

MANAGING CONSTRUCTION PROJECTS IN TURBULENT TIMES COMMERCIAL, CONTRACTUAL AND SUPPLY MANAGEMENT ISSUES

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For the purpose of this paper, we shall focus on Commercial, contractual and supply management issues, speaking as a main contractor. Beyond what is written here, I would be making reference to real live scenario for ease of understanding.

HOW DID WE GET HERE?

The Covid-19 pandemic

We all underestimated the risk that came with Covid-19. The pandemic brought about premature deaths, closure of businesses, remote work style, reduction in productivity, slow down in construction activities, significant reduction in income, increase in unemployment, distortion in lifestyle, etc.

The war in Ukraine

The Russian-Ukraine war led to skyrocketing in energy prices and high inflation in many Western countries, which has in turn led to inflation and thus the increased cost of living in many countries, Nigeria not being left out.

High Inflation Rate

Inflation followed as a result of demand-pull, cost-push, increased money supply, devaluation, rising wages, monetary and fiscal policies.

Rise in cost of Energy

Gas, coal and electricity prices have in recent weeks risen to their highest levels in decades.

Removal of fuel subsidy

Fuel Subsidy is gone as declared during the inaugural speech of President Tinubu. The withdrawal of fuel subsidy led to a 150% to 200% surge in fuel costs (N500 - 600) across the country.

TURBULENT TIMES

Turbulent is a state of unrest, violence, or disturbance in the environment. Turbulent times are characterised by:

- Unpredictability
- Uncertainty
- Volatility

Unpredictability

If you describe someone or something as unpredictable, you mean that you cannot tell what they are going to do or how they are going to behave. We are in a situation where the future economic environment is difficult to predict. There is high risk of things going out of the planned, as a result of political instability, changes in government policies, natural disasters, and market fluctuations.

Uncertainty

Uncertainty is a state of not being sure about what the next moment may bring. A state of doubt, scepticism, suspicion, mistrust. There is a short fall of certainty to an almost completely lack of conviction or knowledge especially about an outcome or result. Uncertainty as a result of missing information, unreliable information, conflicting information, noisy information, and confusing information.

Volatility

Volatility in simple terms is the liability to change rapidly and unpredictably, especially for the worse. Volatility measures how large the upswings and downswings are for a particular currency pair. Generally, when the share market rises and falls more than one per cent in a day over a sustained period of time, it is called a 'volatile' market.

Construction is a Risky Business

It is common knowledge that Construction projects are complex, dynamic, and quite unpredictable. To deliver a successful construction project, effective management of the different stakeholders, the project resources and the uncertainties that comes along with the project are very essential. The management of these three factors could affect the delivery to quality, cost and schedule of the project. Construction is unpredictable even in a stable economy, not to talk of the turbulent times we now find ourselves. The uncertainty has increased, hence the need to increase our construction management skills.

Managing Construction in turbulent times

Construction management involves planning, budgeting, coordinating, and supervising construction projects from start to finish. As construction managers, we are to plan, organize, direct, control and evaluate project activities. This responsibility which we have managed to master over the years is becoming more difficult in turbulent times. In turbulent times, there is a rise in construction related issues, meaning there is increase in the risks. Our strategy has to be deliberate and intentional. As we speak many projects are in a state of coma and it's clear that as professionals, we must put in our best expertise to salvage the situation.

The Main Contractor's Ordeal

As a main contractor, we have not had such a difficult time as this in my construction experience. It is as though everything is happening at the same time. The economy is in free-fall after an explosive downturn. We do not control the market. The main contractor is faced with surge in market prices, unrealistic budget, inflation, increase in cost of logistics, surge in energy cost, distorted cash flow, lack of funding, inadequate infrastructure, bad road, corruption, scarcity of labour, etc. The main contractor seems to be the most affected stakeholder. The times are indeed tough but we just have to keep looking inward to find ways to keep the business and deliver the projects.

