

**FUTURE-PROOFING QUANTITY SURVEYING: ESSENTIAL SKILLS,  
KNOWLEDGE AND COMPETENCIES FOR SUCCESS IN A  
TURBULENT ECONOMY**

**PAPER PRESENTATION**

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**“If your ship doesn’t come in, swim out to meet it” – Jonathan Winters**





**PREAMBLE:** The Construction Industry is a vital sector of the global economy, providing infrastructure, employment and driving economic growth, and as cost and Quantum services provider in the industry amongst other professionals in the sector that is characterized with multiple stakeholders and high capital investments, it is therefore instructive to accord such service provider (Quantity surveyors) all it takes to preserve its relevance and continuing patronage.

It is worthy of note that the construction industry is undergoing rapid transformation as the industry's traditional business models and practices are being disrupted by technological advancements, changing clients' expectations. Shifting regulatory requirements, the adoption of digital tools and technologies such as BIM(Building Information Modelling), AI(Artificial Intelligence),innovative construction methods and procurements, sustainability and Environmental management to mention just few demands **NEW SKILLS AND COMPETENCIES** as need to demonstrate unique value-added

proposition ( VAP ) to clients, projects, and stakeholders are necessary and remain indisputable.

So, this paper explores the essential skills, knowledge and competences required for Quantity Surveying professionals to succeed, thrive and remain relevant in rapidly changing turbulent economic landscape. ,by addressing the following puzzles agitating our fears of the future. Hence, this presentation will be speaking to context of the following puzzles:

- What does it mean to future-proof Quantity Surveying profession?
- What kind of services are we expected to render that will ensure continuing relevance of the profession?
- Why is it important and mandatory to Future-proof the profession?
- What are the strategies to Future-proof Quantity surveying profession?
- What digital skills will be required to remain competitive?
- How can Qs Professionals develop flexibility, adaptability and resilience in the face of disruptive and turbulent economy?
- What emerging technologies will impact the construction industry, and how can Qs professionals stay informed and updated?
- How can Qs professionals develop expertise in sustainability and environmental management?
- What knowledge of global construction markets and trends will be necessary for relevance, competition and success?
- How can Qs professionals stay up-to- date with changes in regulations, Laws and standards?
- What knowledge of innovative construction materials and methods will be required?
- What competencies will be necessary to effectively manage and mitigate risks?
- How can Qs professionals develop commitments to continuous learning and professional development?
- What problem solving competencies will be required to identify and capitalize on new emerging opportunities in turbulent economy?
- What are the stakeholders expectations that necessitates future-proofing of Quantity Surveying profession?
- What are the consequences of failure to future-proof the profession?

- Lastly, what are the roles of Nigerian Institute of Quantity Surveyors and Quantity Surveyors Registration Board of Nigeria in repositioning the future of Quantity Surveying profession in Nigeria?



## **INTRODUCTION:**

The Quantity surveying profession is facing unprecedented challenges and opportunities in this present rapidly changing turbulent economy, couple with competitions from other professions with overlapping competences and responsibilities The profession’s traditional competence, knowledge and skills that were once the cornerstone of success ,are no longer sufficient .

Therefore, to thrive in this dynamic landscape, Quantity Surveyors must adapt by leveraging on our **STRENGTHS**, ( by virtue of our training and core expertise ) for effective and efficient client satisfactory and value-driven services ,Up-scaling our skills, knowledge and competences to water –down our **WEAKNESSES**, and Knowledge gaps and by . ,Aligning with new **OPPORTUNITIES** of Diversification ,adaptation ,innovations and resilience created by the **THREATS** of turbulent economic landscape and industry rapid transformations that are caused by drivers of change such as technological advancements, digitalization, changing business model -(integrated project

delivery model), shifting market demands, globalization, sustainable practices and changing stakeholders expectations to future-proof their expertise, embrace innovations, accept reality of industry disruptions and continuous learning to address threats such as:

- Digitalization: Building Information Modeling (BIM), Internet of Things , robotics etc.
- Sustainability: Climate change, energy efficiency and environmental concerns, Resilient and Adaptive construction ,sustainable and Green construction.
- Agile construction and Iterative Designs that involves breaking down of projects into smaller manageable tasks, prioritizing tasks based on value and risk with emphasis on cyclical process of design, test and refinement with active stakeholders engagement and participation.
- Changing Business Models and Integrated Project Delivery: Leveraging on Emerging procurement methods, such as
  - (i) Public-Private Partnerships (PPP), Private sector finances, builds, and operates public infrastructure.
  - (ii) Design-Build: Contractor designs and builds the project.
  - (iii) Design-Build-Operate-Maintain (DBOM): Contractor designs, builds, operates and maintains the project.
  - (iv) Construction Manager at-Risk (CMAR): Construction Manager oversees project and assumes risk.
  - (v) Construction Manager as Constructor (CMc): Construction Manager constructs the project.
  - (vi) Engineer-Procure-Construct (EPC): Contractor designs, procures, and constructs the project.
  - (vii) Build-Operate-Transfer (BOT): Private sector builds and operates infrastructure, then transfers to public sector.

- (viii) Alliance Contracting: Collaborative agreement between owner, designers, and contractor.
  - (ix) Early Contractor Involvement (ECI): Contractor involved early in design and planning.
  - (x) Partnering: Collaborative agreement between owner and contractor.
- Talent shortages: Attracting and retaining diverse, tech-savvy professionals demands modernized training and development goals.
  - Material Revolutions: emphasis is gradually changing to Circular economy and waste reduction using sustainable materials, recycled and reused materials, Biodegradable and Bio-based materials, adaptive and responsive materials, high-performance insulation and weatherproofing, smart materials and self –healing coatings etc
  - Government policies : This can significantly influence the prospect of the profession, through regulatory policies like updating codes and standards to incorporate sustainable and innovative practices, procurement regulations, construction act, or through economic policies like taxation and incentives( encouraging investment in sustainable and innovative construction practices),influencing global supply chains and material costs.
  - Global events : Economic events like Global recession this always reduced construction activities and by implication decreased demand for Qs services, and Inflation with its characteristics effects of increased construction costs and reduced purchasing power .Other global events such as Environmental, technological, social and political, Demographical and Geopolitical also influence need to Future-proof the profession.
  - Changing consumer demands and expectations: such as increased focus on cost–effectiveness and value for money, whole-life costing, growing demand for technology integration (smart buildings)desire for faster project delivery and reduced construction time, need for improved building resilience and adaptability, increased for health and wellbeing in

building design, growing demand for modular and prefabricated construction and increased focus on energy efficiency and renewable energy amongst other considerations.

All the above listed drivers of change in the context of construction industry revolution necessitate the need for Quantity Surveying Professionals to future-proof their skills, knowledge and competences to remain relevant and successful. Stewart and Hamlin (1992) define competency as something which a person who works in a given occupational area should be able to do. Holmes and Joyce (1993) view competency as a description of an action, behavior or outcome which a person should be able to demonstrate, or the ability to transfer skills and knowledge to new situations within the occupational area. Meyer and Semark (1996) describe competence as the demonstration of an integration of knowledge, skill, personal attributes and value orientation., while Wisner (1994) insists that competences provide a common cultural thread, a language for success, a framework for thinking about excellence and a way of communicating the future.

A justification for a study into the future of Quantity surveying required that the ability of Quantity surveying profession to meet differing and changing client needs and to grow the market survival and success of Quantity surveyors depends on the knowledge base of the profession. Prokesch (1997) advocates that building and leveraging knowledge is the key to success in this age of globalization, while Male (1990) opines that knowledge is an important power base for professions generally.

The Quantity surveying profession as earlier mentioned faces threats to its traditional roles and functions as a result of changing client needs in the construction industry, Brandon in 1990 suggests that the profession's continuing relevance and growth could require enhancing its knowledge domain so that it can move quickly into new areas of service as opportunities arise, at the same time it should be prepared to move away from old methods when technology and competition will make them redundant.

Competent Quantity surveyors must have a range of skills, knowledge and competence which can be applied in a range of contexts and organizations. Today, one of the pressing issues which is confronting the Quantity surveying profession is the level of awareness of the value-added services of the

profession in the construction industry and increasing range of business opportunities for continued growth and success, however, this issues can be addressed by a competency –based review of the profession.

Meanwhile, in addition to answering the burdening issues agitating our fears of the future of the profession, this paper will also present model of the essential skills , knowledge and competences expected of Quantity surveyors and briefly describes the critical inputs required of key role-players for the effectiveness of the model in sustaining the competences of Quantity surveyors to succeed in turbulent economy.





