

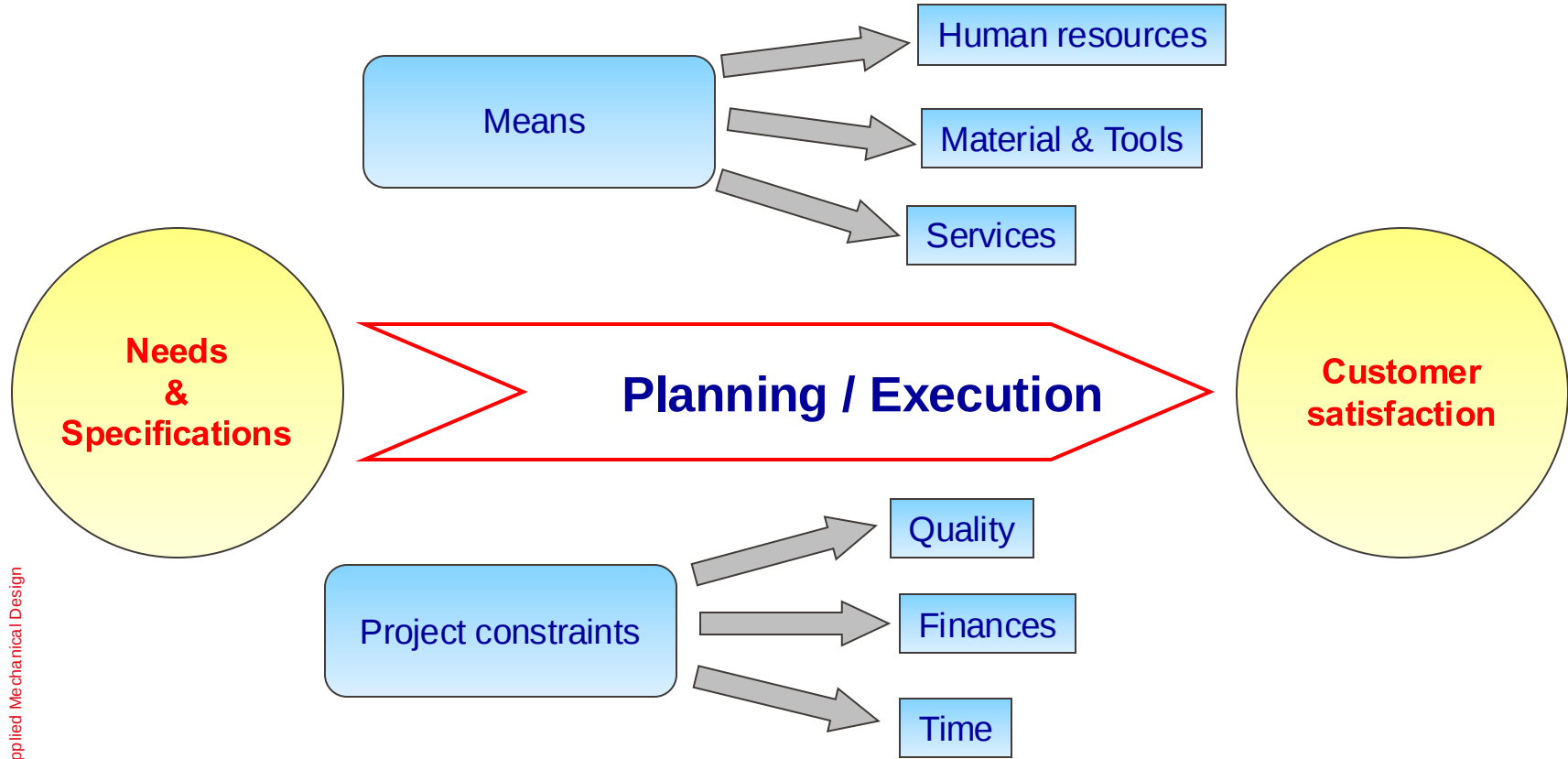
Applied Mechanical Design

**Project Planning
&
Management**

Prof. J. Schiffmann

What is a Project?

- A group of *tasks* organized to achieve an *objective*,
within a given *time*,
within an imposed *budget*,
involving *persons* and the use of appropriate *tools*



- Piloting committee
 - Managerial board of company
 - Validates, strategic decisions
- Sponsor
 - Project customer
- Project team
 - Human resources
- Project manager
 - Handles the project, makes sure goal is achieved within budget and time

- Tasks & roles
 - Project definition (sets and agrees on objectives)
 - Planning
 - Piloting
 - Internal and external negotiation
 - Team motivator and animator
 - Internal and external reporting
 - Budgeting
 - Very difficult role...



<https://www.feedough.com/project-manager-definition-roles-responsibilities/>

- Work with references
 - Technical
 - Financial

- Periodic evaluation and comparison of project state to references
 - Implement corrective actions if needed

5 CHARACTERISTICS OF A GOOD PROJECT MANAGER

FOSTER GOOD RELATIONS

Being able to handle a multitude of people and personalities is at the crux of being a good project manager.

BE DRIVEN

Quality results require quality input. A good project manager does what it takes to ensure that things are done well and on time.

DELEGATE FIRMLY

Being a good delegator requires you to be aware of those around you and give the right task to the right person. Test people's strengths and allow them to grow by taking actions.

