A Study of Private Sector’s Systematic Approach to Bid and Estimating Lifecycle Cost (LCC) of Military Products in India.

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Abstract

Lifecycle Management (LCM) in defence industry is a very critical & complicated key process. This is specifically mandated in the operational framework defined by Governments at proposal stage itself. The recommendations of this paper promote the application of best practices and facilitates continuous improvement for estimation during bidding process across the organization. This also provides a sustainable framework to build a winning strategy for participating in defence projects tenders.

The management of a cost estimate should be carried out on an iterative cycle since data becomes more mature over the course of the Project Lifecycle. This is where it is required to 'refresh' the estimate with actual data to reflect any changes in the Project opportunities.

This research also reflects the scope of cost estimating tasks carried out within the business and covers the total Lifecycle from Review gate level 1 to ReviewGate level 10B. When viewed from the perspective of a specific project context, the proposed recommendations defined in this study paper should be tailored to match the genuine needs of a solution and needs of specific Project characteristics.

As recent estimate, India’s defence spending is expected to swell to USD620 billion(Rs39 lakh crore) by year 2022. Currently 60% of defence related requirements are met by imports from other countries which offers a huge opportunity for its substitution. India’s objective is to create conditions which are conducive for private industry in indigenization and broadening the defence Research and Development (R&D) base of the country. More than 6000 small and medium organizations are ready to take part in this development and have enrolled to be the manufacturer of defence equipment and spare parts.

The principal purpose of this document is to propose systematic approach and define various review gates to enable organizations to take correct & calculated decisions on any project opportunity. Additionally, a detail framework is proposed to generate and maintain agreed Cost Estimates within the wider Business context.

Key words: Life cycle management in Defence, Cost Estimation, Defence Projects, Bidding stage review in defence.
Introduction

An organization performance is dependent upon the successful winning and execution of the projects. The application of Lifecycle Management with appropriate tailoring is critical to the capabilities of business to deliver projects on time, within projected cost and to meet external and internal customer commitments.

The defence industry of India is a strategically important sector with over 1.3 million personnel. It is world's 3rd largest military force and is world major importer of Defence products. This industry in India is equivalent to about 15% of world’s arms market.

The ruling government took major steps to pave the way for “Make in India” movement and reforms. To bring ease of doing business in India, the first step was to do away with licensing for nearly 80% of defence items. Foreign Direct Investment in this core sector allows to increase up to 74% and in some special cases up to 100% with prior approval of government, if the critical technology being brought in it is needed by India. Third decision was to bring public sector at par with private player by removing all subsidies and exchange rate variation protections. Finally, Defence Procurement Policy “DPP” 2017 prioritized indigenously designed, developed and manufactured items under preferred category.

Literature review suggest that limited documents are available for improving cost estimation and bidding process in defence field. The existing work by researchers is most of time focusing on India’s defence budget approvals & its administrative management only. It is required to do a detail study to build commercial competency in private sector to define structured approach of handling these defence projects.

Objective

I. To suggest systematic reviews gates model while exploring opportunities in Defence sector in India.

II. To improve the quality of cost estimates and Life cycle management by taking informed management decision before entering this strategic sector.

Research Methodology

This is an Applied Research whereby objective is to address practical problem of defence sector in identifying effective bidding & cost estimation model to calculate life cycle cost for Indian defence environment. The present study has used mainly secondary data which has been collected from the various sources like textbooks, articles in newspapers and magazines, books review, scholarly journals and commentary. Further interviews with Indian defence industry specialists have been done to formulate most practical approach towards setting up different gate reviews, decision making process and fundamentals of cost estimations procedures. Indian environment and government policies been referred while proposing the solution to remain agile and cost effective while participating in defence projects.
This interactive paper design with various critical question format to put the context.

Why do we need to decide before bidding and estimate cost?

The ability to generate reliable cost estimates is critical for Companies to execute its business needs and to take calculated decisions. Without this ability, the Company is at risk of experiencing cost overruns, missed deadlines and performance shortfalls, if under estimating. Whereas an overestimate could lead to loss of future orders since become too expensive, with poor business planning creating high overheads and over recruitment. This can have a major impact on the Company's reputation and shareholder value.