## Definition of Terms:

**What is Quantity Surveying?:** An amalgam of several disciplines – such as economics, law, accountancy, management, mensuration, information technology, construction technology etc. within the unique context of the construction (Brandon, 1990). It could also mean “The profession that is concerned with financial probity and achieving value for money in the conceptualization, planning, execution and operation of building and engineering projects and developments (NIQS – 2004)

Future-proofing Quantity Surveying profession means taking proactive steps to ensure that the profession remains relevant, competitive and sustainable in the face of future challenges, changes and uncertainties. It involves:

- Anticipating and preparing for future trends, technologies and disruptions.
- Developing skills, knowledge and competencies that will be needed to adapt to future changes.
- Staying ahead of the curve in terms of innovation, best practices and industry developments.

- Building resilience and flexibility to navigate uncertain and rapidly changing construction and commercial environment.
- Ensuring that the profession remains valuable, relevant and in demand.
- Fostering a culture of continuous learning, innovation and improvements.
- Encouraging diversity, inclusivity and adaptability within the profession.
- Developing strategies to address potentials threats and capitalize on opportunities.

**Future-proofing a profession involves a long-term perspective, forward thinking and willingness to evolve and transform,** therefore, by future-proofing QS profession, individuals and firms can ensure their continuing relevance, success, and impact in rapidly changing turbulent economy.

**SKILLS:** This is abilities or talents that are developed through training, practice or experience. It could also mean specific, observable and measurable tasks or activities that can be performed to a certain standard.(Examples ;communication ,problem-solving, Time management ,Data Analysis, programming, )

**KNOWLEDGE:** This could mean information, facts, principles that are acquired through learning , experience or instruction, it could also mean theoretical or practical understanding of a subject, concept, or phenomenon.

Examples;(understanding of construction laws, and regulations, Knowledge of Building codes, familiarity with project management methodologies )

**COMPETENCES;** This is demonstrated ability to apply knowledge ,skills and attitudes to achieve a specific standard or outcome .It is integration of skills, Knowledge and Personal qualities to perform a job or task effectively.

Examples:(Project management competence, leadership competence, communication competence).

However ,in the context of Quantity surveying , some examples of SKILLS,KNOWLEDGE & COMPETENCE are:

- **SKILLS:** measurement and quantification ,cost estimation, data analysis, communication skills
- **KNOWLEDGE:** Construction laws and regulations, project management methodologies, cost management techniques etc
- **COMPETENCES;** It is worth noting that the concept of competence is often used in the context of professional development and certification, where individuals are assessed against a set of standards or criteria to demonstrate their ability to perform a specific job or task.

Here is a simple co -relation and framework to illustrate the relationship between SKILLS,KNOWLEDGE AND COMPETENCES

- **SKILLS+KNOWLEDGE=ABILITY**
- **ABILITY+ATTITUDE+EXPERIENCE=COMPETENCE**

In order words, skills and knowledge are the building blocks of ABILITY, which is then combined with ATTITUDE and EXPERIENCE to demonstrate COMPETENCE.

## **TURBULENT ECONOMY AND THE IMPACT ON QUANTITY SURVEYING PROFESSION**

A turbulent economy in the context of Quantity surveying refers to a complex and dynamic economic environment marked by unpredictable and rapid changes influenced by:

Economic downturn-reduced construction activities hence decreased demand for QS services due to reduced construction projects, clients seeking cost savings(Budget constraints) leading to pressure on QS fees and services and

Increased competition-more QS firms competing for fewer projects, driving down prices and margins.

Inflation and currency fluctuations :cost escalation – rising material and labour costs impacting construction projects requiring QS to adapt and manage costs effectively., Exchange rate Volatility –fluctuations in currency exchange rates affecting International construction projects and QS services.

- Globalization and Trade ;Increased competition-Global QS firms competing with Local firms driving down prices and margins., New opportunities- Globalization creating new opportunities for QS firms to expand into International markets.
- Technological Disruption ;Digital transformation, adoption of digital technologies such as BIM, AI ML,BLOCKCHAIN TECHNOLOGY, SMART CONSTRUCTION Etc and changing QS practices requiring New skills .Increased automation in QS tasks ,potentially reducing demand for certain QS services.
- Sustainability and Environmental considerations: Green Building – Increased focus on sustainable and green building practices , requiring QS to adapt and provide expertise
- Environmental regulations -Stricter environmental regulations impacting construction projects and QS services
- Skills and Talent shortages:-Aging workforce ;QS professionals retiring, leading to shortage of experienced professionals., likewise skill gap-New technologies and practices requiring QS professionals to develop new skills.
- Risk Management-Turbulent economy increasing risks for construction projects ,requiring QS to adapt and manage risks effectively, likewise issues of cyber security –increased risk of cyber-attacks on construction projects , requiring QS to ensure data security.

Aside the turbulent economy challenges facing QS Profession in Nigeria, there are other issues of concern that needs to be addressed such as follows:

1. Lack of recognition and understanding of QS role.
2. Ineffective regulation and enforcement of QS practice.
3. Overlapping role with other professionals (e.g., Architects, Engineers).
4. Inadequate legal framework for QS practice.
5. Limited Government support and funding.
6. Limited public awareness of QS role and benefits.
7. Limited QS programs and institutions.
8. Inadequate curriculum and course content.
9. Limited practical training and experience.
10. Limited Research and Development in QS.
11. Brain Drain and shortage of Qualified QS lecturers.
12. Limited institutional capacity and resources.
13. Inadequate stakeholder engagement and participation.
14. Corruption and Bureaucratic manipulations and inefficiencies.

## **OVERVIEW OF QUANTITY SURVEYING SERVICES AND CLASSIFICATION**

Quantity surveying professionals offer a range of services to ensure projects are delivered on time, within budget, and to the required quality standards.

QS services can be classified into these following categories:

- Pre-contract services
- Post Contract services or Construction phase services
- Dispute resolution services
- Project close-out services.
- Post occupancy services .
- Specialist services– (emerging opportunities-such as sustainability and environmental advice and management).

Briefly, **PRE- CONTRACT SERVICES** of QS profession refers to the activities performed before the contract is signed, ensuring the project's viability, feasibility, and affordability.( feasibility studies, Providing Rough order of Magnitude (ROM) Estimates, tender documentation etc).

**POST CONTRACT SERVICES** refers to the activities and services provided during the construction phase of a project, after the contract has been awarded, These services ensure the project is completed on time, within budget and to the required quality standards.(such as Interim valuations and payment certifications, variation orders and change management etc)

**DISPUTE RESOLUTION SERVICES**-refers to services rendered as experts assistance in resolving disputes related to construction projects, focusing on cost, time and quality issues .this include( expert witness, mediator ,Arbitrator. Adjudicator , Dispute Analyst Claims consultant etc)

**PROJECT CLOSE-OUT SERVICES** –This involves ensuring the project is formally completed, documented, and handed over to the client , meeting all contractual and regulatory requirements ..such services include (final account preparation ,documentation and reporting, compiling project records ,documents lesson learned, identifying best practices and areas for improvement, resolving any outstanding disputes, warranty and defects liability period ,project evaluation in terms of project success and performance.)

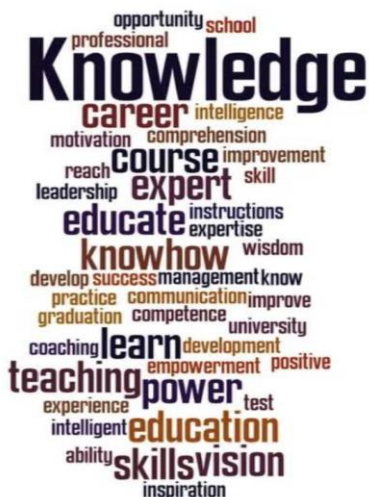
**POST-OCCUPANCY SERVICES** of Quantity Surveying professionals involves evaluating the performance of a building or facility after occupancy, identifying areas for improvement, and providing solutions to optimize its operation, maintenance, and lifecycle costs.

Services include:

1. Building Performance Evaluation (BPE): Assessing building performance against design intent.
2. Post-Occupancy Evaluation (POE): Evaluating occupant satisfaction and building functionality.
3. Facilities Management (FM) Support: Providing FM services, including maintenance cost and operational cost.
4. Lifecycle Cost Analysis (LCCA): Analyzing whole-life-cost, including maintenance, repairs, and replacement.
5. Assessment Management: Managing and optimizing building assets.

6. Sustainability and Energy Efficiency: Enhancing building sustainability and energy efficiency.
7. Space Utilization Analysis: Optimizing space usage and allocation.
8. Maintenance and Repair Planning: Developing maintenance and repair strategies.
9. Capital Expenditure Planning: Planning for future capital expenditures.
10. Disposal and Refurbishment Planning: Planning for building disposal or refurbishment.