As main contractors, we are under the tremendous burden of reducing costs due to the liquidity crunch. We turn out very low profit margins due to increased cost and large overheads. There little jobs available due to growing competition. There is incessant delay in payments, scope changes, and costs overrun. Contract prices have been over stretched, stressed to a break-point due to struggle with cost reduction while the prices of building materials keep skyrocketing. Some projects are coming to a standstill, some are abandoned due to lack of funds. We have cases of pre-matured demobilization from site as a result of increasing operational cost.

Inflation and Price Escalation

These are major challenges of main contractor at this time. There is a rapid rise in the prices of the building materials. Factors such as government fiscal policies, scarcity of building raw materials, hoarding of building materials, fluctuation in the cost of fuel and power supply, inadequate infrastructure, interest rates, corruption. Price escalation is when an item has a different price in a different market or location, there are many causes of this but largely it comes down to supply chain variations such as differing shipping costs, paid tariffs or a wide range of distribution channels. While inflation refers to a full basket of goods and services. Price escalation refers to a specific good or service. The price of reinforcement bars for example have escalated due to numerous economic factors ranging from the rise of raw materials, increased global demand, increase of shipping and insurance costs. Before Covid-19, reinforcement bar was at N120,000 per ton, within a year it has risen by 229.1% bringing the price to N395,000 per ton. Today, the price of reinforcement is at the borders of half a million per ton. Cement, concrete, aggregate, formwork, etc not being left out of the price escalation.

Increase in Logistics

Economies rely on fossil fuels and other forms of energy to transport building materials. The price of fossil fuels has become more expensive over the last few months and has thus affected the costs of transporting and distributing construction materials. From local transportation to freighting imported items, construction operations are becoming more and more difficult to sustain.

Increase in pump prices has not only affected the logistics of the building materials, for the main contractor it has also affected daily operation of plants/equipment, cost of power supply for site and office operations, mobility of the workforce, etc.

When we importation is part of the project scope, the cost of shipment/freight must be carefully considered. In some cases, the major price escalation is not in the cost of the material itself but in the cost of freight. International commercial terms (Incoterm) need to be carefully decided. Incoterm refers to world's essential terms of trade for the sale of goods. They are used to clearly define the obligation of cost, risk and responsibility of the transportation of goods between a buyer and seller. As main contractors, when negotiating contracts, it is important to define who takes responsibility for the intercoms. Some common incoterms are:

- ❖ EXW (Ex Works) - an incoterm whereby the main contractor, the buyer in this case, of a shipped product pays for the goods when they are delivered to a specified location. The buyer has to pay the transport costs.
- ❖ FCA (Free Carrier) - Free carrier is a trade term dictating that a seller of goods is responsible for the delivery of those goods to a destination specified by the buyer. The seller is responsible for export clearance and delivery of goods to the carrier at the named place of delivery.
- ❖ CPT (Carriage Paid To) - the seller delivers the goods at their expense to a carrier or another person nominated by the seller. The seller must pay any costs, export duties and taxes, where applicable, related to export clearance. If the buyer is requested by the seller to provide information or documents in relation to export clearance, then the seller must pay the buyer for these costs.
- ❖ CIP (Carriage and Insurance Paid To) - The seller is responsible for the delivery of goods to an agreed destination in the buyer's country, and must pay for the cost of this carriage.
- ❖ DAP (Delivered at Place) - The seller is responsible for delivery of the goods, ready for unloading at the named place of destination.
- ❖ DPU (Delivered at Place Unloaded) - The seller to unload the goods at the named place of destination to complete delivery and the risk/cost transfer to buyer. The buyer is still responsible for any import duties, taxes, or customs clearance fees.

- ❖ DDP (Delivered Duty Paid) - The seller assumes all responsibility for transporting the goods until they reach an agreed-upon destination. It is an incoterm, or a standardized contract for international shipments
- ❖ FAS (Free Alongside Ship) - This Incoterm is used primarily for water transport, such as shipping by sea or river.

Whichever the incoterm decided, as main contractor we are careful to protect our interest. We look out for escalation clause in the contract. An escalation clause is a clause in a contract that guarantees a change in the contract price once a particular factor beyond the control of either party results in an increase or decrease in the Contractor's costs.

