INTERACTIVE PLANNING

Bridging the GAPS between FEP & Execution

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/S & B Engineers and Constructors, Ltd.

4-A’s of SAFETY

1. ACCEPT
2. ASSESS
3. ADDRESS
4. ABORT
INTERACTIVE PLANNING

BRIDGING THE GAPS in FRONT END PLANNING & EXECUTION

0. Feasibility
1. Concept
2. Detailed Scope
3. Design and Construction

FEP1
FEP2
FEP3

FB&D Guide to validate the execution plan
For the NEXT PHASE and reach stakeholder alignment on team commitments
to achieve project success.

TEAMBUILDING & ALIGNMENT

USING INTERACTIVE PLANNING as Structured Process
to hand off a Project from One Phase to the Next

All Stakeholders in the same room talking about how to execute the project

NO SILLY GAMES
OUTLINE

• Introduction to Interactive Planning
• Benefits – Why is this important
• Focus on Inputs
• When to Conduct BRIDGING THE GAPS
• Methodology

Definitions

• INTERACTIVE:
  – involving the communication or collaboration of people or things
  – mutually or reciprocally active

OBJECTIVE: Get the key stakeholders ENGAGED and talking to each other in the PLANNING activities
Definition: Plan

plan

- A scheme, program or method worked out beforehand for the accomplishment of an objective; a plan of attack
- A proposed or tentative project or course of action.
- A systematic arrangement of elements or import parts; a configuration or outline.
- Use the preliminary Project Execution Plan

Planned, Planning

- To formulate a scheme or program for the accomplishment, enactment, or attainment of a plan
- To have as a specific aim or purpose
- To draw or make graphic representation of

Interactive Planning Definition

An interactive team approach that engages ALL key Stakeholders in the development and sequence of critical events and activities that must occur to best accomplish the project and business objectives.
The activity of PLANNING is more important than the PLAN it produces. ALL stakeholder must have have a part in its formulation.

Mike Tyson on Planning

“Everybody’s got Plans ... Until they get hit.”
WHEN? Ensure we have enough definition to plan critical activities for the next phase.

At the handoff between FEP2 & FEP3
- Start of FEP2
- Approximately halfway through FEP3 to Validate Execution Plan
- May want to REVISIT original plan

Detailed Engineering & Construction
Design and Construction
Detailed Scope
Concept
Feasibility
FEP1
FEP2
FEP3

HAND OFF FEP1 to FEP2
New Team Members
Business to Process Selection

Business/Operations handoff to Process and Specialists
Develop Alternatives and Select the option that best meets the business objectives

Feasibility
Concept
FEP1
FEP2
1-1.5% TIC
FEP 2 Stage Gate Process
Alternative Selection

<table>
<thead>
<tr>
<th>Primary Goals</th>
<th>Objectives</th>
<th>Deliverables</th>
<th>Estimate Quality</th>
</tr>
</thead>
</table>
| Select the preferred process and technology options | - Identify alternatives  
- Define functional scope  
- Initiate project execution planning  
- Reduce uncertainties/risks  
- Identify preferred alternative(s)  
- Test against business objectives  
- Plan for next phase | - Process Design Basis  
- Process Technology Selection  
- PFD’s, P&ID’s, Plot Plans  
- Preliminary Equipment List  
- Key Infrastructure Definition  
- Permitting Plan  
- Project Execution Strategy  
- Tech Assurance Strategy  
- Procurement Strategy  
- Project Controls Plan  
- Equipment Factored Estimate  
- Project Schd  
- Best Practice Plan | +/- 30% Estimate |

Review of Deliverables List

**YPO Training | How to Schedule a Project**

<table>
<thead>
<tr>
<th>Discipline</th>
<th>PSL 2 “Project Selection” Deliverables</th>
<th>Duration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
<td>Process Flow Diagrams (PFDs)</td>
<td>2</td>
<td>Overview drawings to show the process function</td>
</tr>
<tr>
<td>Process</td>
<td>Piping &amp; Instrument Diagrams (P&amp;ID’s)</td>
<td>4</td>
<td>More detailed version of PFD (Conceptual)</td>
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<tr>
<td>Civil/Structural</td>
<td>Soil and Hydrology Data</td>
<td>2</td>
<td>Any Geological report providing information to CSA for foundation design</td>
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<tr>
<td>Civil/Structural</td>
<td>Steel &amp; Foundation Single Schematics</td>
<td>2</td>
<td>Schematics used for estimate</td>
</tr>
<tr>
<td>Piping</td>
<td>Site Plan</td>
<td>2</td>
<td>General layout of surrounding area</td>
</tr>
<tr>
<td>Piping</td>
<td>Plot Plan</td>
<td>2</td>
<td>General layout of equipment</td>
</tr>
<tr>
<td>Piping</td>
<td>Piping Isometric</td>
<td>2</td>
<td>Schedules of equipment along with process data for budgetary quotes</td>
</tr>
<tr>
<td>Mechanical</td>
<td>Equipment List</td>
<td>2</td>
<td>Provides list of equipment along with process data for budgetary quotes</td>
</tr>
<tr>
<td>Instrument/Electrical</td>
<td>Cable/equipment schedule</td>
<td>2</td>
<td>Includes showing different wiring classifications around equipment</td>
</tr>
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<td>Instrument/Electrical</td>
<td>Area Class Engineering</td>
<td>2</td>
<td>Early equipment pricing (Typically +/- 30%)</td>
</tr>
<tr>
<td>Construction</td>
<td>Construction Support of Estimate</td>
<td>4</td>
<td>Construction provides deliverability support as well as input to estimating</td>
</tr>
<tr>
<td>Estimating</td>
<td>Class 3 Estimate</td>
<td>2</td>
<td>Estimating produces a +/- 10% TIC cost</td>
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**DEVELOP A PLAN TO PRODUCE THE REQUIRED DELIVERABLES**
HAND OFF FEP2 to FEP3