All these afore listed services are not exhaustive, and may overlap or vary, depending on clients need.



## **CLASSIFICATION OF ESSENTIAL SKILLS, KNOWLEDGE AND COMPETENCIES.**

Future-proofing of Quantity Surveying skills, knowledge and competencies could be grouped under three major classifications:

- Core skills, knowledge and competences.
- Mandatory skills, knowledge and competences.
- Optional skills, knowledge and competences.

Quantity Surveyors should strive to develop a balanced set of skills, knowledge and competencies to deliver exceptional services and stay competitive in the industry. They should possess **soft skills and Hard skills** as CORE and MANDATORY Requirements .(ESSENTIALS)

So, what makes a good Quantity surveyor, it's certainly not just about the software that you are using or proficiency in digital tools. A good QS should possess traits and skills that set them apart from the average.

These attributes don't exist by accident or luck, they must be cultivated and integrated into your daily habits to ensure optimal yield.

Below I will explore 13 crucial Quantity surveyor qualifications for a successful career.

### **SOFT SKILLS:**

- **Communication and stakeholder engagement:** The profound ability to articulate clearly and concisely is among the most important duties of a QS, communication between relevant parties is crucial for successful project delivery, especially concerning the BIM workflow, where collaboration is at the core. Miscommunication is typically a contributing factor to an elongated project and wasted expenditure. With software like RIBCostX, construction communication is boosted, thanks to customizable reports that allow you to convey key insights to non –technical stakeholders; furthermore, various data visualization functions such as Ghost view, Revision overlay, and charts can aid communication efforts.
- **Numeracy & Analytics skills:** Qs needs to manage and optimize project costs to ensure the client or contractor gets the best return from their investment, To do so, they need to rapidly calculate and analyse figures to identify patterns and trends that will help to make the best cost

optimization possible, paired with that, a good QS needs to have a basic knowledge of finances to generate financial construction reports where numbers are looked at from a strategic and legal point of view, this perhaps is one of the most important Quantity surveyor traits.

- **Data –driven mind:** The ability to interpret and analyse data has become a core skill for Quantity surveyors, A Qs is traditionally adept at gathering its own data, but we’ re now seeing significant consultancies using historical project data to their advantage. On large projects, accumulated data can be used to make robust predictions that lead to shortened build duration, reduced costs, and improved project quality .Part of our future research direction should be on current usage of data analytics on significant projects because these principles will likely play an integral role in our profession’s future.
- **Strategic thinking and decision –making :**Another important soft skill is ability to think out-of – box, having critical and strategic thinking and applying it to decision-making, with software like Cost X, you can examine different cost features combined with the imminent “What if” scenario. Additionally, you can rely on a comprehensive audit trail, which includes revision logs, undo buttons, comparison reports, and quantity sourcing, to enable a swift and reliable response to impending red flags. Being responsive is a crucial feat in acquiring and retaining clients. Your clients must be reassured that any issues will be resolved immediately before they enter the terminal stage.
- **Attentive to detail (Meticulous):** This skill requires having an eye for details ,being industriously attentive to details enhances accuracy and reduces errors, with digital takeoff packages, human error is significantly reduced, however, vigilant supervision of details constitutes the overall success of a project as this will reflect strongly on you and your company’s image, conclusively influencing the customer experience, As the saying goes,” it takes years to build a good reputation but just seconds to destroy it”.
- **Composure (working under pressure) :**One of the duties of QS is meeting deadlines every day. Typically, a QS won’t have luxury of

working on one project at a time ,you will likely be juggling multiple projects simultaneously. Being composed and able to work under pressure permits you to tackle your work in prime condition, ensuring tasks are completed without compromising company standards. Being composed includes efficiently prioritizing and evaluating your tasks concurrently, showing commitment at every stage of your work, and ultimately, giving an underlying quality of perseverance, and with a comprehensive software package, this can often be all the easier to manage.

- **Negotiation skills:** One of the responsibilities of a QS in construction is to manage different types of construction contracts and secure the best deal for your clients and employers. To do so, you need to have excellent negotiation skills. This skill is often acquired with experience, however, if you come to a negotiation confidently and know what value you bring to the table, you can secure a fair deal for the project, once you become good at it, it will boost your profile and make you a more complete and sought-after Quantity surveyor.
- **Traditional industry knowledge:** Manual measurement techniques, which were once the bedrock of Quantity surveying, are not so common anymore, yet these fundamental skills must continue to be fostered. Paper plans, scale rulers, and highlighters still have their place in a modern QS operations. Manual measurement is often required at early project planning stages to establish feasibility or validate results at different points in the process .It's essential that these techniques do not become a lost art, as they can be a useful supplement to modern quantity surveying software, providing much-needed context to digital estimating processes, and may be helpful when collaborating with experienced professionals.
- **Organized:** Quantity surveyors must keep up with all figures, data, and paper work to give timely recommendations. You will need to whip out information instantaneously if you want to stay on top. A Qs need to organize work so that productivity is maximized. Today, QS play an increasingly significant part in project decision-making, so being organized should be part of your attributes and traits. If you are still using old –school systems or not using digital take off at all, you will find

yourself wasting time on trivial things. There are all-in-one estimating solution software packages that integrate take-off, estimating spreadsheets and customizable report with rate libraries seamlessly into one software package which will enhance productivity.

- **Humility;** Humility is about knowing your limits and having the poise to welcome the strengths and perspectives of the people around you. Working within such a dynamic market landscape, embracing new knowledge, technology and skills is vital, yet humility may be the most challenging talent to acquire simply because we fear it while seeking it- everyone wants to be humble and not to be humbled. One of the best ways to think about this is not to think less of yourself but to think of yourself less, too often , one can become stuck on the pre-existing methods they are using as they are convinced that they are the best approach, but it is very important always to be open to new ways of working within your profession.

- **Ethical conduct ;**Conducting oneself according to solid moral principles is one of the vital qualities of a QS, considering the broad range of stakeholders involved and responsibility to the public. In an industry striving to boost feasibility, recognition and relevance to unlock its potentials, everyone involved must pull in the same direction.

**The Royal Institutions of Chartered Surveyors (RICS) sets out five ethical standards that Quantity surveying professionals worldwide must adhere to:**

- Act with Integrity
- Always provide a high standard of service.
- Act in a way that promotes trust in the profession,
- Treat others with respect.
- Take responsibility

As QS become more involved in project management processes , the significance of these standards will likely increase in years to come.

- **Team orientated:** Being a QS means polishing not only your numeracy skills but also your team –building skills, like any other job, teamwork delivers enhanced performance beyond sheer sum of its members’ single contributions also known as “synergy effect”. With loads of construction

documents to handle, great teamwork facilitates delegating duties according to individuals' strengths and weaknesses. This way weaknesses can be minimized while leveraging strengths for improved efficiency and productivity. On the subject of construction collaboration, the uptake of BIM continues to grow worldwide as 5D BIM is staple of modern quantity surveying software, it can facilitate much-improved collaboration for project teams, including engineers, Architects, contractors and Quantity surveyors.

- **Technology –driven:-**Innovative and technology software is part of modern construction environment, therefore, without the right construction software solutions, and adoption of technology the efficiency and quality of professional services being rendered would not be the same, as a QS, you will need to be able to manage these technologies and use them to your advantage to be more efficient and accurate, being technologically savvy will give you a competitive advantage, as delivery times are faster and errors are mitigated.

- **POSER:** having gone through the above, How many Quantity surveyor skills can you confidently tick off?

Don't fret if you haven't scored full marks; capabilities can gradually be nurtured through determination and self-discipline, there are no proven short cuts to developing skills, however, with the right tools, and mindset you can start developing and rectifying your practices to become a respected QS at the top of your game.

As you have seen, Quantity surveying is a demanding and varied profession that requires a strong set of fundamental skills and accredited tertiary qualifications and professional certification to be the best., above all technology, can boost your skills and take your competencies as a QS to the next level.

