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MANAGING RISKS THROUGH EFFECTIVE PROCUREMENT PRACTICES

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Abstract

Risk is an inseparable part of any organization. Alignment of relationship between risks, growth and return can maximize benefits for the organization. Procurement function is a strategic and most important function for an organization for its sustenance and profitability. The potential exposure of risks from the breach of contract, liability, delays in completion, force majeure events, natural calamities, warranty issues, patent and intellectual property rights, etc. if not properly addressed can land the company in difficult situations. Major sources of risks are inherently embedded in the ground on which project is to be set up especially in case of hydropower project where geological conditions play a major role. In addition, the political environment, social environment, access and approach to site, macro-economic policies of government in relation to taxation and prices of input materials, and above all the expected behavior of contracting parties form the major potential sources of risks. This article identifies probable models of risk behavior of an organization and corresponding types of contracts which could be adopted such as Item rate contract, Lump sum contract, Cost plus contract and EPC. Prudence lies in sharing the risk and assigning the risk to a party who is best able to manage it. Risk Management techniques have been suggested for different type of contracts as well for different uncertainties which are normally encountered and threaten the performance of contracts.

Keywords:

Risk;
Procurement;
Hydropower;
Types of contracts;
Item rate contract;
Lump sum contract;
Cost plus contract;
EPC.

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1. Risk- A Prelude

After taking over as Chief Executive Officer (CEO) of British Petroleum in 2007, Tony Hayward declared that safety was his TOP priority. He made rules that employees use lids on coffee cups while walking and refrain from texting while driving. Three years later, on 20th April 2010, the Deepwater Horizon oil rig exploded in the Gulf of Mexico, which was termed as one of the worst man-made disasters in history. A U.S. investigation commission attributed the disaster to management failures that crippled "the ability of individuals to identify the risks they faced and to properly evaluate, communicate and address them".

In the context of an organisation, risk can be defined as the effect of uncertainty on objectives or in other words risk is the possibility that an event will occur and adversely affect the achievement of objectives. The perception of risk varies amongst stakeholders. It is important that their perception of risks as well as their perception of benefits be identified, documented and underlying reasons for them are well understood. The risks can be broadly classified into three categories:

a) Preventable: mostly internal and can be avoided or controlled.

b) Strategy risks: which the company accepts according to its risk appetite with an aim to generate superior returns.

c) External risks: which are beyond the control of the company e.g. natural and man-made disaster, major macro-economic shifts, geo-political, environmental changes, disruptive technologies etc. These external risks could be partly controllable or even uncontrollable.

There are several ways to classify the risks. However, risk management should not be treated as a compliance issue as the rule-based risk management will not diminish the likelihood or impact of a disaster. In many of the organisations, it is observed that it is extremely hard to talk about risk and there exists a strong tendency among executives to avoid or discourage even thinking about risks leave alone discussing the same. We discount the uncertain failure while pursuing "can do" attitude and do not spend time and money to avoid or mitigate risks. The fact remains that risk management is not a natural act of human behaviour and we incubate the risks by tolerating minor failures and ignoring early warning signals. Another observed behaviour is that we do not discuss the failures truthfully and toe the line which is supported by the leader or group and while doing so, the information is presented in such a manner that it supports the line and all that information which is expected to contradict is suppressed. In this endeavour what happens is that we put more resources on the failed courses of action and increase our commitment ultimately leading to disaster.

2. Risk Management – An Overview

Risk being an inseparable part of any business must be managed either by accepting it or eliminating it or avoiding it or reducing its impact or sharing it. It must be clearly understood that managing risks is different from managing strategy as the risk focuses on threats and failures rather than opportunity and success. However, sometimes the risks can be used as an opportunity too by maximizing the upside while minimizing the downside. The business risk management should calibrate and align the relationship between risks, growth and return, although growth and return may appear to be opposite attributes to risks. A successful risk management in my opinion is one where all these opposing attributes can find a soothing shelter and a resilient organizational set up would try to seize the opportunities hidden within risk events.

The risk management process comprises of

a) Identification of risk
b) Identification of causes/ sources of risk
c) Identification of consequences of risks
d) Identification of likelihood and probability of risk
e) Identification of severity of risks
f) Ranking of risks

followed by identifying responses to the risks and the actions to be taken to manage such responses through delineating the responsibility of a business unit. The management of risk involves its continuous monitoring, observance and assessment of changes in contours of existing risks and management of changes in risk profile of a transaction on an ongoing basis.

3. Procurement Function

The organizations of modern era are interdependent and depending upon the nature of business or purpose of incorporating an organization, the objectives are decided. However, most of business organizations aim to maximize their bottom line while observing their corporate social responsibility, ethics and corporate governance. The bottom line is directly influenced by the expenses incurred by the company in procuring the resources may be works, goods or services.

