

Propose, Align, Schedule & Implement ¹

By Anil Seth

While the individual man is an insoluble puzzle, in the aggregate he becomes a mathematical certainty. You can, for example, never foretell what any one man will be up to, but you can say with precision what an average number will be up to. Individuals vary, but percentages remain constant. So says the statistician.

~Arthur Conan Doyle

The old saying for any task management is right person at right time at right place. This concept is getting to modify now with an addition “*in right format*”. Before we move to the game of formats, there must be a golden rule of:

Propose, Align, Schedule & Implement (...through right formats)

Phases	Propose	Align	Schedule	Implement	\sum Total T	Weightage W	i(T+W)	%age <small>$\frac{i(T+W)}{\sum i}$ Total%</small>
Operate	0	0	0	0	0	64	64	34
EPC	0	0	0	1	1	32	33	18
FEED	0	1	2	2	5	16	21	11
Feasibility	1	2	3	3	9	8	17	9
Prefeasibility	2	3	4	4	13	4	17	9
Conceptual	3	4	4	4	15	2	17	9
Plan	4	4	4	4	16	1	17	9

M2P3 rule $[\frac{i(T+W)}{\sum i} \text{ Total}\%]$

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This four-step rule becomes tougher by phases when the project is reviewed backwards i.e., FEL3 to FEL 2 to FEL1 or EPC to FEED to Feasibility Study.

Rules:

- Zero is taken as requirement of execution. (Must)
- One is taken as certainty of execution. (Mostly)
- Two is taken for partial implementation. (Partial)
- Three is taken as an approach. (Possible)
- Four is taken as not Implemented. (Probable)

This hypothesis is generally seen as M2P3 which is riding on a 16-point summation and requirements while executing the projects approaches zero.

Let's use and evaluate the importance of M2P3.

In one of my proposals a peculiar scope was observed, the scope was having some requirements from Prefeasibility (20%), mostly feasibility (50%) and certain needs for FEED (30%) deliverables. The Tender requirement included elements typically performed in FEED i.e., 3D model development, HAZOP and EPC Tender preparation. Overall scope of work for the Tender had both Lumpsum and Reimbursable scope elements. The challenge was to quantify the efforts where there is no historical data to provide the certainty of the estimate. In absence of any historical data, an excel based tool was developed to provide the comparison of ITB deliverables requirement with AACE deliverables and FEED deliverables. The effort rationale which was developed is having an integration of AACE and FEED deliverables approach.

Effort Rationale for FEED type deliverables:

ABCED MDR Reference	Del. Title	FEED Stage	Deliverable Standard	ABCED MDR	S.No.	Discipline	Deliverables in FEED	Licenseor is selected. This is FEL3 Ref. ABCED MDR	Deliverable as stated in FEED	Execution expectation in FEED deliverables of Pursuit	Pursuit Deliverables	Contractor Note 2.3	Company Note 12.4	Remark
655	FIRE PROTECTION DESIGN BASIS	IFD	IFD											
655	TERMS OF REFERENCE FOR HAZOP REVIEW	IFD	IFD											
655	HAZOP DESIGN PROCEEDING	IFD	IFD											
655	SITE HSE PLAN	IFD	IFD											
655	SA ASSESSMENT PROCEDURE	IFD	IFD											
655	HAZOP PROCEDURE	IFD	IFD											
655	HAZOP REPORT	IFD	IFD											
655	FIRE WATER SYSTEM FLOW DIAGRAM	IFD	IFD											
655	FIRE WATER SYSTEM AND ID - AREA B1	IFD	IFD											
655	HAZOP REPORT FOR EOD	IFD	IFD											
655	HAZOP REPORT FOR PROPYLENE GLYCOL	IFD	IFD											
655	HAZOP REPORT FOR POLYETHER POLYOLS	IFD	IFD											
655	HAZOP REPORT FOR COMBINE	IFD	IFD											
655	HAZOP REPORT FOR PROPYLENE GLYCOL	IFD	IFD											
655	HAZOP REPORT FOR EOD	IFD	IFD											
655	SA ASSESSMENT REPORT FOR PROPYLENE GLYCOL	IFD	IFD											
655	SA ASSESSMENT REPORT FOR POLYETHER POLYOLS	IFD	IFD											
655	SA ASSESSMENT REPORT FOR COMBINE	IFD	IFD											
655	SA ASSESSMENT REPORT FOR PROPYLENE GLYCOL	IFD	IFD											
655	FIRE WATER LAYOUT FOR ETHYLENE RECOVERY UNIT	IFD	IFD											
655	FIRE WATER LAYOUT FOR EOD	IFD	IFD											
655	FIRE WATER LAYOUT FOR PROPYLENE GLYCOL	IFD	IFD											
655	FIRE WATER LAYOUT FOR POLYETHER POLYOLS	IFD	IFD											
655	FIRE WATER LAYOUT FOR PROPYLENE GLYCOL	IFD	IFD											
655	FIRE WATER LAYOUT FOR B2 AREA	IFD	IFD											
655	FIRE WATER LAYOUT FOR B1 AREA	IFD	IFD											
655	FIRE AND GAS DETECTION LAYOUT FOR ETHYLENE RECOVERY UNIT	IFD	IFD											

