Project Scheduling Planning, Scheduling, and Control

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Planning and Scheduling

- Planning and scheduling are two terms that are often thought of as synonymous.
- Scheduling is just one part of the planning effort.
- Project planning serves as a foundation for several related functions such as cost estimating, scheduling, and project control.
Planning and Scheduling

Project scheduling is the determination of the timing and sequence of operations in the project and their assembly to give the overall completion time.
Planning and Scheduling

Planning is the process of determining how a project will be undertaken. It answers the questions:

- “What” is going to be done,
- “how”,
- “where”,
- By “whom”, and
- “when” (in general terms: start and finish).

Scheduling deals with “when” on a detailed level.
The Plan

The “plan” can take different shapes and have different contents depending on:

- The purpose of the plan
- The timing of the plan (after the concept, after the design, after the selection of the contractor, etc.)
- The level of details needed
The Plan

The plan can include elements that has to do with scope, design and alternate designs, cost, time, finance, land, procurement, operations, etc.
Planning and Scheduling

The Plan

when

Schedule
What is a Project?

A project is a temporary endeavor undertaken to create a unique product, service, or result (PMI, PMBOK)

Types of Management

- General management
- Program management
- Portfolio management
- Project management
- Specialty management
Why Owners Schedule Projects

1. Get an idea on project’s expected finish date
2. Ensure contractor’s proper planning for timely finish
3. Use for cash flow prediction (example 1) (example 2)
4. Use for project control and verification of progress payment requests
5. Use for change orders’ impact (and what-if scenarios)
6. Use to verify contractor’s delay claims
Why Contractors Schedule Projects

1. Ensure ability to meet owner’s requirements
2. Have an efficient work plan / Coordinate with subcontractors
3. Use for cash flow prediction
4. Use for preparation of progress payment requests / project control
5. Use to assess change orders’ impact
6. Use to prove a delay claim
7. Plan material procurement (order, deliver)
The Scheduler.....

Is the “scheduler”:  
- an engineer / architect?  
- a computer whiz?  
- a mathematician?  
- a project / construction manager?  
- an artist? or  
- a communicator?

The Certification: AACEI, PMI-CCP
The Scheduler

The three types of knowledge:

- Knowledge in the principles of scheduling and project control
- Knowledge in the specific technical field
- Knowledge in computer software

Knowledge acquired by education or experience?

- Which type(s) of knowledge is essential?
The Tripod of Good Scheduling System

The Human Factor
The Technology
The Management
Scheduling as Part of Project Management

Project management in construction includes:

- Scheduling / Time Management,
- Cost / Budget Management,
- Risk Management
- Procurement management,
- Change / Scope management,
- Project administration,
- Quality management,
- Safety management,
- Other

They are all interrelated
Cash Flow Example
Cash Flow: In and Out

- **Spending**
- **Reimbursement**
- **Profit**