Legal Partners

As main contractors, we engage the services of our legal partners to interpret and ensure the terms are favourable. We no longer rush into signing off of contract. Negotiating a favourable contract requires an understanding of the different roles and responsibilities of each party, as well as the risks and challenges that may arise during the project. With the help of our legal partners, we are able to identify potential risks and negotiate contract terms that address those risks.

A STRATEGY THAT WORKS

As a main contractor, one strategy that we deploy to manage construction projects during this turbulent time is Issues Monitoring and Risk Management. We are constantly monitoring of issues. We encourage issues identification at all levels and processes. These issues are categorised for ease of monitoring and resolution. We ensure Risk are identified and Managed

What are Issues?

Issues are the present occurrence on the project that would most likely hamper the successful delivery of our project if not properly managed. There is a wide range of issues depending on the project type, nature of project, project environment, stakeholders, etc. The issues could be legal, technological, competitive, market, cultural, social and economic environments, values, culture, knowledge and performance.

Establishing and Maintaining Issue Log

Members of our project team are trained to identify the issues that are affecting the project delivery. It is good practise to document the issues in a log or register. The issue log/register is a project document where all issues that are negatively affecting the project are recorded and tracked. The issue log created, provides a tool for reporting and communicating all that is happening within the project to reporting line and the issues monitoring committee. Beyond identifying issues and maintaining an issue log, monitoring is key. The issues monitoring committee help to investigate the causes of the issues and put in measures to quickly resolve the issues. The resolution has to be effectively to help the team deliver the project to quality, within budget and on time.

Project issue log should usually include:

- ❖ The issue ID - Tag the issues with numbers or/and alphabets for ease of identification
- ❖ Issue type - Give the issue a name.
- ❖ Description of the issue - Describe the issue in easy-to-understand tenses.
- ❖ Initiator - Source of identification. Who reported the issue? Not for any harm or punishment but for better clarification, if need be.
- ❖ Date raised - The date or time of the issue.

- ❖ Issue owner - The identifier might not be the owner of the issue. The issue owner is the department/process where the issues is identified.
- ❖ Action required - actions must be deliberate
- ❖ Responsible Person - The name of the person responsible for solving the problem.
- ❖ Deadline - Set a timeline when the issue would have been resolved
- ❖ Status - The status of the issues, whether resolved or still pending.

ID	Issue Raised	Description of Issue	Initiator	Date Raised	Issue Owner	Action Required	Responsible person	Deadline	Status
1	Lack of Good Equipment	The payloader is constantly breaking down on site, affecting the progress of work	QAQC Engineer	06-Apr-22	Plant and Equipment Department	Schedule the equipment for maintenance.	Plant and Equipment	11-May-22	Closed
3	Work space	Sharing of work space with the piling contractor has led to delay in progress of work.	Planning Engineer	16-Jun-22	Execution	Stagger work activities to accommodate the delays	Execution	20-Jul-22	Closed
3	Faulty AutoCAD software	AutoCAD software is not working satisfactorily.	Design Engineer	17/4/2023	IT Department	Procure a Licenced AutoCAD Software	IT	15/08/2023	Outstanding

What are Risks?

A Risk is a future uncertainty. Risk is the probability that actual results will differ from expected results. Unlike issues, risks are futuristic. The issues presently experienced giving an indication that something might go wrong sometime somewhere in the future. Risk is the likely result or fallout from the issues. ISO 9001 defines a risk as "the effect of uncertainty on an expected result.

Project Risk Register include:

- ❖ Risk identification number
- ❖ Risk Statement
- ❖ Risk Owner
- ❖ Type of risk
- ❖ Risk Identifier
- ❖ Date identified
- ❖ Probability
- ❖ Impact
- ❖ Risk Value
- ❖ Mitigating action
- ❖ Deadline
- ❖ Monitoring/review strategy