As such the procurement function is a strategic and most important function for an organization for its sustenance and profitability. The potential exposure of risks from the breach of contract, product liability, public liability, limitation of liability, errors and omissions, delays in completion, force majeure events, natural calamities, warranty issues, patent and intellectual property rights etc. if not properly addressed can land the company in extremely difficult situations.

The objective of procurement is that one should pay the least cost and should get the best. The procurement function should make available the needed works, goods and services in the right quality and quantity at the right time and right price. At the same time, public procurement process should emphasize on equity, fairness and transparency. Risk management should begin at the start of the bidding process when decision is taken on type of tenders to be invited and important terms and conditions to be incorporated in the bidding document. While formulating and embedding risk management tools in procurement, one must never lose sight of facts that entire contractual processes should be in accordance with the applicable law.

4. Sources of Risk in Power Projects

The major sources of risks are inherently embedded in the ground on which project is to be set up especially in case of hydropower project where geological conditions play a major role. In addition to it, the political

environment, social environment, floods and earthquakes, access and approach to site, macro-economic policies of government especially in relation to taxation and prices of input materials, foreign exchange and above all the expected behavior of contracting parties constitute the major potential sources of risks. The projects involve procurement of works, goods and services. The basic law of contracting for all this remains the same but they differ in terms of treatment given to payment, acceptance criteria, quality assurance plans, transfer of ownership, insurance, performance guarantee/warrantee, IPR and variations or change proposals. In the succeeding paragraph, various risk models and suggested risk management methodologies which should be inbuilt in procurement process are discussed.

5. Contract Types for Procurement

Normally for procurement of works, goods and services the following types of arrangements are adopted:

i. *Item rate contract*: These contain Bill of Quantities which are also called Schedule of Quantities or Schedule of Rates; Technical specification for each item of Works/Goods/Services and bidder is asked to quote price for each item. A variation clause is provided to share the risk. In case of item rate contracts like items of goods to be procured or item of work to be executed, sometimes the owner himself provides estimated rates for each item and asks bidder to quote percentage above or below total price thus arrived.

ii. *Lump sum contracts*: For entire Works/Goods/Services a lump sum price is quoted which is valid for given scope of work, However, to take care of identified variation in major parameter of a structure, a suitable amount for payment or recovery is provided.

iii. *Cost plus contract*: The bidder is allowed a certain percentage to cover his overhead and profits over and above the actual expenses incurred on performance of works/manufacture and on delivery of goods.

iv. *Engineering Procurement & Construction (EPC) contracts or Turnkey Contracts* – as the name implies the contractor is responsible right from Planning and Design of structure and associated equipment till the Completion of project and Delivery of the desired output.

Except in cost plus model, the rates could be fixed i.e., no price variation or escalation is payable, or they could be subject to price variation according to certain agreed methodology.

6. Risk Models

The risk models can be designed on either the following philosophies, as the risk must be appropriately managed

a) **Entire Risk to the Owner**

This is basically a Cost-plus type contracts. If the Contractor treats the project as his own and makes efforts to reduce the cost, this may ideally become least cost option and both parties may be in a win - win situation. However, in practice it does not happen. In such a case, the Contractor may not try to increase efficiency or productivity by employing innovative methods as the Contractor is assured of reimbursement of all the expenses and, he may not be responsible for timelines too and as such this type of model is rarely followed. This can however be adopted for Research & Development Projects or for Development of new Products.

b) **No Risk to Owner**

This is a typically a case for Lump-sum Contract or Turnkey or EPC type of contract where Design, Engineering, Procurement and Construction is the sole responsibility of the Contractor, and the Contractor is paid the stated sum in the contract. However, even in Lump-sum contract, the contractor is paid extra, or cost is reduced for variation beyond a certain limit specified for certain components of the structure e.g., variation in depth of foundation for bridges due to change in level of foundation rock. In these types of Contracts, Owner provides certain inputs and asks the Contractor to deliver him the final output desired by him. In case of a Hydroelectric project, the Owner may guarantee the discharge, levels at inlet and outlet and ask the Contractor to deliver him a Project of specific generating capacity. The main feature of Turnkey contract is that the total amount payable to the Contractor has a ceiling i.e., contract value plus a contingency, where contingency is expressed as a percentage of contract value. Contingency is meant for covering variation in quantities and new items arising out of detailed design or changes in design, geological variations and site conditions. The bidder prepares BOQ, containing items of work, technical specifications, quantities as estimated by bidder and unit rates quoted by bidder for delivering the desired product. As such, no rates are to be determined for substituted and new items. These contracts may also provide a Schedule where the items to be executed under abnormal conditions are identified with their unit rates but without quantities. In such cases, the disputes are normally limited to issue of extension of time, prolongation

costs but in case contractor encounters highly adverse geology or adverse site conditions and the cost increase is beyond the affordable capacity of Contractor, the project will suffer in addition to litigation. On the other hand, if certain unforeseen events, which the Contractor has accounted for in his bid do not take place, it would mean a wind fall to the Contractor. To take care of this aspect, the payment for items identified therein should be made at the quoted rates therein for actual quantities executed subject to ceiling provided in Contract. In real life, these models are modified, and they do not really remain as no risk to Owner. It is normally a costliest model as far as Owner is concerned and it may be preferred in cases where the Owner does not possess capacity and capability to design, and engineering and project is expected to encounter high uncertainty. This model would succeed where reliable and adequate investigation results are available so that Contractor is able to frame his bids based on dependable data.

