PS.01

Project Planning: A Great Communicator

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We've all been there … project kickoff pressures push the project to go. With over 30 years of project experience, I believe that the old saying, "plan, plan, plan" is far from being overused, overstated, or overdone. Any project worth pursuing requires the absolute best, and of all the essentials for a successful project (any type, any size), the key is planning.

Planning—only one word, but if I would ask you what it means, I would get a variety of answers. I think that the answers would be with the same focus and general meaning. If I asked the same group how we should carry out the goal of planning, I believe the answers would be varied and achieve different results.

Jacobs Engineering Group prides itself on its development of work procedures that set the standards by which projects are initiated, executed, and closed out. Project planning is one of the key work processes used to organize the execution of a project, regardless of size or phase. The goal of this paper is to illustrate what I believe is an optimum method of project planning.

We call it "interactive planning." It is the facilitated process, in a group forum, of an integrated project schedule, which highlights logic through work processes, defines key constraints, defines key milestones, and last but not least, identifies major issues that may affect the project.

The work process is referred to by the acronym "IAP," for interactive planning session. The IAP is a collective effort by the client and key team members to develop a project execution schedule. The word *interactive* is the key that opens up the communication that allows this concept to be highly effective. See figure 1.

The IAP session's key goals include the following.

- Develop a realistic integrated schedule based on real work process steps and realistic durations. The outcome of IAP provides schedule milestones for the project.
- Facilitate "buy-in" from the project team members. Each team member gets to plan his/her own tasks and comment/interact with the rest of the team, with respect to their needs to achieve their plan. The schedule is not developed independent of the team.
- Define those major issues that have significant impact on the project. These are risk issues and can include a permit, long-duration deliveries, release of funding, or personnel resources (for example, can the client provide the reviews required to keep the project deliverables moving?).

At the end of the session, what are the issues? Who holds the action item? What and where are the schedule risks?

Listed below are what the IAP session concept requires of the participants.

- Commitment: giving your best, and doing what you say you are capable of and committed to make happen.
- Trust: must be willing to say what you believe or state your concerns. State your reasons, knowing that the other participants respect and desire your honesty and concern for the project.
- Knowledge: this planning effort requires the participants to understand the project and the discipline work deliverable process, also referred to as work flow. This requires not only knowledge of interdiscipline work process but also intradiscipline work process that in reality sequence work deliverables.
- Project scope: a subset of knowledge, but the focus is understanding what the project entails, along with the technology, size, complexity, etc.
- Listening: paying attention to the "whole" conversation. You are there to participate. Listening and understanding the discussion is critical, since it may apply to or affect you.

Therefore, you might ask, what does the interactive planning concept provide to the participants.

- Team "buy-in": as the saying goes, it will take a team to create/make a project happen. The team that shares what it knows develops the plan together, and therefore, "buy in" to the plan.
- Open communication: everyone who participates in the IAP has an equal opportunity to share his/her expertise, concerns, and knowledge.
- Respect: all participants share, and their information is given the same importance.

RESPONSIBILITIES

Responsibilities can and will vary based on the phase of the IAP and the participants.

Generally, the project manager will coordinate and define the goals, and establish the who, what, where, when, why, and how issues.