## **HARD SKILLS:**

### **Digital and technical solution skills**

1. Qs should have skills, knowledge and competence in construction solution tools such as
  - (i) Building Information Modeling (BIM)
  - (ii) Computer-Aided Design (CAD)

- (iii) Cloud-based collaboration tools and Artificial Intelligence (AI) and Machine Learning (ML).
  - (iv) Software proficiency:
2. ***Project Management Software*** such as
    - (a) MS project - for advance project scheduling resource allocation and tracking.
    - (b) Base camp – for comprehensive project management, message board and schedule, file sharing and collaboration.
    - (c) Trello – For integration with third party apps and visual project boards.
    - (d) Asana – for Task and project tracking, team collaboration, and work flow automation.
    - (e) Smart sheet – project scheduling and tracking, resource allocation and management, integration with google, sheets and excel
  3. ***Cost Estimation and Management software:*** such as Autodesk, Revit, Bluebeam, PlanGrid, Procore, Autodesk Quantity Takeoff etc all these are useful tools for emerging Quantity surveying professionals in estimating, automated quantity takeoff, integrating accounting system etc.
  4. ***Contract Management software*** e.g., contraWorks.
  5. ***Document manage systems*** e.g., sharePoint.

These project software solutions are developed for comprehensive project planning, scheduling, resource allocation, improve project delivery, cost management, risk management collaboration, reporting, scalability and flexibility. However, acquisition of these software could be expensive and proficiency requires some training and certification.

### **Professional Skills**

- Ethics and professionalism: Upholding professional ethics and standards.
- Integrity and objectivity: Maintaining impartiality and objectivity



## COMPETENCY FRAMEWORKS AND STANDARDS FOR QUANTITY SURVEYING PROFESSIONALS

A competency framework outlines the essential skills, knowledge, and behaviors required for Quantity surveyors to perform effectively. It serves as a roadmap for professional development, ensuring individuals possess the necessary competencies to adapt to changing industry demands.

The competency standards for Quantity surveyors provide the basis for the development and evaluation of the level of competence expected of Quantity surveyors globally. These standards outline the professional requirements for QS professionals, including ,conducts, ethics, integrity, and competence.

Listed below are some key frameworks and standards:

- **Nigerian institute of Quantity surveyors (NIQS)** outlines code of conduct, ethics and professional standards for QS professionals.
- **Royal Institution of chartered surveyors (RICS)** outlines the skills, knowledge and behaviours required for QS professionals.
- **Australian Institute of Quantity surveyors (AIQS)** outlines the development and evaluation of competency standards expected of a QS.
- **Canadian Institute of Quantity Surveyors (CIQS)** outlines the skills, market knowledge and standards required for QS professionals.
- **Pacific Association of Quantity Surveyors (PAQS)**- set competence frameworks and standards for QS in Asia-Pacific region to develop and evaluate their skills and knowledge to demonstrate their competence.

- **International Cost Engineering Council (ICEC)**-This framework provides a global perspective on the competencies required for QS professionals.
- **Chartered Institute of Building (CIOB). –Quantity surveyor competency framework (QSCF)** – Developed by CIOB also defines the competencies and professional conduct and ethics expected of QS professionals.

The development of competency standards for the profession serves many purposes, but fundamentally it provides the profession with the opportunity to:

- Define the competencies (core, mandatory, and optional/specialist) required by the industry.
- Evaluate the training programs available to those wishing to enter the profession.
- Review the skills of practitioners and firms and identify their training needs.

These standards may also be used to identify skills which will be needed in the future, directions for professional development, and registration requirements for individuals and firms.

However, the main objectives and intention of these standards is to **PILED** ( i.e to strengthened) the profession of QS. This acronym **PILED** means

**PROMOTE**- Quantity surveying as indispensable to value-added services in the construction process and economy.

**INFORM** - the community and stakeholders of the benefits of total construction cost management.

**LEAD** - the development and promotion of the discipline of Quantity surveying, construction economics and cost engineering.

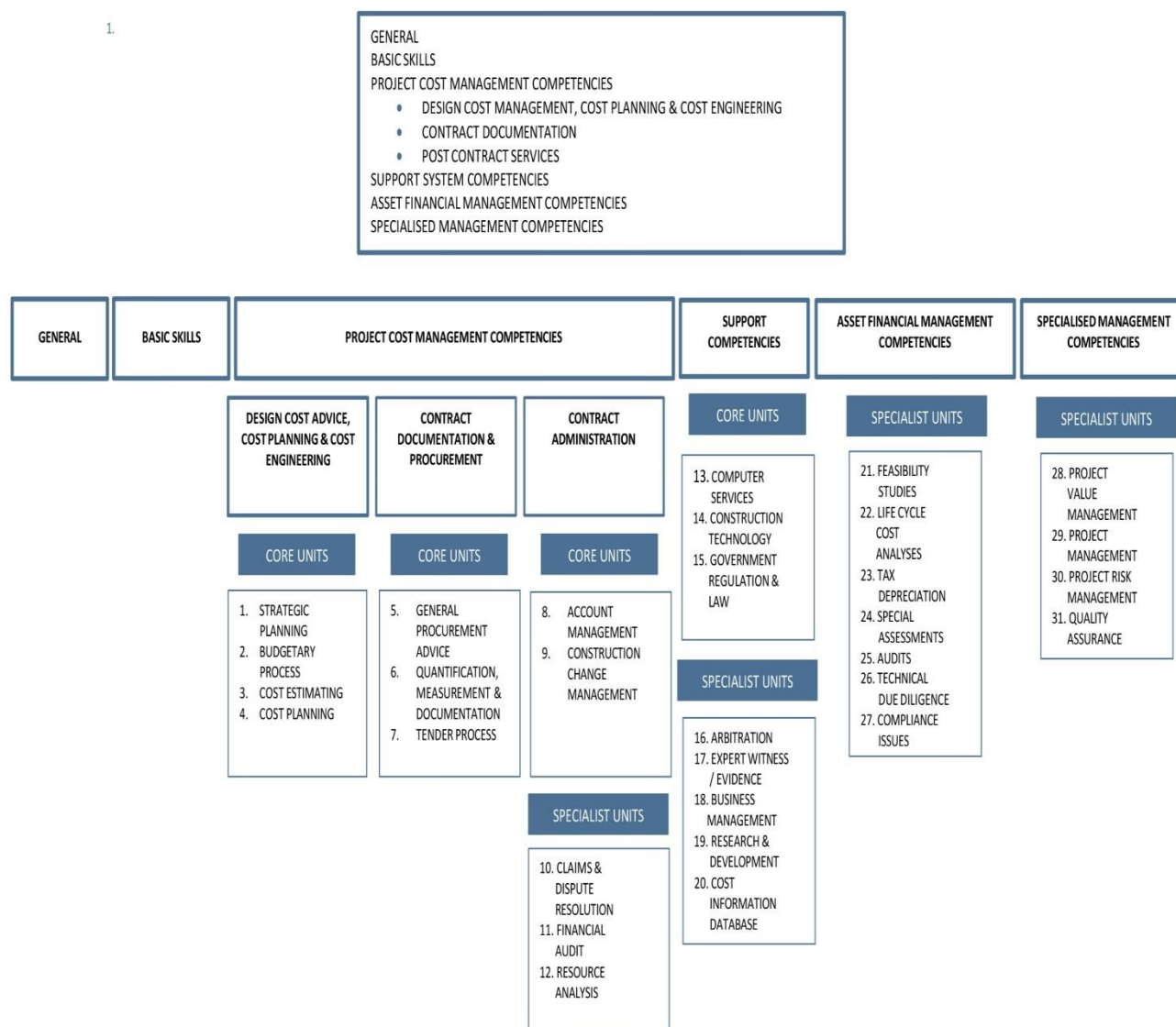
**ENCOURAGE** - the efficient and sustainable use of all construction resources.

**DEVELOP** - and maintain standards of excellence and best practices in the profession.

The following competency standards outline the skills required by Quantity surveyors in providing professional services to the property and construction industries and are broken down into units of competency.

## COMPETENCY STANDARDS FOR QUANTITY SURVEYORS

1.



The many competencies outlined in the diagram above may be acquired by individual Quantity surveyor over a lifetime of professional practice, education and training.

It is instructive to state that most QS should have attained the competencies listed as CORE or Essential, either after graduation from their Tertiary course and perhaps in their first 5-10 years of on-the-job training in professional employment under experienced supervisor/mentor.

A number of other competencies are specialized and therefore optional and might be acquired by QS working in a specific area or on particular sector or projects.

It is therefore unlikely that all these competencies will be found in any one Qs. However, in many Qs practices the balance of these competencies is likely to be provided by pooling all the skills of the various staff.