c) **Limited Risk to Owner**

These are typically item rate contracts. The Owner is responsible for investigations, design and engineering of project. This is theoretically considered as most economical option. However, the risk element and uncertainty involved sometimes make it the costliest option. In item rate contracts, the contractor quotes that rates for various items for the given quantity and the rates hold good for some stipulated variation limits say ±25%, beyond which different methods are applied for determination of rates of the deviated quantities. The contractor's risk is limited to the quantity stipulated in Bill of Quantities plus the variation limit specified therein. Once this limit is exceeded, the entire risk gets transferred to the owner. One option could be to make the quoted rates applicable for all deviations in the quantities. In this approach, if the rate quoted by Contractor for such an item is abnormally high and the deviation is on the positive side, the owner ends up paying very large amount. In case the contractor rates are on lower side, the contractor may not ultimately complete the work on some pretext or other and the work will linger or shall be abandoned and finally the entire project will be subjected to contractual dispute. In case of fresh and substituted items, the Contractor must be paid on freshly determined rates. Many disputes emerge on the issue of settlement of rates as both parties are not able to agree to mutually acceptable rates. There are certain contracts where decision on rates determined by the Engineer-in-Charge is stipulated to be final and binding on the contractor and beyond the purview of Arbitration clause, but it has been observed that on one pretext or other and some technical reasons, the settlement of these rates falls in the lap of Arbitrators. Non settlement of rates ultimately causes both time and cost overrun in contracts in addition to disputes, litigation which prolongs for long time which results in heavy cost of adjudication to both the parties.

7. Management of Risks

The risk is normally considered in terms of Financial Risks though there can be other type of risks too especially for listed companies like Reputational Risk and it could be very important for survival of company as the company may not be able to raise finances for its future projects and the Government may not entrust them new projects or in the event of the company not able to complete the infrastructure projects in hand, the creditors may seek the liquidation of company in case of default in payment of interest or principal of debt lent by them. So, it is very important that the risk is managed. This management is applicable to both Owner and Contractor. The ideal situation is where one party is not allowed to gain unfairly at the expense of other. One school of thought is that the entire risk should be borne by the Owner as it is, he who selected the Site. However, the Owner may make all attempts to transfer the risk to contractor through fixed price contracts. It is never a good idea to keep burden of entire risk on one party and therefore the golden axiom to manage the risk is to assign the risk to a party who is best able to manage it. The contractor can reduce his risk by estimating financial implications of all the possible risks and including its cost in his quoted bid. The estimation of bid amount by the tenderer will depend upon the information supplied to him by the Owner and acquired by him from his own sources which could be investigation of site and secondary data. Probably the risk could be zero in case the contractor possesses all the information while submitting his bid including interpretation thereof, but it is a hypothetical situation and superhuman prescience.

Often, the Contract provides that the Contractor is supposed to have visited and carefully examined the site surroundings, to have satisfied himself of the nature and conditions of transport system in all its aspects, extent of availability for all types of materials, sub-soil water and variations therein, climatic conditions and other similar matters affecting the works and the contractor shall be responsible for all the risks and liabilities arising therefrom. The Contracts also provide disclaimer clauses to the geological inputs and geological conditions provided by the Owner. However, these do not help the Owner as one should understand that it is the Service Receiver or Purchaser or Owner of an asset who has to pay for the entire cost, the Contractor or

Supplier or Service Provider will include the cost of all the inputs in his quoted rates and as such, transparency will only help the Owner in achieving least cost.

To understand the implication of such disclaimer clauses, it would be worthwhile to refer a case decided in Australia, mentioned in the book titled "Tunnelling Contracts and Site Investigations" by P.B. Attewell, which inter alia states

The Contractor was provided by the employer at the pre -tender stage with a document called "Engineering Site Information", which provided basic information on the soil conditions, and which also contained a disclaimer of liability. The Contractor claimed that the information so provided was false, inaccurate and misleading and the clays at the site, contrary to that information, contained large quantities of cobbles.

The High Court of Australia held that "The basic information in the site investigation document appears to have been the result of thorough technical investigation on the part of the employer. It was information which the contractors had neither the time nor the opportunity to obtain by themselves. It might even be doubted whether they could be expected to obtain it by their own efforts as a potential or actual tenderer."

