time scheduled



$t_m=(a+4m+b)/6$

8.12.2003



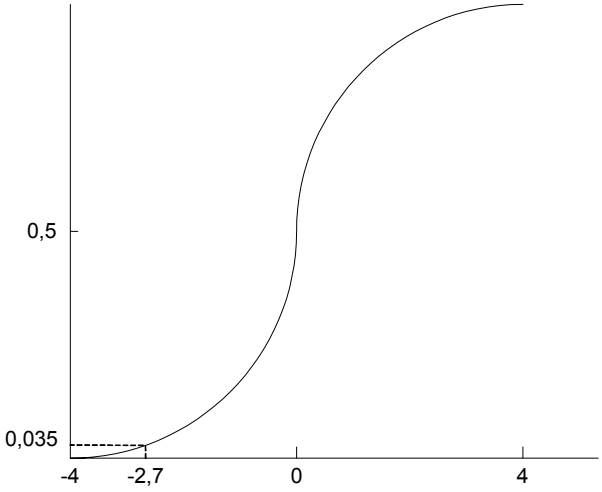
previous event	following event	a	m	b	t_m	$\sigma^2=((b-a)/6)^2$	$Z=T_S-T_E/(\sqrt{\sum\sigma^2}_{TE})$
1	2	13	15	17	15	0,44	
2	3	6	7	8	7	0,11	

If the customer ask if it is possible to finish event 3 to $T_S=20$

event	T_E	T_L	T_L-T_E
1	0	0	0
2	15	15	0
3	22	22	0

$Z(3)=20-22/(\sqrt{0,44+011})=-2,7$

→ normal distribution function



→TS=20 can be reached with a probability of 0,35%

8 Management of documentation

goal:
- right drawing
- right time
- right person

identification:
- type of document
- number
- issue
- release
- date
- name

05.01.2003

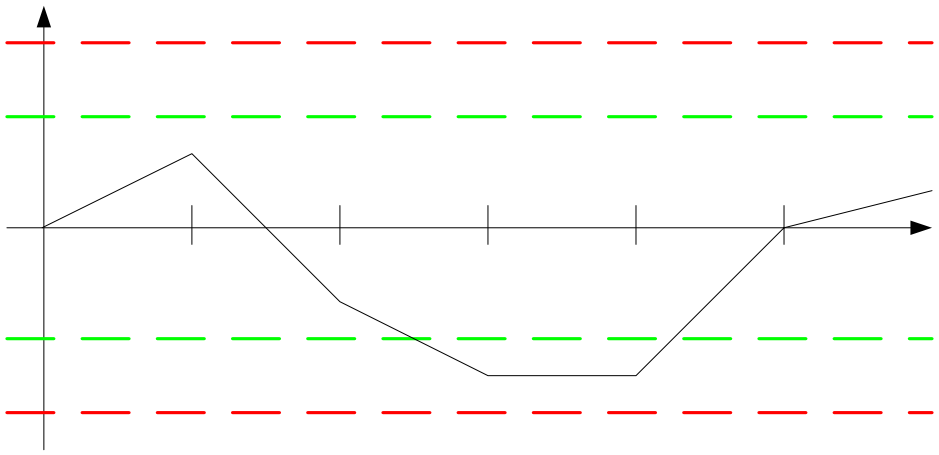
9 Status Index k

variables:

- planned costs
- actual costs
- planned progress
- actual progress

$$k = \frac{act.progress}{plan.progress} \bullet \frac{plan.costs}{act.costs}$$

k
- >1 → status better than expected
- =1 → status as planned
- <1 → status worse than planned



10 Characteristics of a System

10.1 Reliability of a System

$R = R_1 \times R_2 \times R_3 \times \ldots \times R_n = 0{,}999 \times 0{,}99 \times 0{,}8 = 0{,}791$

10.2 Availability of a System

$$V = \frac{BZ}{BZ + AZ} \text{ or } \frac{GZ - AZ}{GZ}$$

AZ: overall downtime (AusfallZeit) = ∑MDT
BZ: overall uptime (BetriebsZeit) = ∑MTBF
GZ = AZ + BZ (GesamtZeit)

$$V = \frac{MTBF}{MTBF + MDT}$$

MTBF: Mean Time Between Failure
MDT: Mean Down Time