**Other competencies that could help address knowledge gaps in the quantity surveying profession:**

1. Digital skills: Many QS professionals may not have the necessary skills to work with digital technologies such as BIM, AI and Data Analytics.
2. Sustainability and Green Building: QS professionals need to develop their knowledge of sustainable building practices, green building certifications and energy-efficient design.
3. International construction practices: QS professionals need to develop their knowledge of international construction practices ,laws and regulations.
4. Risk management: QS professionals need to develop their knowledge of risk management techniques, including risk assessment ,mitigation, and management.
5. Communication and collaboration:-QS professional need to develop their communication and collaboration skills to work effectively with other professionals.
6. Cost management:-QS professionals need to develop their knowledge of cost management techniques, including cost estimation, budgeting and control.
7. Procurement and contract management:- QS professionals need to develop their knowledge of procurement and contract management., including contract law, negotiation and dispute resolution.
8. Software applications - QS professionals need to develop their knowledge of cost estimation soft wares, including its application and project management soft wares.
9. Data Analysis and visualization:- QS professionals need to develop their knowledge of data analysis techniques including data mining, Machine Learning and data visualization.
10. Construction Technology:- QS professionals need to develop their knowledge of construction technology, including emerging technologies such as robotics, drones, smart building, internet of Things etc.
11. Leadership and Management:-QS professionals need to develop their leadership and management skills to lead and manage project teams effectively.
12. Business development and marketing :- QS professionals need to develop their knowledge of business development and marketing, including market research, marketing strategies and sales techniques.

**However, to address these knowledge gaps, QS can**

- Participate in continuing professional development (CPD) courses and training programs.
- Attend industry conferences and seminars
- Read industry publications and books.
- Join professional organizations and Networks.
- Pursue Postgraduate education and certifications.

**SKILLS, KNOWLEDGE & COMPETENCE ACQUISITION METHODS:**

1. Formal Education at The Polytechnic, or University level in Quantity surveying, Postgraduate diplomas and certifications and Professional doctorates.
2. Continuing Professional Development:-
  - Training programs
  - Workshops and seminars
  - Conferences and symposia
  - Distinguished lecture series
  - Online courses and Webinars
  - Industry events, trade shows and Exhibitions – BIG5 CONSTRUCT - In-house training and Mentoring
3. Informal Learning:-
  - On –the-job training and Experience
  - Mentorship and coaching
  - Networking and peer learning
  - Industry publications and journals
  - Online forums and discussion groups
4. Self-Directed learning:-
  - Online courses and tutorials
  - Professional books and Textbooks
  - Research papers and articles
  - Industry reports and whitepapers
  - Podcasts and video lectures
5. Collaborative Projects and Team work
6. Internships and job rotations

The above listed are compulsory and essential platforms Quantity Surveying Professionals could embrace to sharpen and expand their scope of professional skills , knowledge and competence to be able to perform effectively as a professional.

## **CHARACTERISTICS OF SKILLS, KNOWLEDGE AND COMPETENCE REQUIREMENTS FOR QUANTITY SURVEYING SERVICES**

- (i) *Essentiality*: Mandatory requirements are fundamental to performing the job.
- (ii) *Measurability*: The requirements can be assessed and evaluated.
- (iii) *Specificity*: Clearly defined and unambiguous.
- (iv) *Relevance*: Aligned with industry standards and best practices.
- (v) *Up-to-Dates*: Reflects current and emerging trends.

**ESSENTIALITY** –*This refers to the criticality or necessity of specific skills, knowledge or competences required to perform a task or provide a service effectively. Such as technical competence, proficiency in measurement , costing and estimation, professionalism i.e adherence to ethical standards ,codes of conduct, and industry regulations.*

**MEASURABILITY**-*This refers to the ability to quantify, evaluate ,and compare performance, outcomes or attributes against established standards or criteria such as evaluate project performance and progress, provide transparent and verifiable reports, by emphasizing measurability ,QS professionals demonstrate their commitment to delivering high-quality services, protecting clients’ interests and upholding industry standards.*

*Measurability in Quantity surveying is often evaluated through key performance indicators (KPIs) such as-1Measuremet accuracy,2.Estimation accuracy,3.Cost Variance.4 Project timeline adherence.5 Client satisfaction.*

**SPECIFICITY**-*This refers to the clear and precise requirements needed to perform a task or provide a service,, this is unambiguous descriptions of skills and knowledge explicit for each task or service in line with relevant project-specific considerations ,it helps to reduce misunderstanding and disputes, errors and professional liability, to ensure specificity use clear and concise*

language, to define precise scope of work, and establish measurable performance indicators.

**RELEVANCE**-This refers to the alignment of skills, knowledge and competences with the specific needs and context of a project , client ,or industry, this relevance ensures that professionals have contextual understanding and familiarity with project specific requirements, it also requires understanding of market trends and knowledge of industry –specific practices and standards..

**UP-TO-DATE**- This refers to the currency and relevance of skills, knowledge and competences in relation to the latest industry developments, technologies and best practices Up –to –date will ensures that the professionals possess current knowledge of construction methods and materials, understand latest industry standards and regulations, apply modern measurement and estimation techniques, utilize relevant software and technologies so as to provide accurate and reliable cost advice.

UP-TO –DATE in QS is evaluated through the following KPIs 1.Continuing professional Development (CPD) hours, 2,Industry certification and accreditation. 3 software and Technology proficiency. 4. Regulatory compliance and 5. Client satisfaction rating.

○

## **CONSEQUENCIES OF NON –RESPONSE TO CORE AND MANDATORY SKILLS, KNOWLEDGE & COMPETENCES REQUIREMENTS**

### ***Professional consequences:***

1. Reduced career advancement opportunities.
2. Decreased earning potential.
3. Professional obsolescence.
4. Limited job prospects.
5. Loss of Professional Certification and licensure.

### ***Project Consequences:***

1. Cost overruns and budget discrepancies.
2. Delayed project completion.
3. Quality control issues.
4. Increased Risk of Disputes and litigation.
5. Failure to meet client expectations.

***Business consequences:***

1. Loss of Business reputation and credibility.
2. Decreased client trust and confidence.
3. Reduced competitiveness.
4. Financial losses and instability.
5. Business closure or Bankruptcy.

***Industry consequences:***

1. Lack of standardization and best practices.
2. Decreased innovation and Technological adoption.
3. Inefficient use of resources.
4. Increased risk of accidents and safety hazards.
5. Negative impact on the built environment.

***Personal consequences:***

1. Stress and Anxiety.
2. Decreased job satisfaction.
3. Loss of personal credibility and reputation.
4. Reduced self –confidence.
5. Emotional and mental well-being impacts.

***Regulatory consequences:***

1. Fines and Penalties.
2. Non –compliance with laws and regulations.
3. Legal action and litigation.
4. Loss of professional accreditation.
5. Disciplinary action by professional bodies.

However, there are upsides of meeting these core and mandatory requirements of skills, knowledge and competences requirements of Quantity Surveying Professionals such as:

- Enhanced professional credibility
- Improved job performance
- Increased client trust
- Better decision making
- Advancement of opportunities and patronage

- Increased adaptability to changing market conditions
- Increased innovation and Entrepreneurship
- Better risk management and mitigation
- Enhanced sustainability and environmental management.

By meeting all these core and mandatory requirements, Quantity Surveyors will be demonstrating their commitment to excellence and their services will be valuable.



**OPTIONAL SKILLS, KNOWLEDGE AND COMPETENCE THAT WILL ENHANCE RELEVANCE OF QUANTITY SURVEYING PROFESSION IN CONSTRUCTION INDUSTRY**

Optional skills are additional skills, knowledge or certifications that enhanced Quantity Surveying Professionals expertise, competitiveness and versatility.

Traditionally, Qs have focused on cost management, measurement and estimation, however the evolving construction revolutions and increasing stakeholders expectations, demands that it is expedient for Quantity surveying Professionals to diversify and acquire more skill sets to remain relevant and survive turbulent economic landscape.

By gaining optional skills, knowledge and competence, Quantity Surveying Professionals can stand out, stay up-to date with developments and enhance their overall career prospects. Other benefits of gaining optional skills, knowledge and competencies include but not limited to the following:

- Increased earning potentials
- Improved job satisfaction
- Expanded professional network
- Adaptability to changing industry and stakeholders' demands.
- Competitive advantage in the industry and job market.
- Demonstrated commitment to lifelong learning.

**Optional competencies** that Quantity surveying professionals could leverage on in turbulent economy includes but not limited to the following:

- Sustainability and Environmental management
- Procurement Management
- Construction law
- Dispute resolution , Arbitration, Mediation and Adjudication
- Business Development and Marketing
- Information Technology and Software Development
- Data science and Analytics
- Web Development
- Robotic Engineering
- Building Information Modelling
- Construction safety and Health
- Risk Management (Insurance and loss adjustment)
- Financial Advisor
- Block chain Technology
- Claims Management

- Transportation Planning
- Smart Buildings and Cities
- Energy efficiency consulting
- Carbon Assessment and Reporting
- Environmental Impact Assessment
- Marketing and Sales
- Entrepreneurship
- Community Development (politics)
- Foreign languages
- Public speaking.