In another case relating to change in sub surface conditions, the same book as referred above authored by P.B. Attwell states that "The employer's tender documents stated that the ground conditions at the site comprised a mixture of Northampton shire sand and Upper Lias clay. Tufa was found in areas of the site as work progressed, and as a result the foundations had to be re-designed and additional work carried out. The Court of Appeal held that the contractors were entitled to recover some compensation for breach of an implied warranty by the employer that the ground conditions would accord with the hypothesis upon which they had been instructed to design."

Geological Baseline Report (GBR) is a tool to resolve the disputes and determine the claims entitlement of the Contractor. This is a mechanism which does not make the Contractors responsible for unlimited risks arising from unforeseen ground conditions. It is however difficult to develop accurate and quantitative baseline as variability in geological formations and inaccessibility to site are the hard facts of life. One should also recognize that each baseline presented in the Geological base line report may give rise to claim in case of variation from the data supplied in GBR. It saves the owner from the claims of contractors on account of differing site conditions as the contractors cannot claim that they were not aware of the conditions existing at site, if the same has been mentioned in GBR. At the same time, in case owner tries to provide the GBR in such a manner that unreasonable risks are also shifted to the contractor, the purpose of GBR will be lost. Another situation has also been reported where the contractor tries to invent some explanation how a particular variable has impacted his cost and therefore it is important that only those properties of soil/ rock are provided which are relevant to contractor to execute his work e.g., excavation, temporary and permanent support system.

In the light of above discussions, some of the steps, which can be taken to manage risks in procurement process and administration of Contracts are listed hereunder: -

i. Disclaimer clauses should be avoided. It is good idea to share the risks. Contract must allocate the Risks and provide for Risk Registers. In the Bill of quantities of item rate contracts keep even those contingency items, whose occurrence has very less probability. When a claim is to be decided, a comparison will have to be done between the actual ground conditions vis a vis the ground conditions mentioned in GBR. So, it is important that those baselines are selected and quantified for inclusion is the GBR which are measurable or verifiable. However, it should be kept in mind that GBR is not a panacea.
ii. Owner to provide Realistic completion time with Construction Sequences. The bidder should be asked to provide his construction Program in the form of Bar Chart as well as Critical Path thereon with linked resources of man, machinery, and material. A Construction Program without linked resources is meaningless.
iii. Sufficiently detailed Tender drawing should be included as it becomes a potential source of dispute and often affects cost and time substantially during execution.
iv. While evaluating delay claims, "as-planned CPM schedule" should be compared with "as-built CPM schedule." CPM analysis allows both parties and Dispute Board/Arbitral Tribunal to discern between critical and non-critical delays or concurrent delays while conducting analysis of delays.
v. At the beginning of the project, introduce the provision of Dispute Avoidance Board (DAB).
vi. Several disputes have arisen on account of abrupt and abnormal increase in minimum wages and the price variation clause normally provides for compensation of price variation on account of labour based on Consumer Price Index (CPI) whose rate of variation is not always coordinated with

minimum wages. To mitigate this risk by both the parties, the 50% of labour component should be compensated based on increase in minimum wages and 50% based on CPI. In Case Contractor wants only CPI, write clearly in the Contract that no payment or recovery for increase or decrease in minimum wages by any authority shall be done by the Owner.

vii. While framing the Insurance clause, provide a reasonable amount of deductible to be incorporated in Insurance policy and that losses up to this level in each case shall be borne by the Contractor. The amount for which insurance is to be obtained should also be clearly specified in the contract. It shall enable the contractor to decide on premium and include the cost thereof in his prices properly.

viii. The additional cost payable to the Contractor in case of delays on account of reasons attributable to the Owner should be clearly provided in the contract document.

ix. A risk allocation register should be part of contract which should identify various risks, party to whom these are allocated and extent of sharing between parties.

x. Major taxes and duties should be included in the rates quoted by the Contractor should be disclosed by the tenderer so that any increase or decrease therein can be properly compensated or recovered by the Owner.

xi. Various disputes or claims of the Contractor/ Supplier/ Service Provider should be documented and every organization should have a procurement development group responsible to be repository of all such claims/ disputes, their resolution whether amicably or through adjudication by Arbitral Tribunal or Court and such lessons learnt should be incorporated in the future bids to be invited by the Owner.

8. Conclusion

Risk Management can be done through effective procurement processes by including GBR, detailed tender drawings, risk allocation registers and price variation linked with minimum wages in the bidding document. To improve the terms and conditions of Contract, organizations are advised to create a development group in procurement department to maintain repository of claims & disputes and constantly work on their refinement. These steps will ultimately lead to cost cutting, smooth execution of tasks, timely completion of works/ deliveries and result in increasing profitability of Company.

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