INSPIRE

Be sure to lead by example. When you work in a certain way, it motivates those around you to perform at the same level.

ANTICIPATE NEEDS

It is the product manager's responsibility to make sure people have what they need to bring out the best in them.

ANTICIPATE PROBLEMS

A good project manager must think about the future and foresee problems that might turn up and then avoid or divert them.

Top Project Manager Skills



Leadership

Lead - Motivate - Negotiate
Promote - Mentor



Problem Solving

Manage risk. Manage crisis.
Know when to escalate.



People

Manage.
Resolve Conflict.
Establish Trust.
Build Consensus.



Communication

Interpret business needs.
Educate stakeholders.
Facilitate productive discussions.

Analytical

Source Information.
Problem solve.



Technology

Know and use project
management & collaboration tools.

Administration

Manage budget, schedule & resources.
Track documents and assets.



Context

Understand project scope.
Knowledge of resources,
team and stakeholders.



Common Project Manager Personality Traits

integrity - persistent - confident - proactive - disciplined
realistic - innovative - visionary - courageous - creative - resourceful

SWYVEL

Cloud-Based Project Management & Collaboration Suite of Tools

Get More Done. Together.

www.swyvel.com

<http://visual.ly/five-distinctive-characteristics-successful-project-manager>

<http://www.swyvel.com/2013/11/project-manager-skills/>

- Tasks & roles
 - Does the hard work
 - Continuous source of innovation and optimization
 - Solidary partnership within complete project team
 - Objective & customer oriented behavior
 - Transparent communication
 - Early and efficient handling of conflicts
 - Subordinated to hierarchical and to project boss

- Matrix management structures

- Objective is sufficiently detailed time plan
- Communication and agreement on timing within project team
- Every team member knows by when delivery of which result is expected
- Gives overview on required resources and their distribution
- Identifies sequential and parallel tasks

- Terminology
 - Task
 - Define activities over a duration of time with a specified deliverable
 - Workpackage
 - Grouping of several tasks belonging together thematically
 - Milestone
 - Defines an achievement (important deliverable)
 - Often important decisions are taken
 - Does not take any time

- GANTT charts (Henry Gantt, 1861-1919)
 - Most used nowadays in industry
 - Tools available (MS-Project)
 - Represents tasks and resources in columns, time in x-coordinate

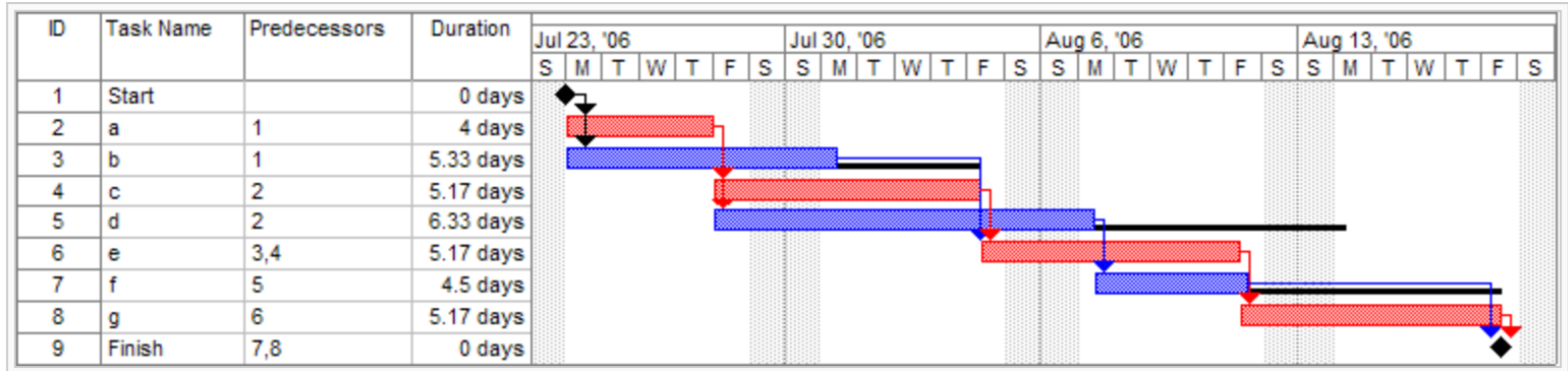
- PERT (Program Evaluation and Review Technique) & Critical Path Method

- Determine tasks and their deliverables
- Estimate resources needed for each task
- Estimate task duration
 - Pessimistic, realistic, optimistic
- Name responsible for task
- Establish logical relationships between tasks
 - Predecessor tasks
 - Successor tasks
- Establish GANTT chart

- Step 1: Task duration and dependencies

Activity	Predecessor	Time estimates			Expected time
		Opt. (<i>o</i>)	Normal (<i>m</i>)	Pess. (<i>p</i>)	
<i>A</i>	—	2	4	6	4.00
<i>B</i>	—	3	5	9	5.33
<i>C</i>	<i>A</i>	4	5	7	5.17
<i>D</i>	<i>A</i>	4	6	10	6.33
<i>E</i>	<i>B, C</i>	4	5	7	5.17
<i>F</i>	<i>D</i>	3	4	8	4.50
<i>G</i>	<i>E</i>	3	5	8	5.17

- Step 2: Plot GANTT chart



- Some tasks show “slack”
- Some tasks are on “a critical path”
 - Path is continuous
 - Delays on critical path impact project end