## **METHODS OF ACQUIRING OPTIONAL SKC FOR QS PROFESSIONALS:**

### **Digital skills**

1. Online courses: Autodesk, BIM, Revit, Etc
2. Software training : Excel, Primavera, Ms Project.
3. Digital construction certifications: Digital Twin
4. Data analysis and visualization: Tableau, Power BI
5. Programming languages: Python, JavaScript. Etc

### **Sustainability and Green Building**

1. LEED AP certification
2. Green Building certifications
3. Sustainability training: energy efficiency, renewable energy ,carbon assessment and reporting etc
4. Environmental Impact assessment
5. Green Building design and construction.

## **Procurement and Project Management**

1. Procurement management certification.
2. PMP certification
3. Agile project Management
4. Scrum master certification.
5. Project planning and scheduling.
6. Risk management and mitigation

## **Leadership and Management**

1. MBA or MSc in Construction Management.
2. Leadership development programs.
3. Executive coaching.
4. Conflict resolution and Negotiation
5. Emotional intelligence and well-being.

## **International standards and Best Practices**

1. Quality Management (ISO 9001)
2. Environmental Management.(ISO 14001)
3. Occupational Health and Safety.(OHSAS18001)
4. International construction codes and standards.
5. Best Practices in Quantity Surveying.

## **Innovation and Technology**

1. Artificial intelligence and Machine Learning.
2. Internet of Things
3. Virtual augmented reality.
4. Construction technology startups and entrepreneurship.

## **Specialized knowledge**

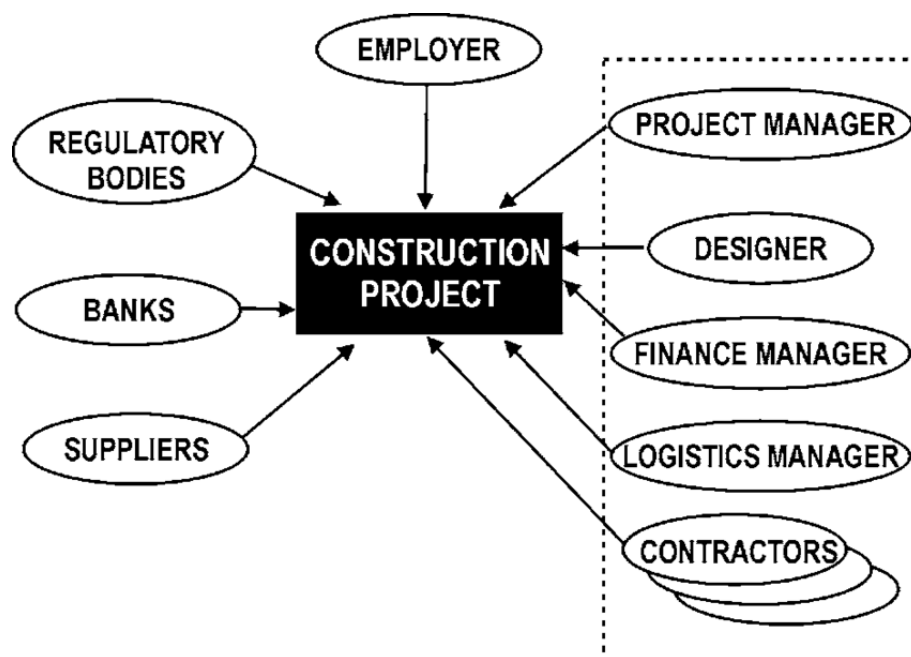
1. Construction Law and contracts.
2. Loss Adjustment skills in Insurance industry.
3. Cost management of Heavy and Process Engineering.
4. Forensic accounting and dispute resolution.
5. Investment Appraisal and Analysis:- evaluating construction projects for investment potential, analyzing project financials, including costs , revenues and returns, providing recommendations on investment decisions. Etc
6. Financial Planning and Budgeting:- creating financial models and forecasts ,developing and managing project budgets, ensuring compliance with financial regulations and standards.
7. Financial Reporting and Project Auditing: Tracking project progress, performance and addressing deviations from budget and schedule, regular financial audits and reviews, compliance with financial reporting standards and regulations. etc
8. Web developer:-as a Qs transitioning to web development in QS specific web development applications such as programming languages, Web frameworks, Databases etc to enhance cost estimation and budgeting tools, construction project management, online collaboration platforms, construction data analytics and visualization platforms, competence on this could afford Qs professional a role as Front-end developer, Back-end developer, Full-stack developer, Project Manager or Technical lead in an organization.

However, all these optional skills, knowledge and competencies needs some level of training and certifications, though it may be expensive, leveraging on these skill sets can add significant value, create innovative solutions to clients and enhance



Quantity Surveying Professionals career prospects, versatility, expertise, relevance and success.

### **WHAT ARE THE STAKEHOLDERS EXPECTATIONS FROM QUANTITY SURVEYING PROFESSIONALS.**



In the construction Industry, Stakeholders refers to individuals, organizations or groups who have vested interest in the success or outcome of a construction project, they can be categorized into;

### ***PRIMARY STAKEHOLDERS***

- Project owners/Developers
- Contractors/Builders
- Architects
- Engineers (structural, mechanical, Electrical etc)
- Project Managers
- Quantity Surveyors/Cost Engineers
- Financiers/Investors.

### ***SECONDARY STAKEHOLDERS***

- Sub contractors
- Suppliers and services providers
- Labour Unions /Workers
- Regulatory Bodies (Government agencies, permitting authorities)
- Inspection/Code Enforcement officers
- Neighboring property owners/ Residents
- Environmental Groups/community organizations

### ***TERTIARY STAKEHOLDERS***

- End- Users/ occupants (tenants, customers etc)
- Local authorities (municipal, state, federal)
- Utility companies (Electricity, water, gas etc)
- Emergency services (fire, police, ambulance)
- Future (Long term impact on community and environment).
- Other stakeholders
- Insurance companies
- Bonding companies
- Sureties
- Arbitrators, Mediators (Dispute resolution)
- Community leaders and Activists.

All these stake holders are classified based on considerations such as:

- level of influence
- level of interest
- Impact on the project
- Geographical proximity
- Temporal improvement (short-term or long –term)

We have examined the characteristics of a turbulent economy ,causes and impact on QS professionals, but we need to look at the downside of these challenges on the stakeholders:

### **DEVELOPERS**

- Reduction in demands and lower profits

### **CONTRACTORS**

- Cost over-runs
- Adaptability and Resilience
- Dispute and legal issues
- Reduced workload and patronage leading to cash flow issue or Insolvency

### **PROFESSIONALS**

- Dispute and conflicts
- Adaptability and resilience
- Reduced workloads/ redundancy and staff lay-off

### **SUPPLIERS**

- Reduced sales, inventory management challenges

### **LABOURERS/CONSTRUCTION WORKERS**

- Job insecurity/reduced wages

## **FINANCIERS**

- Increased risk, and reduced lending

## **GOVERNMENT**

- Project cost escalation
- Reduced tax revenue, infrastructure delays and abandoned projects

## **END USERS**

- Delayed or cancelled projects
- Reduced affordability.

**However, the stakeholders in construction industry have some measure of expectations from Quantity surveying Professionals in this turbulent economy in relation to:**

- Cost savings and Optimization
- Risk Management and Mitigation
- Flexibility and Adaptability
- Innovative solutions and Value Engineering
- Strategic Planning and Forecasting
- Improved cash flow management
- Reduced project delays and disputes
- Increased transparency and accountability
- Compliance with regulatory requirements
- Accurate cost estimation and Budgeting
- Effective cost control and management
- Timely and reliable reporting
- Expert advice on Procurement strategies
- Value-added services
- Dispute resolutions mechanism

- Innovative and sustainable solutions

These expectations however could be scaled down to CURRENT and FUTURE Expectations which meant different value additions and benefits to different stakeholders.

#### - **CURRENT EXPECTATIONS:**

##### **From Clients/Project owners**

- Cost optimization and value for money.
- Risk Management and Mitigation
- Accurate cost forecasting and Budgeting
- Efficient project delivery and Timeline management
- Transparency and accountability in financial management.

