PROSPECTS AND CHALLENGES OF ENGINEERING VALUATION PRACTICE IN NIGERIA

BY

ENGR. BATTAH Y. NDIRPAYA
C.ENGR, MNSE, A.Val, A.CostE, EEcons;
ENGR. L. I. IWENOFU
C.ENGR, MNSE, A.Val, A.CostE
ENGR. M. B. KWALI
C.ENGR, MNSE, A.Val, A.CostE

INSTITUTE OF APPRAISERS AND COST ENGINEERS
(A Division of Nigeria Society of Engineers)
2010 ANNUAL TECHNICAL CONFERENCE
ABUJA

JULY 2010

INTRODUCTION

A postulate of sound investment is that an investor does not pay more for an asset than it is worth. This statement may seem logical and obvious, but it is forgotten some times. There are those who argue that value is in the eyes of the beholder, and that any price can be justified if there are other investors willing to pay that price. That perception is wrong. We do not buy most assets for aesthetic or emotional reasons; we buy financial assets for the cash flows we expect to receive from them. Consequently, perceptions of value have to be backed up by reality, which implies that the price we pay for any asset should reflect the cash flows it is expected to generate.

1.1 Presentation Layout

In this paper we will (a) Under Valuation discus: What is valuation; Types of valuation; Process of valuation; biases, uncertainties and complexity involved in valuation; (b) We will also look at who is a valuer and the certification process of Institute of Appraisals and Cost Engineers; (c) Furthermore will examine Federal Legislation on Engineering Valuation and (d) Finally we will discuss The Prospects and Challenges of Engineering Valuation in Nigeria.

2.0 Valuation

2.1 What is Valuation

Valuation is defined as the art of estimating the fair monetary measure of the desirability of ownership of specific properties/assets for specific purposes, at a specific time.

The Institute of Appraisers and Cost Engineers (IA&CE) in its Principle of Valuation Practice and Code of Ethics (2003) has broadened the definition of valuation to include any of the operations listed below.

- Determination of the value of property/assets
- Estimation of the cost of production of a new property
- Replacement of an existing property by purchase or production of an equivalent property, or
- Reproduction of an existing property by purchase or production of an identical property.
- Forecast of the earning power of a property.

2.2. In other words, valuation/appraisal is an unbiased opinion of value or monetary worth of an identified property.

2.3 Types of Valuation

Ideally there are three types of valuation

2.3.1 **Ordinary Valuation:**

In ordinary exchanges of property, the value is determined by the judgment of the seller and the buyer, each taking into account his knowledge of the property, the prevailing exchange conditions for such property, and his own exigencies and those of the other party. By a process of barter, the seller and the buyer finally agree upon the sale price.

2.3.2 **Formal Valuation:**

In formal valuations of property, the value is determined by judgment of specially qualified valuers. The formal valuation is not computed by mathematical formula but is fixed by expert judgment.

2.3.3 **Engineering Valuation:**

Engineering valuation is the art of estimating the value of specific properties or assets where professional engineering knowledge and judgment are essential. Examples of such properties are mines, factories, building, machinery, industrial plants, engineering constructions of all kinds, public utilities, etc.

2.4 Types of Values

The fundamental basis of value of any specific property/asset is the present worth to the present owner and to the would - be purchaser, the probable future services expected.

The time, place, purpose and parties thereto all affect the measure of the value of a property/asset.

Depending upon the situation surrounding the need for the appraisal/Valuation, the value concept researched and estimated may be one of the following.

- Fair Value
- Fair Market Value
- Fair Market Value-Installed
- Fair Market Value-Removal
- Fair Market Value in Continued Use
- Liquidation Value in Place
- Orderly Liquidation Value
- Forced Liquidation Value
- Salvage Value
- Scrap Value

Valuation Cont

2.4.1 Market Value (Fair Market Value)

A professional opinion of the estimated most probable price expressed in terms of currency to be realized for property in an exchange between a willing buyer and a willing seller, with equity to both, neither being under any compulsion to buy or sell, and both parties fully aware of all relevant facts.