However, generally defence products sales are to Governments and their armed forces. Each Customer has a preferred process for requesting proposals from suppliers via either a competitive or noncompetitive route.

Structure bidding process and efficient cost estimate planning provide the business with a sound basis to:

- **Plan its Workload & critical Resources**: This focuses task understanding, sets expectations, defines affordability constraints, and aids the assessment of supplier/sub-contractor strategy.

- **Submit Robust Proposals**: This is carried out against the backdrop of ensuring realistic plans, baselines, resources, schedule and risks and opportunities are all captured in an appropriate manner.

- **Win Business**: Study proposed that, defence organizations need to maintain its competitiveness and undertake Bid / No Bid (to get work at the right price) decisions to achieve this, it should not take on work without understanding the potential margins. In support of business case development, they need to take account of 'Price to Win' information in pricing and establishing of estimating cost targets.

- **Undertake Contract Reviews**: Organizations do carry out these reviews to enable tracking of progress through to Contract Closure. To support this activity accurate Estimates to Completion and Estimates at Completion are of importance.

A well-documented planned approach to evaluate any bid or project opportunity is very important for successful business. The following table list out various review gates those to be run through at various stage of project Life cycle with clearly defined objectives.

Further each review having its defined Input, Deliverables, Output and objective of the gate review. The same further elaborated in below tables.
All the proposed Bid review gates are presented in the follow Life cycle diagram
Source: International Defence companies bidding process interviewed and flow diagram conceptualized by author.

**The End to End Estimating Process**

**Key Features of the Process**

- The proposed process can be applied to all types of defence projects, whether from an internal or external customer, where a Cost Estimate is to be generated or revised. It includes but is not limited to Cost Estimates required for business winning, internal Project control, and management analysis activities.

- The flow designed in the above diagram is an iterative tool and utilising all available time up-to contract award to improve the quality of the estimate including adjusting as necessary due to maturing and changing information as the solution evolves.

- A documented estimating baseline is defined with document owners/users identified. The maturity of the documents is reviewed and agreed with stakeholders as being suitable for use during various proposed gate reviews.

- This study suggest that the all functional estimate should be compiled by an authoritative source and approved by an appropriate functional approval level at various stages of bidding review system.

- Functional Estimates are requested where practicable and are based on bottom-up methodologies predetermined in conjunction with the scope, relevant metrics, assumptions, dependencies and exclusions.

- A two-way review and reconciliation process are conducted between the requesting authority and the functions to demonstrate the robustness, or otherwise, of the Functional Estimate and to identify key risks, uncertainties and exclusions.

- A documented Risk, Opportunity and Uncertainty evaluation proposed to be undertaken to determine overall variability of the Cost Estimate and to satisfy the Operational Framework needs for risk assessment.

- Appropriate Cost Estimating approval(s) are secured prior to Bid Approval and/or response to the customer. Preparation of the briefing pack will facilitate a seamless approach to all levels and types of clearance which are required.

- Estimating support to Contract Management includes activities such as budget breakdown, support to contract launch, administration and closure, as required.
• In compiling the overall estimate recommended to capture Basis of Estimate together with the functional input and utilise standard presentation formats for ease of understanding during the review and approval process.

Conclusions

The accurate prediction of costs is a critical issue to make the good management decision and precisely determining how much effort and time a project required. For a specific project to be estimated, which method should be used is depend on the environment of the project. One can use strength of the various methods to work out most appropriate comparative results to the given situation.

In context to Indian Defense environment, a large reliance is still on international manufacturers and their technical capabilities. The transfer of technology (TOT) agreement plays very crucial role in terms of how much local manufacturing will be focused upon to build capabilities and resource strength. An effective & structured approach to bidding and approval process support private industry to take correct & calculated decisions on any defence project opportunity.

References

9. International defence companies standard operating processes customized for Indian context.