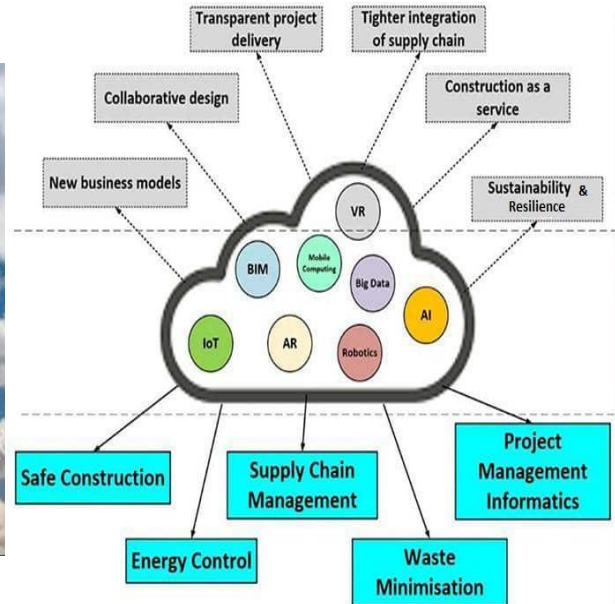
##### **From Contractors /Builders**

- Fair and timely payment for works completed
- Clear and comprehensive contract documentations.
- Realistic and achievable project timelines.
- Effective claims management and variation control.
- Prompt claims settlement/management
- Collaborative dispute resolution.

##### **From Project Managers**

Accurate cost reporting and forecasting

- Effective Risk management and Mitigation
- Effective coordination of tendering and procurement processes.
- Efficient contract administration and compliance
- Schedule and Timeline management.



## FUTURE EXPECTATIONS

### 1. Digital Transformation

- Adoption of digital tools for enhanced efficiency.
- Data-driven decision -making and Analytics.
- Integration with emerging technologies (IoT, Block chain, cloud computing, Machine Learning (ML), Digital Twin Technology, Artificial Intelligence (AI) etc

### 2. Construction Technologies:

- Modular and Prefabricated construction
- Robotics and Automation
- Autonomous vehicles and Drones
- Advanced surveying Technologies
- Construction Robotics and Exoskeletons
- Smart buildings and cities.
- Advanced materials and Nanotechnology.

### 3. Project Management and collaboration :QS could leverage on :

- Project management software (Asana, Trello, click, primavera, Microsoft project, Basecamp, Smart sheet, Jira , Wrike etc)
- Collaboration platforms (e.g., **slack**, -Real-time messaging, file sharing and collaboration.)

(**Microsoft Teams** –Team collaboration and communication, Meeting and video conferencing, file sharing and storage ,etc)

(**Notion**-for collaborative document editing, task management, all-in-one workspace for notes, tasks and projects. etc)

**Figma** –cloud-based design and prototyping, Real-time collaboration and commenting, integration with other design tools (e.g., sketch, Adobe XD etc)

**Mural**- for Digital workspace for collaboration and ideation, virtual whiteboards and sticky notes, Real-time collaboration and feedback)

- **Document management systems**(e.g., share point-for centralized repository it store and manage documents in a single , secure location, track changes and maintain documents history, it prevent simultaneous editing and ensure documents integrity).

- Virtual meetings and communication ( e.g., Zoom)

- Mobile Apps for site management and Inspection

- Automated reporting and Dash boarding

- Integrated Workflow management systems

- Supply chain management software

- Customer Relationship Management (CRM) Systems.

#### 4. **Safety and Risk Management Technologies:**

- Wearable safety Devices

- Site Monitoring and surveillance systems

- Predictive Analytics for Risk management

- Biometric sensors for workers health monitoring

- Advanced fall protection systems

- Emergency Response and crisis management system

- Insurance and Liability management platforms

- Virtual safety training and simulation

- Automated Hazard Detection and Alert systems

- Real-Time location systems (RTLS)
  - Business continuity planning and disaster recovery.
5. **Sustainability and Environmental Technologies**
- Green Building Materials and systems
  - Energy –Efficient HVAC and Lighting systems
  - Water conservation and management systems
  - Waste reduction and Recycling technologies
  - Sustainable Transportation and logistics
  - Environmental monitoring and simulation
  - Carbon capture and utilization
  - Renewable Energy systems (e.g., solar, wind etc)
  - Smart grids and Energy storage
  - Circular Economy and Waste-to-Resources Technologies
6. **Innovative Procurement and Contracting**
- Alternative procurement methods-(PPP ,IPD-Integrated Project Delivery), ECI,CMAR,EPC etc
  - Collaborative contracting
  - Dispute Resolution (mediation now being popularized against Arbitration)
  - Early contractor involvement
  - Adaptability, scalability and Resilience to changing market conditions.
7. Whole- life costing and asset management-Developing new approaches to whole-life costing and asset management.
8. **Professional Development**
- Continuing Professional Development and up skilling
  - Developing future-focused curricula for Quantity surveying education
  - Encouraging lifelong learning and skill development

- Diversification of services, expanding into new sectors, developing expertise in adjacent fields, offering qualitative advisory and consulting services.

## **STRATEGIES FOR FUTURE-PROOFING OF QS PROFESSION**

Future-proofing the QS profession requires strategic planning, adaptability and innovation. Having identified, the challenges, skills, and knowledge gaps in QS industry trends, there must be an intentional and deliberate approach to create skill development plan and set SMART objectives;

- **SPECIFIC**
- **MEASURABLE**
- **ACHIEVABLE**
- **RELEVANT**
- **TIME-BOUND** objectives so as to re position the profession for continuing relevance.

**Listed below are some strategies to ensure relevance and resilience:-**

- 1. TECHNOLOGICAL ADVANCEMENT:- Embracing digital transformation and develop digital skills.**
- 3. SUSTAINABILITY AND ENVIRONMENTAL CONSIDERATIONS:-** Integrating sustainability principles into QS practices, developing green building expertise, staying up dated on sustainable materials and promoting circular economy practices.
- 4. INNOVATIVE BUSINESS MODEL:-** Diversifying services into new areas such as project management, Risk management, and Dispute resolution, developing niche expertise by specializing in emerging markets such as infrastructure, renewable energy etc
- 5. COLLABORATIVE PARTNERSHIP :-** Fostering strategic alliance with Architects, Engineers, Developers and contractors.
- 6. TALENT ATTRACTION AND DEVELOPMENT:-** Attracting diverse talent by encouraging entry from non-traditional backgrounds and demographics. Strategic designing of mentorship programs by pairing

experienced QS professionals with new comers and encouraging life-long learning.

7. **GLOBALIZATION AND INTERNATIONALIZATION:-**

8. Establishing relationship with international organization (Global networking )

Participating in global projects and partnership. (cross-border collaboration ) and developing cultural competence by understanding local market nuances and regulations.

9. **PROFESSIONAL DEVELOPMENT & CERTIFICATIONS:-**

Enhancing relevant certification programs and specialized certification in emerging areas such as Green building certifications and Digital construction .Also encouraging lifelong learning and continuing professional development.

10. **INDUSTRY ENGAGEMENT AND ADVOCACY:-**Engaging and collaborating with industry stakeholders to promote QS profession's value and contributions.

11. **ADAPTABILITY AND RESILIENCE :-** Staying agile by responding promptly to changing market conditions, and encouraging experimentation and innovation

12. **EDUCATE AND RESEARCH :-** Updating curricula to reflect industry's changes and emerging trends. Fostering academic-industry partnership and knowledge sharing by publishing articles, journals, presentations and research findings on best practices, value –added services /contributions of QS as communique to relevant stake holders

**By implementing these strategies, the QS profession can Future-proof itself and remain a vital part of the construction industry.**



### **CONSEQUENCIES OF FAILURE TO FUTURE-PROOF QUANTITY SURVEYING SKILLS, KNOWLEDGE AND COMPETENCIES.**

Failure to future-proof Quantity surveying profession in a Turbulent economy can have severe threatening impact on the survival and relevance of the professional QS Firms and Individuals and by extension the construction Industry.

These Consequences could be classified into:

ECONOMIC CONSEQUENCIES

PROFESSIONAL CONSEQUENCIES

INDUSTRY CONSEQUENCIES

SOCIETAL CONSEQUENCIES

## - **Economic**

Such failures could lead to

- **Obsolescence:**-Quantity surveyors risk becoming irrelevant as technology and innovative practices render traditional methods obsolete.
- **Reduced competitiveness:**-Inability to adapt to changing market conditions and technological advancements will lead to decreased competitiveness.
- **Loss of Business:**- Clients will seek services from more innovative and tech-savvy providers.

## **Professional**

- **Skill gap:**-Quantity surveyors will struggle to keep pace with industry developments, exacerbating skills shortages.
- **Decreased credibility:**-Failure to adapt will erode trust and credibility among clients and stakeholders.
- **Stagnation:**-Professionals will miss opportunities for growth and development.