2.4.2 Market Value Installed

A professional opinion of the estimated most probable price expressed in terms of currency to be realized for property in an exchange between a willing buyer and a willing seller, with equity to both, neither being under any compulsion to buy or sell, and both parties being fully aware of all relevant facts, as installed for intended utilization.

2.4.3 Forced Liquidation Value

A professional opinion of the estimated most probable price expressed in terms of currency which could typically be realized at a properly advertised and conducted public auction sale, held under forced sale conditions. Other things taken into consideration are physical location, difficulty of removal, physical condition, adaptability, specialization, marketability, overall appearance, psychological appeal and the possibility of buyers to insure competitive offers. All assets are to be sold on a piecemeal basis ‘as is’ with purchasers responsible for removal of assets at their own risk and expense.

Valuation Cont.

2.4.4 Orderly Liquidation Value

A professional opinion of the estimated most probable price expressed in terms of currency which the subject equipment could typically realize at a privately negotiated sale, properly advertised and professionally managed, by a seller obligated to sell over an extended period of time, usually within six to twelve months. Further, the ability of the asset group to draw sufficient prospective buyers to insure competitive offers is considered. All assets are to be sold on a piecemeal basis ‘as is’ with purchasers responsible for removal of assets at their own risk and expense.

2.4.5 New Replacement Cost Value

A professional opinion of the cost expressed in terms of currency, F.O.B. the manufacturer’s plant, to purchase a new item of like quality and specifications. If such an item is unavailable, the appraiser has used his or her best judgment in estimating a value as of the effective date of the appraisal.

2.5 Approaches to value

There are three general groups of methodologies for determining value. These are usually referred to as the "three approaches to value" which are generally independent of each other:

- The cost approach
- The sales comparison approach and
- The income approach

Valuation Cont.

2.5.1 The cost approach

The **cost approach** was formerly called the summation approach. The theory is that the value of a property can be estimated by summing the land value (cost) and the depreciated value of any improvements (depreciation). The value of the improvements is often referred to by the abbreviation RCNLD (reproduction cost new less depreciation or replacement cost new less depreciation). Reproduction refers to reproducing an exact replica. Replacement cost refers to the cost of building a house or machine which has the same utility, but using modern design, workmanship and materials. In practice, appraisers use replacement cost and then deduct a factor for any functional disutility associated with the age of the subject property.

2.5.2 The sales comparison approach

The sales comparison approach in a *real estate appraisal* is based primarily on the principle of substitution. This approach assumes a prudent individual will pay no more for a property than it would cost to purchase a comparable substitute property. The approach recognizes that a typical buyer will compare asking prices and seek to purchase the property that meets his or her wants and needs for the lowest cost. In developing the sales comparison approach, the valuer attempts to interpret and measure the actions of parties involved in the marketplace, including buyers, sellers, and investors.

(i) Method of Data Collection

Data are collected on recent sales of properties similar to the subject being valued, called comparables. Sources of comparable data include real estate publications, public records, buyers, seller, real estate brokers and/or agents, appraisers, and others. Important details of each comparable sale are described in the appraisal report. Since comparable sales are not usually identical to the subject property, adjustments may be made for date of sale, location, style, amenities, square footage, site size, etc. The main idea is to simulate the price that would have been paid if each comparable sale were identical to the subject property. If the adjustment to the comparable is superior to the subject, a downward adjustment is necessary. Likewise, if the adjustment to the comparable is inferior to the subject, an upward adjustment is necessary.

(ii) Steps in the Sales Comparison Approach

- Research the market to obtain information pertaining to sales, listings, pending sales that are similar to the subject property.
- Investigate the market data to determine whether they are factually correct and accurate.
- Determine relevant units of comparison (e.g., sales price per square foot), and develop a comparative analysis for each.
- Compare the subject and comparable sales according to the elements of comparison and adjust as appropriate.
- Reconcile the multiple value indications that result from the adjustment of the comparable sales into a single value indication.