New Team Members
Business & Process Selection to Execution Planners & Scope Definers

All Discipline Engineering Leads
Project Management Team
Operations, Maintenance, Subject Matter Experts, Procurement & Construction

AGENDA

SAFETY TOPIC  QUALITY TOPIC
• Facility Information
• Introductions – Capture Expectations
• Overview of Agenda
• Ground Rules – How to behave and contribute
• Business Drivers
• Process Overview
• Introduction to Interactive Planning
• Begin the process
FEP 3 Stage Gate Process

**Primary Goals**

- Complete Scope Definition to ensure Project:
  1. Will Meet Business Objectives
  2. Can be executed with a degree of certainty.

**Objectives**

- Fully define scope, cost and schedule
- Develop detailed execution plan
- Generate risk-weighted estimate and economic strategy
- Test against business objectives

**Deliverables**

- P&D's, UFD's
- One-lines, Area Class
- MOC
- Equipment List
- General Arrangement
- Soils Investigation
- Piping Line List, Tie-in List
- Instrument Index
- Constructability Program
- Project Specifications
- Permit Submittal
- Detailed Est/Cash Flow
- Integrated EPC-ESD Schedule
- Funding AFE/Resource Plan
- Benchmark Assessment

**Estimate Quality**

+/- 10% Estimate

Review of Deliverables List

**YP Training | How to Schedule a Project**

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**DEVELOP A PLAN TO PRODUCE THE REQUIRED DELIVERABLES**
**Ground Rules**

- Active Participation
- One person talk at a time
- Challenge Assumptions
- Voice Concerns
- Look for a better way
- Ask for Clarification
- HELP TO STAY ON TRACK
- Turn off Cell Phones TURN to STUN!!!!!!
- Timely breaks
- Treat others with respect
- Have Fun!

**EXPECTATIONS**

Encourage Stakeholders to talk about THEIR EXPECTATIONS

**Quality:** Meeting the Customer requirements and EXPECTATIONS

Managing Expectations....
A balancing act?
HAND OFF FEP2 to FEP3

BUSINESS DRIVERS
• Why are we doing this project?
• Why is it important?
• What is the dollar impact to Bottom Line?
• Cost, Schedule or Performance (Pick 2)

PROCESS OVERVIEW:
• What are we trying to achieve?
• What are the hazards?
• Potential Barriers
• Risk Identification

PLOT PLAN w/WBS
• Physical Areas
• Phases (preTA, TA, Post TA)
• WBS structures

PROCUREMENT:
• Must have orders identified
• Identify Process/Project Critical Items
• Early/FEP purchases
• Strategy Defined for Each order
  • Sole Source, Comp Bid, MSA
• Procurement Milestone Planning Defined
• Contracting Strategy Defined

RISK REGISTER
Capture Risks as identified.
**Procurement Milestones**

**SAFETY TOPIC**
- Facility Information
- Ground Rules – How to behave and contribute
- Review Project Objectives and Drivers for Alignment
- Introduction to Interactive Planning
- Begin the process

**QUALITY TOPIC**
- Introductions Roles – Capture Expectations
- Overview of Agenda
- Review Project Objectives and Drivers for Alignment
- Introduction to Interactive Planning

**CAPTURE:**
- Expectations
- Risks
- Concerns
- Action Items

**Briefly Explain the Plot Plan**
- NEVER BRING A CLIENT TO AN EMPTY PLAN
- Disciplines should develop straw man plan BEFORE session.
- May want to start BACKWARD PLANNING with Construction.
- See if the Engineering Plan will work – Rarely does!!!!!
VALIDATE & ALIGN ON PROJECT EXECUTION PLAN

Approximately halfway point
Of FEP 3 team should have:
1. IFA P&ID’s
2. Approved Plot Plan/EQUIP Locations
3. Procurement Execution Plan
4. Contracting Strategy
5. The ...abilities
   • Constructability
   • Operability
   • Maintainability
6. Project Execution Plan:
   • Work Breakdown/Work PKG
   • Sequence
   • Pre-turn Around
   • Turn Around
   • Post
   • Early Tie-Ins
   • Rack Run Pipe

WARNING
INPUTS MUST BE DEFINED for INTERACTIVE TO BE SUCCESSFUL

FOCUS ON INPUTS

MANAGE THE INPUTS

NOT the OUTPUTS
VALIDATE STRATEGIES

THIS IS THE TIME TO VALIDATE THE PROCUREMENT AND CONTRACTING STRATEGIES.