## **Industry**

- **Inefficiency:**-Outdated practices will lead to inefficiencies, and delays .
- **Reduced Innovations,** lack of investment in research and development will stifle innovation.
- **Brain Drain:**-Talented professionals will flee the industry in search of more dynamic and forward-thinking sectors.

## **Societal consequences**

- **Suboptimal infrastructure:**- outdated practices will result in subpar infrastructure development
- **Environmental impact:**-Failure to adopt sustainable practices will exacerbate environmental degradation.

- Economic instability:-A struggling construction industry will have far reaching economic implications.



## **ROLE OF NIQS and QSRBN IN FUTURE-PROOFING THE PROFESSION OF QUANTITY SURVEYING**

The role of these two prominent bodies in future-proofing the skills, knowledge and competencies of the professionals involved could not be over emphasized, leveraging on the ideas of the founding fathers of the profession and the expectations/relevance that the profession has brought to bear in the economy landscape of the country and construction sector, it is therefore expedient that the skills set that will continuously position this profession's relevance and survival must be the type that will give value for investment and meet the stakeholders expectations technically, ethically and innovatively.

Therefore, NIQS AND QSRBN have undeniable, uncompromised and unambiguous role as a training and regulatory platform for Quantity Surveying profession in areas such as:

- **NIQS Roles:**
  1. Developing industry standards and guidelines.
  2. Defining and promoting Qs competencies.

3. Conducting Professional examinations, assessment and certification
4. Encouraging membership engagement and participation (like volunteering in cost Data bank project).
5. Setting professional standards and guidelines.
6. Developing and implementing Continuing Professional Development (CPD).
7. Conducting research and publishing industry reports.
8. Organizing conferences, workshops and seminars to keep up with the trends in the sector.
9. Providing mentorship and coaching programs.
10. Collaborating with international organizations for reciprocity and exchange program of knowledge transfers on evolving international best practices.
11. Promoting sustainability and innovation in Quantity surveying practices.
12. Enhancing professional ethics and conduct.

#### **QSRBN Roles:**

1. Enforcing compliance with professional standards and regulations.
2. Registering and regulating Quantity Surveyors in Nigeria.
3. Investigating and disciplining of unethical practices.
4. Maintaining a data base and recommendation of registered Quantity surveyors for stakeholders engagement.
5. Guidance on Professional development and training.
6. Collaborating with NIQS ,and other stakeholders.
7. Political engagements and lobbying to legislate on the compulsory use of QS stamp on all Bill of Quantities for Government development projects.

However, there are area of *joint initiatives, responsibilities and collaborations* involving these two esteemed bodies in:

1. Developing a National Quantity Surveying Strategy.
2. Establishing a Quantity Surveying Research and Development fund.



3. Diversify your skills; Develop skills in multiple areas such as cost management, risk management , sustainable practices and green building practice, Procurement & Contract mgt , Arbitration and project management .etc
4. Network and collaborate; Build relationships with other professionals and stakeholders to stay informed and find new opportunities.
5. Pursue Continuous Professional Development (CPD); stay current with industry trends and best practices.
6. Embrace and display impeccable professionalism via high professional standards and conducts., (integrity is key to Business success)
7. Encourage Mentorship scheme; Bring up young professionals

#### **FOR QUANTITY SURVEYING FIRMS:**

1. Innovate and adapt; stay ahead of the curve by embracing new technologies and innovative practices
2. Diversify your services; offer a range of services such as Claims management, loss adjustments for Insurance companies, ,financial advisors etc
- 3 .Develop Strategic partnership ;Collaborate with other firms and stakeholders to access new markets and opportunities.
- 4.Invest in digital transformation; Implement digital technologies to improve efficiency, productivity and client service.
- 5 .Focus on sustainability ; Emphasize sustainable practices and green building to attract environmentally conscious clients and global markets.

#### **FOR CONSTRUCTION INDUSTRY STAKE HOLDERS ;**

1. Embrace digital transformation: Adopt digital technologies to improve efficiency, productivity, and collaboration.
2. Invest in sustainability: Prioritize sustainable practices and green building to reduce environmental impact.
3. Foster collaboration: Encourage collaboration and communication among stakeholders to improve project outcomes.

4. Develop resilient supply chains: Build robust supply chains to mitigate risks and ensure project continuity
5. Support innovation: Encourage innovation and R&D (Research& Development) to drive industry growth and improvement.

#### **FOR GOVERNMENT AND REGULATORY BODIES;**

1. Encourage innovation; support innovation and R&D in the construction industry.
2. Provide clear guidance; offer clear guidance and regulations to support industry growth and development.
3. Invest in Infrastructure; Invest in infrastructure development to support economic growth and industry development.
4. Promote sustainability; Encourage sustainable practices and green building through incentives and regulations.
5. Support workforce development; provide training and education programs to support workforce development and industry growth.

#### **FOR CLIENTS AND INVESTORS;**

1. Prioritize sustainability: Emphasize sustainable practices and green building in your projects.
2. Encourage innovations: support innovation and R&D In the construction industry.
3. Foster collaboration among stakeholders
4. Invest in digital transformation; support digital transformation in the construction industry to improve project outcomes.
5. Develop resilient supply chains; Build robust supply chains to mitigate risks and ensure project continuity.

By acknowledging the realities of industry's competitions, changes, stakeholders increasing demands and technological disruptions of the sector Quantity Surveyors can adapt and strategize for the future by:

1. Embracing digital transformation and Technology.
2. Developing expertise in sustainability and Green construction.
3. Enhancing risk management and mitigation skills.

4. Fostering Innovation and Entrepreneurship.
5. Improving communication and collaboration skills.
6. Developing strategic partnerships and collaborations.
7. Investing in research and development.
8. Enhancing Professional development and education.
9. Strategic marketing of Quantity surveying profession as competent custodian of cost and quantum in construction industry.

According to Carl Rogers “ The only person who is educated is the one who has learned how to learn and change”

As Quantity Surveying professionals, we should disabuse our minds from defeatist approach to continuous learning, education and career development so as to remain relevant and successful in our chosen and interesting profession.



### **TAKE HOME POINTS**

To navigate economic, uncertainty, competition and volatility, QS must have advanced problem-solving skills, knowledge and competence by :

- Outside-the –box thinking and idea generation
- Understanding market trends and dynamics
- Identifying business opportunities and threats

- Evaluating alternative solutions
- Making informed decisions with incomplete data
- Managing Stakeholders expectations
- Embracing change and uncertainty
- Understanding Construction Market dynamics
- Familiarity with digital construction tools
- Continuous learning and professional development
- Staying calm under pressure
- Exhibiting high professional and moral standards

**HERE ARE SOME POTENTIAL FUTURE RESEARCH DIRECTIONS FOR THE QUANTITY SURVEYING PROFESSION:**

1. **GLOBALIZATION AND INTERNATIONALIZATION:** Examining the challenges and opportunities of QS in a globalized construction industry, including international procurement, contract management, and dispute resolution.
2. **RISK MANAGEMENT AND RESILIENCE:** Developing new approaches to risk management and resilience in construction projects, including the use of data analytics and machine learning.
3. **COLLABORATIVE AND INTEGRATED PROJECT DELIVERY:** Investigating the benefits and challenges of collaborative and integrated project delivery methods such as IPD and PPP.
4. **WHOLE-LIFE COSTING AND ASSET MANAGEMENT:** Developing new approaches to whole-life costing and asset management, including the use of data analytics and machine learning.
5. **CONSTRUCTION INDUSTRY DYNAMICS AND DISRUPTION :** Researching the impact of disruption and innovation on the construction industry, including role of QS in navigating change.

6. **CONSTRUCTION TECHNOLOGY AND INNOVATION:**  
Researching the impact of emerging construction technologies such as 3D printing, Robotics, and drones on QS practices.
  
7. **QS EDUCATION AND PROFESSIONAL DEVELOPMENT:**  
Investigating the future of QS education and professional development, including the role of technology- enhanced learning and lifelong learning.

## CONCLUSION

The secret of getting ahead is getting started, the secret of getting started is accepting the realities and breaking the complex challenges facing the future of Quantity Surveying Professionals into smaller manageable tasks and then starting on the first one.

In Future-proofing essential skills, knowledge and competencies of Quantity surveying professionals, it is essentially imperative to acknowledge and embrace change, adaptability, resilience, innovations, lifelong commitments to learning, collaborations and personal development to drive business success, create innovative solutions to clients / stakeholders, and a sustainable built environment for generations to come in a rapidly evolving industry and Turbulent economy. Therefore, the future of Quantity surveying depends on its ability to adapt ,innovate, and thrive in a turbulent economy. As the built environment continues to evolve one thing is certain –the Quantity Surveying profession must transform to remain at the forefront of driving value added services to the economy.

