

Project Planning & Control

Lesson 8

Industry Perspective – Prof. N. Raghavan

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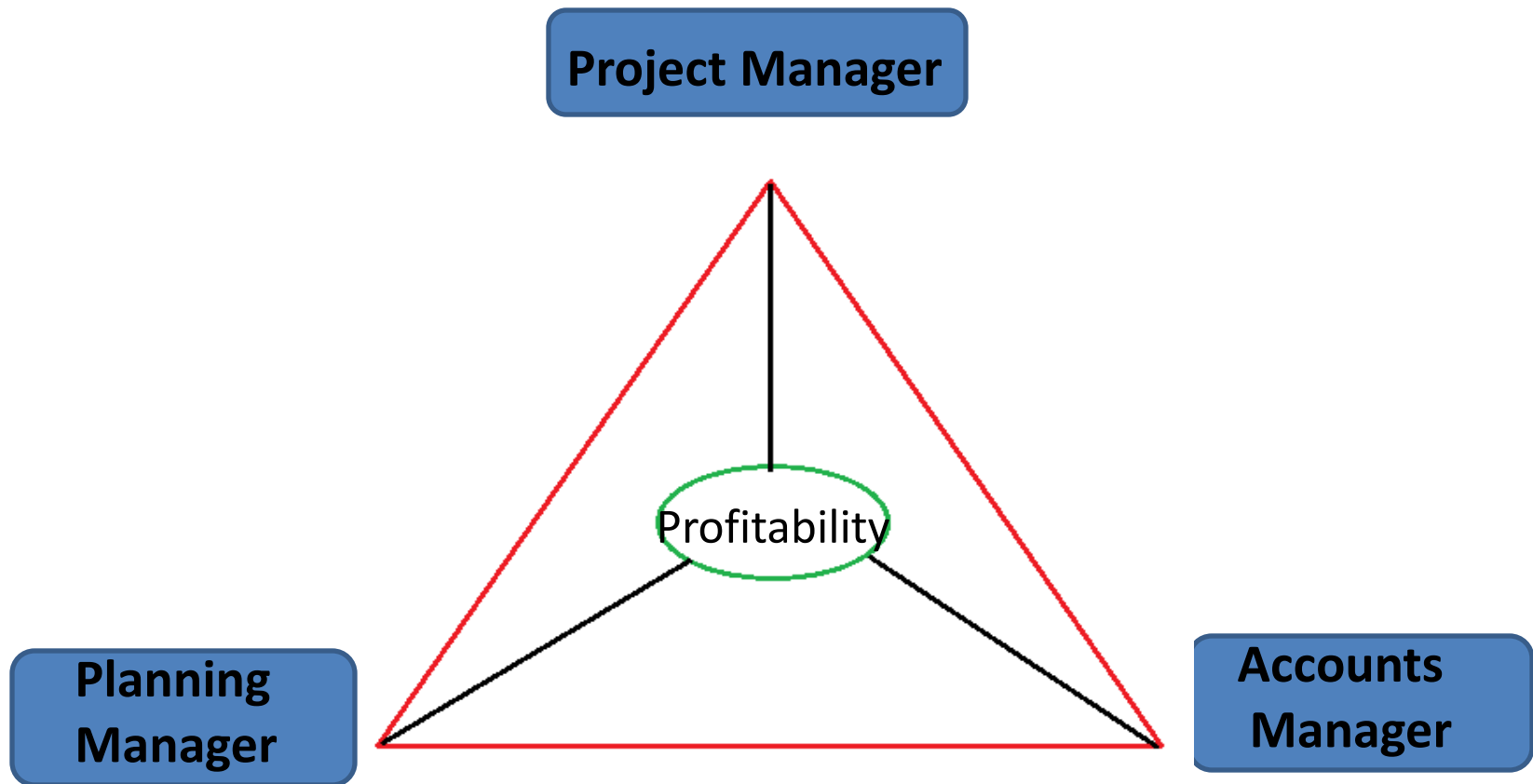
Project Planning & Control

The Importance of Planning Department

Role of a Planning Engineer (team) in a construction project

- Assessment of Quantum of Work
- Understanding Scope as per Contract & contract Terms & Conditions
- Planning construction methods
- Scheduling- BOQ, WBS, Productivities, Sequencing, Milestones, time lines
- Resource planning – Staff, Labour, Materials, P&M, Specialist agencies- Histograms, Mob & Demob
- Billing- Client's, subcontractors'
- Project Financials – Invoicing, costs, cash flow, ROCE, ROI
- Risk planning – Risk matrix, Mitigation / management
- HSE aspects
- QA/ QC aspects

Site Responsibilities



What are the skills required by a planning engineer

Overall Skills:

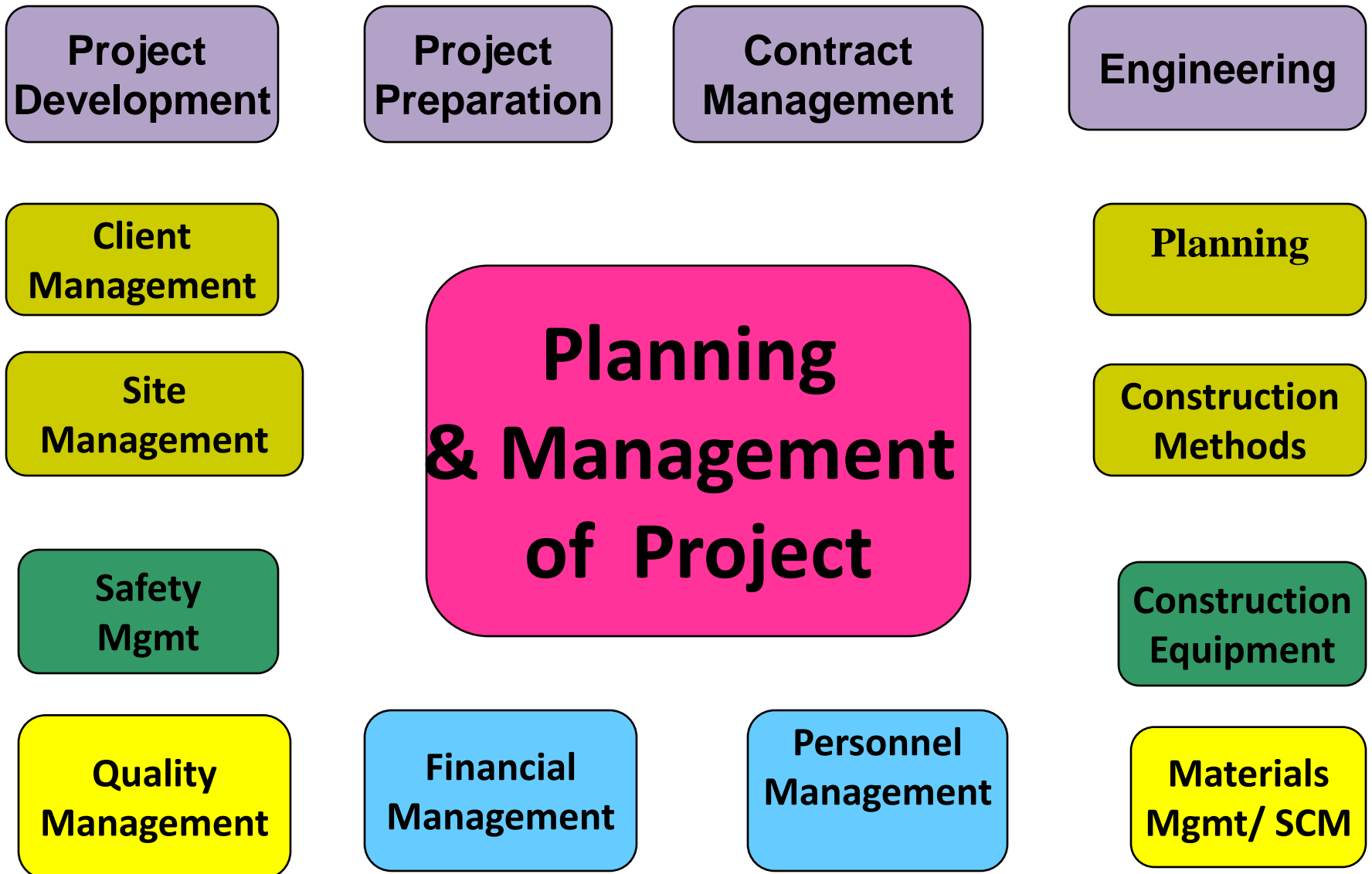
- Technical
- Scheduling
- Managerial – Financial
- – HR
- – Risk
- – Contracts
- To some extent: Administrative, Organisational, Communication, Inter-personal Relations

What are the skills required by a planning engineer

Specifics

- Knowledge of typical construction projects, preferably those similar to the one on hand
- Good appreciation of basic design aspects, construction methods, Scheduling (concepts, software), construction management aspects, construction financials, contract management, Risk management
- Basic knowledge of HSE, QA/QC

Many Dimensions of Project Management & Planning



Discuss any project in which you felt the planning was good and the project was executed smoothly due to good planning

- Construction of a Gas-based power project, as associate to an international contractor went off quite well
- Good Project Manager & Planning Manager team
- Planning Mgr got a good idea of Engineering & Procurement inputs from the external agencies responsible
- Site was able to tie up with good agencies for erection and civil works
- Sequencing for receipt of materials was well planned and synced with the Suppliers
- With good liaisoning with HQ, the major equipment required were also tied up in time
- The Mob & Demob were handled well in good sync with receipt of supplies & construction → less costs

Good planning example (Contd.)

- Overall job was completed in time (slightly less, even after making up for some delays in some supplies); profit was more than initial plan
- Safety record was excellent; Quality: client was very happy
- Overall high level of satisfaction for all stakeholders!
- Key aspects: Good PM, Good synergy between site teams, very good synchronization with design & Supplies; Optimized resources deployment leading to less costs; Risks regarding local labour, rainy season managed well; excellent client management to get approvals & good cash flow; minor claims managed well with good contractual points

Discuss any project in which you felt the planning was poor and the project was impacted due to the poor planning.

A small hydro power project

- Poor contract management
- Poor investigations & choice of construction methods
- Crucial delays in appointment of specialist agencies and planning lead to river work in high flood period leading to losses
- Poor client management
- Poor attention to details
- Initial Mob delays

Overall :20% delays, 40% less profits than planned

What are the factors that should be considered for a good project execution plan (design and constructability, poor quality and safety that may also affect cost and time etc....)

An underground project

- Choice of excellent PM & Planning manager
- Good site appreciation and choice of good construction method
- Good team working, high morale at site (after some initial wrong choices); site get-togethers, etc
- Good choice of construction method, equipment & agencies (after some initial wrong choices)
- Good support from HQ
- Good client management
- Utmost care for Safety and Quality – no rework even under difficult conditions

What is the role of manufacturing concepts such as Lean on construction projects

- Good production-type of management concepts such as Lean can help project management considerably
- Use of systems for various aspects, Production orientation, good collaboration between various teams, collective & inclusive working of all at site, continuous improvement by repeated brainstorming & supportive working, developing innovative mindsets of all site people (staff & labour), etc are part of Lean construction management and can help tremendously.
- Some useful tools: Collaborative Planning System, Work sampling, Value stream improvements)

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