❖ Residual Risk Level

ID	Risk Statement	Risk Owner	Risk Type	Risk Identifier	Date Identified	Probability (P)	Impact (I)	Risk Expected Value	Risk Level	Actions to address Threat and Opportunity	Deadline	Monitoring & Review Strategy	Residual Risk Level
						(1 - 5)	(1 - 5)	(P) X (I)	Refer to Matrix	Mitigating Actions to Address Threat			(L/M/H)
R11-01	There is a risk of delays in IT requests and repairs due to delays in funding leading to the underachievement of deliverables	IT/FINANCE	FINANCE RISK	01/02/2023	3	4	12	HIGH	Availability of funds based on IT budget schedule for each Quarter	Engaging relevant stakeholders (finance team)	Working with IT Budget Sheet	L	Ongoing
R11-02	There is a risk of unbudgeted spending due to damage of various hardware at the same time leading to high	IT	Infrastructure risk	01/02/2023	3	3	9	HIGH	Routine Maintenance	Continuous sensitization on Hardware usage	IT maintenance Checklist	L	Ongoing

operating cost										
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Risk management

Risk management is coordinated activities to direct and control an organization with regard to risk. Risk Management is essential for all Quantity Surveyors. For our projects to be successive, we identify the potential risks our projects are exposed to. Through a risk management committee, we carry out a proper assessment of the likelihood of occurring and the likely impact it will have on the project if it eventually occurs. The impact could be high, medium, or low. Priority of treatment is dependent on the impact. We treat high impact risk first, followed by medium, then the risks with low impacts. The following treatments are available for managing any kind of risk identified:

- ❖ Avoid,
- ❖ Transfer,
- ❖ Reduce
- ❖ Accept

Avoid the Construction Project Risk

This may mean turning down a project or negotiating the contract to remove the project risks. We have had to walk away from taking up projects. There’s no shame in walking away from a project if the risks outweigh the potential rewards.

Transfer the Project Risk

Sometimes we are not the right fit to manage a particular risk. We work with the other stakeholders to determine is best suited to assume each risk. Through insurance, subcontracting to specialist, etc we are able to transfer potential risks. We have had to review some of our covers with the insurance provider. Again, when you are not sure, engage a specialist to review the covers for adequate protecting against risks.

Reduce the Project Risk

When it is total impossible to avoid or transfer a risk, we put in mitigants to reduce the impact of such risks. Reducing the impact of the risk might mean bringing in additional resources, such as hiring more workers or renting additional equipment to manage all your risks effectively.

Accept the Project Risk

Agreeing to accept a risk is a decision that shouldn’t be taken lightly. It might be fine to accept a few low probability, low impact risks. Agreeing to accept a high probability, high impact risk without any type of management or mitigation could be detrimental to the project and the bottom line.

MANAGING COMMERCIAL ISSUES IN TURBULENT TIMES

Commercial issues relate to the price, cost, budget cashflow, payment plans, etc. More than ever the commercial issues are more pronounced in turbulent times. These issues, if not properly monitored would bring the project to a halt.

ISSUES	RISKS
A shift from the pre-planned budget Poor cost estimates Incorrect estimates	Cost overrun. Lowered profit margins. Shortage of material Reputational damage Delays
Unrealistic contract rates/sum	Cost overrun Abandonment of the Project

	Time overrun Loss of profit
Failed/distorted cash flow	Halting project progress Time overrun
Lack of funding Delays in payments Inadequate resources	Abandonment of the Project Time overrun Loss of profit Inflation Litigation
Disconnect between the office and site operations (unrealistic expectations)	Poor Quality Delays Time overrun Cost overrun
Unexpected increases in material costs	Poor Quality Delays in procurement Cost overrun
Labour shortage	Poor Quality Delays Time overrun Cost overrun
Stagnant productivity.	Delays Time overrun Cost overrun
Undocumented site instructions Incomplete descriptions	Time overrun Cost overrun
Corruption	Reputational damage Cost overrun
Poorly handled change orders	Increased project costs Delays in hitting contract milestones Interruptions of workflow, Time overrun

SUGGESTED ACTIONS FOR MANAGING COMMERCIAL ISSUES AND AVOID THE RISKS

Build accurate estimates

Ensure you have detailed drawings and specification. Understand the peculiar nature of the project before pricing. Be experienced on the subject matter matters. Organizational knowledge saved from previous similar project is essential. Methodology of construction is essential in building of rates. There is be adequate consideration for plant/equipment in terms of cost, availability and output. Complex projects should not be underestimated. The win-by-all-cost pricing style should be clearly avoided. Seek clarification for ambiguities. Site visit to confirm site conditions is an added advantage.