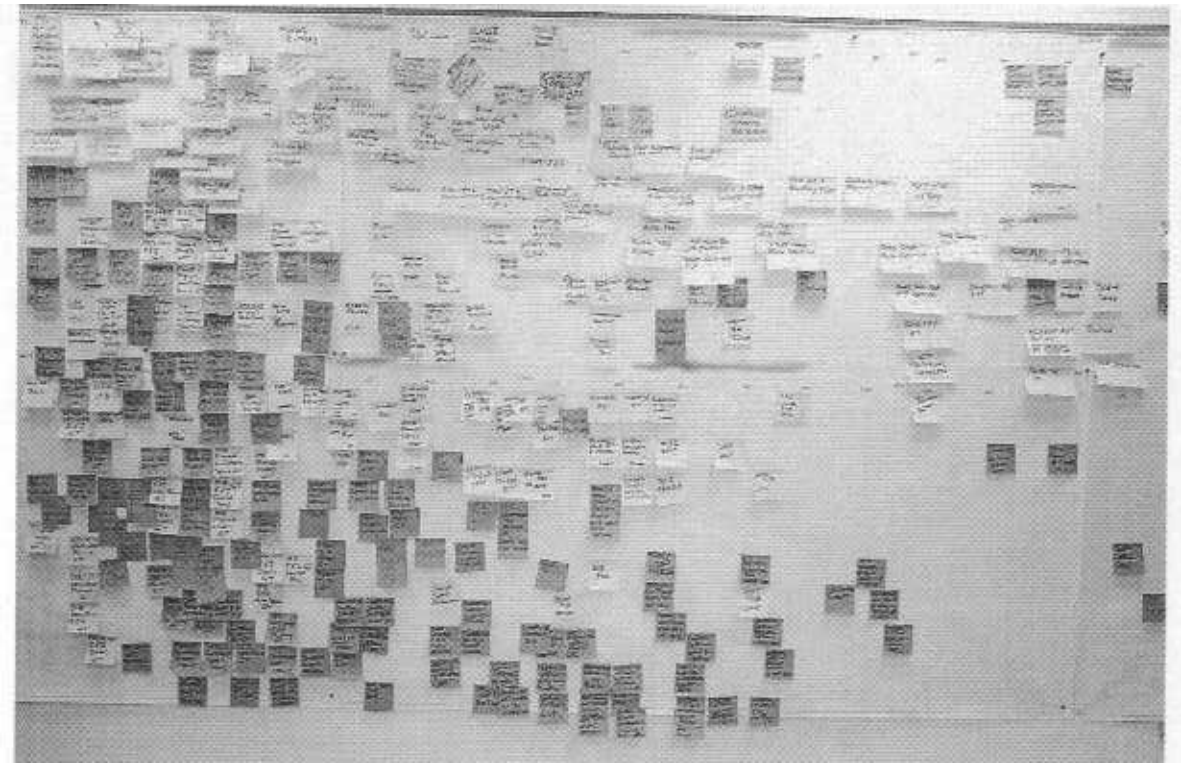

Figure 1

The disciplines bring their expertise to the IAP. They must be prepared and understand the workflow process.

Materials management personnel offer bid/buy cycles/timing as well as fabrication/ship times of major equipment/materials. If there are subcontracts, similar expectations are expected.

The construction manager brings the construction plans and constructability issues to the IAP. Preplanning is essential.

PRE-IAP DELIVERABLES

To support in the preparation of the personnel who will participate, the following deliverables are typical.

Listing of key client milestones that the client has set. These milestones set the initial schedule goals of the project.

The rough plot plan (general arrangement) includes area designators, if applicable. What is the footprint? This provides an initial picture of project size, complexity, large equipment placement, and schedule sequencing concepts.

The scope definition concerns what the project is all about … capacity? Location? Is it a greenfield project? Retrofit?

PFD/P&ID counts and status: this is critical to understand up front. PFD and P&ID status are knowing what levels are complete or have to be completed and the approval cycles (engineer and client). As process will drive the project, the status (scope) and timing are critical before entering the IAP

The equipment list should include sizing and weights, especially on the large pieces.

The subcontracting plan is a listing of potential subcontracts; scope is an absolute. Knowing how engineering and procurement must support construction helps in the preplanning thinking.

The deliverables must support the goal of the IAP. Remember, an IAP session may be used to plan a study, in the preliminary engineering phase, or during construction. As such, set the deliverables to meet the function. The key is to determine if the deliverables bring out the participant's expertise in the IAP meeting. See figure 2.

IAP SESSION

The IAP session is itself a "mini-project." As such, I cannot emphasize enough that the degree of planning and communication that is put into the IAP follows the old cliché, "good planning followed by good communication" means a great IAP outcome. The IAP session is made up of three major phases, the pre-interactive phase, the IAP session itself, and post IAP activities.

THE PRE-INTERACTIVE PHASE

The project manager, the project controls manager, and the planner scheduler plan the IAP session.

Define the length of the overall schedule and the divisions (weeks, months, etc.). This sets the outline to print the IAP work schedule. The sequence of the presentations by each discipline are usually organized from the top down. See figure 3.

Define the scope of the IAP. Is this only a study? Is this preliminary engineering? Is this only engineering and procurement? Or is this a full engineering/procurement/construction approach?