The Workbook

To investigate the requirement, a detailed procedure was prepared borrowing strategy from PreFEED and FEED projects. The workbook shown above is the structured outcome of the analysis. Following guidelines were used to develop the workbook:

1. For deliverable status (IFD/IFI) comparison is done with ABCD Project
2. Document working equivalent to Fel3 is in green, weightages:
 - ✓ base for FEL3 is 10,
 - ✓ judgement correction factor applied as per deliverables *availability* status, e.g.:
 - ↗ PFDs are already checked during DFR & requires only standardization, factor is 40%
 - ↗ deliverables continuing in next stage(e.g., Hazop , etc.), factor is 50%
3. Document working of PreFEED is in orange, weightages:
 - ✓ base is 4 (40% of FEL3),
 - ✓ judgement correction factor is applied as per scope, e.g.:
 - ↗ markup approach, factor is ~50%
 - ↗ Developing & drafting approach, factor is ~70%
4. Document not to be generated is in white, weightage 0
5. P&ID,PFD, Equipment Count are as per Process .“Assumed “values are indicated separately in the workbook: layouts, datasheet etc.

This approach yielded following result, needless to state the basis was backed with all type of executed data.

Items	Pursuit Expected Deliverables	Deliverable not produced in PreFEED/DFR Ref.: FEL2 MDR	Pursuit deliverables approach wrt FEED type deliverables Ref.: ABCD-FEL3 MDR
Set	181(set)	97(Set)	2476(Total)
Total	2476(total)	54%	37%

The results of pursuit

We in Project Management always believe in sharing the resources. This excel based predictive file can be mailed to the user on request (anil.seth@fluor.com OR anilshivani99@gmail.com) with an expectation that the estimator will be return with at least one modification suggestion.

Let us go back to M2P3 guideline, this workbook and approach will be addressed in some other paper. Till feasibility stage, the effort on implementation is less, this can be understood that by the value 9 appearing in column %age. This is constant and hence we can say that certainty of implementation of Project starts from FEED. Hence, we are listing this decision under “No Implementation”.

Phases	\sum Total T	Weightage W	i(T+W)	% age $\frac{i(T+W)}{\sum Total}$	Decision	% of % age
Operate	0	64	64	34	Operation	100%
EPC	1	32	33	18	Execute	52%
FEED	5	16	21	11	Implementation Possible	33%
Feasibility	9	8	17	9	No Implementation	27%
Prefeasibility	13	4	17	9	No Implementation	27%
Conceptual	15	2	17	9	No Implementation	27%
Plan	16	1	17	9	No Implementation	27%

M2P3 Guideline

Nowadays, the possibility of decision to implement is doubtful even at FEED stage, due to investment decisions getting shelved on returns or rapid change in technology, the COVID scenario, etc. is guiding Clients to explore the possibility of investing in EPC stage only. To understand this, look at the difference between FEED and EPC, the gap is around 19% (52-33). Now observe the movement from EPC to Operate, the gap is around 48%. The 19% gap indicates that the strategy of execution is drifting from lumpsum EPC

to either EPCM or LEPC Lumpsum and hence we are listing this decision under “Implementation Possible”. What about 48%?

This gap is large and is more than 19%, which means for bigger programme (TIC >2 bn USD), there is a possibility that even strategy like L-EPC or any front investment may not work....this means”?

This means, the execution strategy for such programme is going to be EPCM or Client driven conventional approach. And even in conventional approach, the PMC will be Owner’s representative.

It seems the project execution style prediction from 2021 onwards will be “an Owner’s driven execution approach” wherein the consultants and the vendors will be partners and the site contractor will execute under lumpsum with material being free issue from Client.

This 19% will be for Material estimation or in short lean FEED driven towards quantities certainty and 48% will be strategy execution driven towards execution-controlled investment. You must be observing Clients suggesting overlap in FEED and EPC schedule or novating or structuring free issue strategy in FEED. Focus on Automation driven approach during feasibility study to have self-control during execution.

Many of us are executing both Domestic as well as International Projects. There are numerous formats followed at various stages of project which may not differ in these Projects approach. From general perspective some of the areas are redrafted and detailed. One of the approaches I remember was heat map, the approach is very effective and like traffic light. This is a single page running record which is a dashboard for management review and recommendations.

In one of my papers, I remember referring to... *The simple rule of any mid-way management project is to take current stock of the situation. This does not mean start questioning the handing over team “why certain activities are not done or why documents are of bad quality...* In my opinion thousands of formats are generated every month and used effectively throughout the project lifecycle and there is no single site which shares these as freeware, the more we circulate and standardize ,more effective and efficient we the Engineering Managers will be.

About the Author



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Mr. Anil Seth is working as Project Manager in Fluor's Indian office at Gurugram. Fluor Daniel India Private Limited (Fluor India) provides a full range of engineering, design, procurement, and construction management services to Indian and overseas clients. Fluor India is an established quality provider of engineering, procurement, construction management (EPC) and project management services for Fluor's energy and chemicals, power, mining, and industrial projects, and is a key support office for Fluor facilities located in North America, Africa, the Middle East, Europe, and Asia Pacific

Earlier to Fluor, was in Larsen & Toubro Ltd. at Faridabad, India and managing the Project Engineering Manager Portfolio for hydrocarbon projects. Before joining Larsen & Toubro Engineering and construction division he has worked for Indian Petrochemicals Corporation Limited (now part of Reliance Industries)

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