Cash flow

The subject of cashflow management is very essential from start to finish, all through the construction period. Poorly negotiated payment terms can mess up your cash flow. Where you receive advance payment, ensure a back-to-back disbursement based on the advance payment utilization plan. Negotiate your third-party items at an early stage, tie down the prices. Plan your payables and receivables for adequate liquidity of the project. Pay attention to

construction cost, retention, withholding tax, value added tax. If you plan to tax loan to improve your cash flow, ensure your risks are well calculated, and the payback plan is spot on.

Secure your projects

Bonds and guarantees are basically a form of security. In turbulent times as these, financial protection should be put in place to support a contractual obligation. Advance payment guarantee/bond, performance bond, retention bond are good mitigants against financial loss. Monitoring the expiration date is also very essential.

Track your budget performance carefully

Without effectively tracking the project resources, poor workmanship, cost and time overrun is eminent. Tracking the expenses so that the project is completed within its allotted budget, helps you to identify variance between the plan and execution. We should not wait for the variance to be too wide before we raise an alarm, Beyond raising an alarm, carry out a root cause analysis to find out went wrong. The issue is better managed and arrested at an early stage. Budget tracking can be done using budgeting and forecasting software

Collaborate and delegate

Team collaboration and responsibility delegation is essential. Work with your team to agree on timelines when tasks will be completed. Delegate tasks based on team members' strengths and weaknesses. Communicate with your team regularly about the progress of the project through regular meeting. Physical meetings and progress assessment is important. Be flexible with your timeline and delegate tasks as needed.

Take the time to develop leadership skills

Leadership skill is essentials for professionals in turbulent times like this. As professionals, we must be deliberate about acquiring leadership skills. It is quite unfortunate that many Quantity Surveyors are satisfied working as project QS, many are afraid to take up leadership challenges.

Negotiate better terms

Negotiation is one of the key skills we should have as professional. Learn to negotiate, improve on your negotiation skills, Negotiate and negotiate again. Be the first to make an offer put you in control of the deal. The terms are more important than the prices, hence choose your words wisely while negotiating. Get adequate clarifications by asking questions and also listen well. Settle for a win-win deal. Don't price your vendors/suppliers to a tight corner. They wouldn't deliver.

Keep up with the times

It's surprising how many people working in construction management haven't taken their processes beyond a certain era. Some professionals are still using simple spreadsheets, handwritten documentation done with pencil and paper. Be current. Times have changed. Embrace technology. Invest in technology.

MANAGING CONTRACTUAL ISSUES IN TURBULENT TIMES

Contractual issues could arise from any disagreement or problem during the formation or performance of the contract. The contract issue could be something as small as a misunderstanding about the terms of the agreement, or it could be something much larger, such as one party not holding up their end of the bargain. These are common in turbulent times. It is advisable for construction managers to be very conversant with the terms of the

contract. Ensure the rights and responsibilities of the parties are well defined. Contracts need to be clear. Check out the termination or default clauses. The recital should be adequate, providing the parties with a general idea about the purpose of the contract, the parties involved, and why they are signing it. Above all there should be room for due diligence. Carry out the necessary verifications before entering a contract.

Issues	Risks
Changed Conditions	Damaging working relations. Legal claims due to breach of contract Constructive dismissal
Delays	Compensations Liquidated and ascertained damages Loss of profit Litigation
Incomplete works Non-correction of defective works/snags	Compensations Liquidated and ascertained damages Loss of profit Litigation
Termination for Default	Loss of profit. Compensations Litigation Inability to recovery invested costs on undelivered work Payback of advance payment received,
Liquidated and ascertained Damages	Loss of profit. Litigation
Warranty hazard	Loss of profit (fulfilling the warranty obligations) Reputational damage Customer dissatisfaction
Non-performance of obligation	Litigation Pulling/calling of guarantees/bonds
Indemnification issues	Loss of profit. Litigation
Dispute/Disagreements	Litigation Delays Termination
Incomplete contract information	Claims Extension of time Additional compensation.
Poorly written contracts	Breach of contract Non-performance Delays
Lacking organization and haphazard document management	Centralizing all important information
Ambiguity in contractual obligations	Misunderstandings Disagreements Litigation
Weak enforcement of contract	Heavy legal consequences Financial losses for organizations