Will the vendor data be here to support design? Do we have time to develop the bid packages for each contract? Will the steel/pipeline be fabricated to support the field plan?

FEP2-FEP3 P&ID Management & Approval Process, Real TAG Numbers, Field Survey, Conceptual Models, Early Procurement, TA's Permits, etc.

BASIS of PROJECT PLANNING & CONTROLS

GATED PROJECT DELIVERY SYSTEM

FEP2 FEP3

ESTIMATE TOOLS:
- I CARUS Kbase
- FB&D Proprietary System
- 3D Conceptual Models (BIM)

EXECUTE

Manage Change

Plan

Progress

Forecast

Cost/Schedule

OBJECTIVE:
1. Predictable Projects
   - On Time
   - On Budget
   - Achieve Business Objectives
2. Control Change
3. Accurate Forecasting

INTERACTIVE PLANNING SESSIONS

FEP2 to FEP3 & Approx Mid FEP 3

SCHEDULE TOOLS
- Primavera
- Microsoft Project
- Big Chief Tablets & Nbr 2 Pencils

IPIMS
- Cost Control
- Change Management
- Cash Flow Projection Curves
- Staffing Curves
- Forecast to Complete
THIS IS WHAT IT LOOKS LIKE

LEADS need to Work Together

Team Members working together to develop THEIR PLAN
WORK FLOW PROCESS

USE A TRAINED FACILITATOR

PreMeeting Activities
- Identify Stakeholders
  - Interview to get concerns
  - Identify Key Activities
- Capture Needs & Expectations
- Define Scope of Work
- Preliminary understanding of:
  - Sequencing
  - Work Breakdown Structure
  - Work Packaging

FACILITATOR ROLE:
1. Organize and Set Up Process.
2. Ensure INPUTS are ready
3. Kick off the session.
4. Explain expectations.
5. Keep the disciplines talking

Set Up Rehearsal
- Set Up the Room
  - Create a Starter set w/Mgmt Team
  - Use best guess
  - Denote hrs/Quantities if available
  - Fill out key activities on colored Post-It notes or cards
  - IFC Steel Dwgs
  - Start Fab
  - End Fab
  - Start Erection

Interactive Planning Session
- Conduct the Session
  - Capture Critical Issues
  - Identify Potential Problems
  - Develop an Action Item List
  - Capture a Parking Lot for items to address later
  - Appoint a NOTE Taker
  - Key Activities on time line
  - Critical Issues Listing
  - Potential Problems
  - Action/Risk Items
  - Meeting Notes
  - A Plan that can be used to Create an execution Schedule.

FOLLOW UP!!!!!!

OUTPUTS

Set Up
- Management Owner/Contractors
- Operations
- Maintenance
- Construction
- Critical Suppliers
- Key Subcontractors
- Planner/Schedulers

Suggested Attendees:
- Management Owner/Contractors
- Operations
- Maintenance
- Construction
- Critical Suppliers
- Key Subcontractors
- Planner/Schedulers

DO NOT MAKE THE TEAM START WITH A BLANK WALL.
Make sure there is a starter set With known key activities in place.
Very important not to WASTE the Client's time. Basic plan elements Should be in place BEFORE the Client enters the room.

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SET UP

- Place a Calendar on the wall.
- Identify CRITICAL Milestones
Level of Detail

ONLY identify milestones required to capture the key elements. Scheduler can fill in all the remaining steps later.

**Purchasing Each MAJOR Order**

**Design**

**Fabrication**

**Construction**

**METHODOLOGY**

- Create a calendar on the WALL.
- May draw horizontal lines to designate Work Breakdown Structures
- Start with a BACKWARD PLAN and work to the Front.
- Write Key Activities for each discipline on Colored Sticky Notes
- Use different colors to distinguish discipline activities.
- Pre-post key activities before the CLIENT team members assemble.
- Each discipline to explain their activities and needs.
- Allow other team members to challenge.

**LEARNING:** It is very difficult for disciplines or clients to visualize the entire schedule on multiple screens or pages. They need to see the entire plan on the wall to ensure buy-in.
WHEN COMPLETE

• Review Expectations and the Plan
• Secure Team Commitment to meeting milestones.
• Have enough detail to develop a level 3 schedule.
• Paste IAP Chart on Wall where visible.
• Monitor progress.

OUTPUT

• All stakeholders see the same picture
• Everyone has a chance to challenge

CONSENSUS
ALIGNMENT
Common Understanding
ALL have a Common
PICTURE of the plan
Scheduler has a base to work with
This is What you want to see
Team Members INTERACTING

WE DID IT!

Q & A!