Ensure that the deliverables are provided to the IAP participants. This information should be handed out a few days before

INTERACTIVE PLANNING
MINIMUM INFORMATION REQUIRED CHECKLIST
(Typical – Not Inclusive)

PROJECT MANAGEMENT / CLIENT:

- Type of Project (New-Retrofit)
- Execution Plan (Outline)
- Scope of the Project
- Client Schedule Milestones
- Turnaround(s) Required
- Outage(s) Planned
- Estimating Requirements
- AFE Approval Dates

PROCESS:

- PFDs – Number and Status
- P&IDs – Number and Status
- Process Design Basis – Overview

EQUIPMENT (Plant):

- Number of Services – by name
- Weight and Size Criteria – large pieces

DISCIPLINE DELIVERABLES:

- Plot Plans
- Building Sketches
- Soils Information
- Energy Sources (Electrical, etc.)

PROCUREMENT:

- Long Lead Items – Fabrication/Ship Durations
- Special Handling – Shipping Issues
- Overseas Issues
- Fabrication Strategy

CONSTRUCTION:

- Direct Hire
- Construction Lump Sum
- Subcontracting Plan (Number & Scope)
- Construction Management Issues
- Craft Availability
- Construction Equipment – Size/Space
- Access (in and out of site)
- Laydown Issues

Outages – Turnaround Impacts

Exhibit B

Figure 2


Interactive Planning Session Results
START PILING CONSTRUCTION 5-1-99
CIVIL/FDN. CONTRACT FOR BID. 90%
LEGEND
CONSTRUCTION
PROCESS
MECHANICAL
VESSELS
Issue Civil/STR Design Criteria
Review Client STD's Specs
Issue Civil/STR Spec's
Issue Bid Tab C-300 Compressor
Issue Purchase Order for Residual Gas Compressor C-348
H-X

Figure 3

the session to allow personnel time to review, discuss, and think through the IAP needs.

Each discipline group will receive a specific colored sticky note pad to write out their planning activities. Having a specific color for a discipline allows chart visibility as discipline schedules are developed.

Has the project manager discussed the goals and expectations with the client? This is critical so that client personnel can readily be a part of the session and participate fully in the IAP. The client also has a particular colored sticky pad for client-related activities that affect the schedule.

THE IAP—GUIDELINES TO SUCCESS

The IAP will only be as good/informative as the issues are discussed. Therefore, one discussion at a time (no sidebars). If everyone is listening to the discussion, the focus is better, and the level of interaction goes up.

Make sure the IAP session fully identifies the client's needs.

- Document review/approval times.
- Outage plans (when and length).
- Tie-in issues (type and length of time).

Keep in mind holiday schedules, especially if critical schedule deliverables and/or activities happen in and around them.

Do not linger on one issue! Remember, there is a time limit to establish the IAP.

You can go back and revisit a discipline or group if information now presented can cause impacts.

- Maintain an action item list and a critical issues list.

POST-IAP ACTIVITIES

Now that the IAP is completed, there are some actions to be taken. The IAP is used by the planner/scheduler to develop the project schedule. The IAP provides the basis for a level II scheduling effort leading to the level III schedule.

Issue the action item list and IAP notes (especially the critical issues list). Determine if a short revisit to the IAP schedule is needed to resolve open issues.

Now that we have an understanding of the concepts for the IAP, let's discuss the approach to how to actually run the IAP. A format for the wall chart is shown in figure 3. The time scale has been set per the client's goals, and the format on the left edge is set to direct the flow of the discussion.

The work sequence, better known as the workflow process, is the key. As the IAP can be applied to any phase of the project, the focus and needs are different for each phase. In all cases keep in mind the work process. Remember, left to right planning is a must.

While this discussion has focused on industrial projects, in essence the IAP session can be applied to any type of industry/project/phase/size. Identify the scope, identify the deliverables that provide definition, and set up the strategy in which the IAP will be sequenced. Then do it!

The interactive planning session as a planning tool is not a one-time occurrence. Projects usually have phases. Therefore, it is recommended that there is an IAP for each phase. This step procedure allows the project team to take the knowledge from the phase they are in and apply this learning in the preceding IAP to redefine the project schedule.

So, if you are planning for success, stop and plan! Set up your IAP, bring the team together, learn from each other's knowledge, and set the team's plans. Success follows team commitment.

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