SUGGESTED ACTIONS FOR MANAGING CONTRACTUAL ISSUES AND AVOID THE RISKS

Read contracts thoroughly, even if it seems unnecessary

We appear to be too familiar with the terms of a contract, that we skip reading through contract. In times like this, we should show more diligence. Let's deliberately read through, even when the paperwork is standardized.

Negotiate and agree on clear and fair terms

Try as much as possible to avoid ambiguous or vague language, unrealistic deadlines, or excessive penalties. They could lead to misunderstandings or disputes. Ensure your contract have clauses that address the possible scenarios of changes, delays, disputes, or termination of the contract

An expert review

There is no harm is not being sure. Rather the harm is in assuming wrongly. Let a legal professional read and properly interpret the contract clauses and conditions. Having a legal department/team is not a bad idea.

MANAGING SUPPLY MANAGEMENT ISSUES IN TURBULENT TIMES

Supply management is the act of identifying, acquiring, and managing resources and suppliers that are essential to the execution of a project/ It includes the purchase of physical of materials/equipment, information, services, etc. Supply chain borders around:

- ❖ Identifying what the project needs
- ❖ Planning & Budgeting
- ❖ Prequalification of suppliers
- ❖ Purchasing/Manufacturing,
- ❖ Inventory Management/Storage/Warehousing
- ❖ Logistics and Transportation
- ❖ Service delivery evaluation
- ❖ Customers Feedback

Issues	Risks
Increasing costs	Impact on the bottom line Loss of profit Delay Submission of claims Impact on quality
Reducing efficiency/quality	Reputational damage Lead to lost sales.
inventory imbalances Inventory management challenges	Tie up capital and affect cash flow Theft Damage Spoilage Obsolescence Overstocking
Material scarcity	Delays Cost overruns

	Quality issues Customer dissatisfaction
Supplier reliability issues	Quality issues Delivery issues Financial instability
Inaccurate demand forecasting	Undersupply Oversupply
Delay in transportation	Time overrun Customer dissatisfaction Drop in inventory levels Increase in logistics/operational costs
Communication gaps between supply chain partners.	Errors Delays Conflicts in the supply chain Loss of profit
Poor pay structures Unclear or No Language Concerning Pay Structure	Low loyalty Poor performance Delays in supply Threat to lives and business
Assignment and Subcontracting	Performance and quality risk. Schedule risk. Financial risk

SUGGESTED ACTIONS FOR MANAGING SUPPLY ISSUES AND AVOID THE RISKS

Address issues promptly before they degenerate

Addressing these issues promptly is crucial for maintaining a competitive edge and achieving sustained business success. These hurdles can disrupt operations, lead to higher costs, and affect overall business efficiency

Effective solutions for supply chain management issues

Some effective solution include implementing advanced technology, building collaborative partnerships, using accurate demand planning, optimising logistics, and embracing continuous improvement. These measures enhance visibility, communication, and efficiency, reducing costs, streamlining operations, ensuring timely delivery, improving overall supply chain performance and increasing business success.

Maintaining good working relations

It is important to maintain good relations with suppliers, finding alternative suppliers, searching for alternative materials, improving the procurement process, and enhancing forecasting methods

In conclusion:

We know the times are tough. We must continue to examine the way we operate and find in an attempt to find better ways to manage and deliver our projects in turbulent times. One thing is sure, we do not know long the situation will last, yet we cannot afford to stay out of projects. There is need to sustain the growth of our industry, our people and the business as a whole. Let us continue to:

- ❖ Plan adequately

- ❖ Communicate effectively
- ❖ Put the right team on the project
- ❖ Document accurately and completely
- ❖ Collaborate with other professionals
- ❖ Tracking/monitor our progress
- ❖ Embrace changes

Times requires tough people.

Thank you.

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