2.5.3 The Income Capitalization Approach

The income capitalization approach (Often referred to simply as the "income approach") is used to value commercial and investment properties. Because it is intended to directly reflect or model the expectations and behaviors of typical market participants, this approach is generally considered the most applicable valuation technique for income-producing properties, where sufficient market data exists to supply the necessary inputs and parameters for this approach.

In a commercial income-producing property this approach capitalizes an income stream into a value indication. This can be done using revenue multipliers or capitalization rates applied to the first-year Net Operating Income.

Valuation Cont.

2.6 Process of Valuation

Valuation, in common with other technical activities, adapts itself to an orderly procedure. This procedure was developed over the past 60 years or so. The basis of valuation is controlled largely by the purpose for which the valuation is being made and the property or assets being valued. Although the procedures for the valuation of any specific property will follow a plan appropriate for that property, the over-all steps are somewhat common for all industrial properties. Briefly these steps are:

- Determination of the purpose of the valuation, the parties thereto, the date, and the price of valuation.

- Determination of the specific property to be appraised, including a study of geographical and functional classifications.

- Appraisal of the separate properties, tangible and intangible, by consideration of all the several evidences of value which are applicable.

- Determination of the value of the whole enterprise or property as an operating entity by consideration of all the several evidences of value which are applicable.

- By application of judgement to the values arrived at in steps 3 and 4, determine the final over-all value of the enterprise or property, giving each evidence just and right weight

.

2.6.1 Inside the Valuation Process

There are two extreme views of the valuation process. At one end are those who believe that valuation, done right, is a hard science, where there is little room for valuer's views or human error. At the other are those who feel that valuation is more of an art, where valuers can manipulate the numbers to generate whatever result they want. The truth does lies somewhere in the middle and we will use this section to consider three components of the valuation process that do not get the attention they deserve – the bias that appraisers bring to the process, the uncertainty that they have to grapple with and the complexity that modern technology and easy access to information have introduced into valuation.

2.6.1.1 Bias in Valuation

We almost never start valuing a company with a blank slate. All too often, our views on a company are formed before we start inputting the numbers into the models that we use and not surprisingly, our conclusions tend to reflect our biases. We will begin by considering the sources of bias in valuation and then move on to evaluate how bias manifests itself in most valuations. We will close with a discussion of how best to minimize or at least deal with bias in valuations.

(i) Sources of Bias

The bias in valuation starts with the companies we choose to value. These choices are almost never random, and how we make them can start laying the foundation for bias. It may be that we have read something in the press (good or bad) about the company or heard from an expert that it was under or over valued. Thus, we already begin with a perception about the company that we are about to value.

In many valuations, there are institutional factors that add to this already substantial bias. For instance, it is an acknowledged fact that equity research valuers are more likely to issue buy rather than sell recommendations, i.e., that they are more likely to find firms to be undervalued than overvalued.

The reward and punishment structure associated with finding companies to be under and over valued is also a contributor to bias. An appraiser whose compensation is dependent upon whether she finds a firm is under or over valued will be biased in her conclusions. This should explain why acquisition valuations are so often biased upwards.

Valuation Cont.

(ii) Manifestations of Bias

There are three ways in which our views on a company (and the biases we have) can manifest themselves in value.

The first is in the inputs that we use in the valuation.

The second is in what we will call post-valuation tinkering, where appraisers revisit assumptions after a valuation in an attempt to get a value closer to what they had expected to obtain starting off.

The third is to leave the value as is but attribute the difference between the value we estimate and the value we think is the right one to a qualitative factor such as synergy or strategic considerations. This is a common device in acquisition valuation where appraisers are often called upon to justify the unjustifiable.

(iii) What to do about bias

Bias cannot be regulated or legislated out of existence. Valuers are human and bring their biases to the table. However, there are ways in which we can mitigate the effects of bias on valuation:

- *Reduce institutional pressures*: As we noted earlier, a significant portion of bias can be attributed to institutional factors
- *De-link valuations from reward/punishment*: Any valuation process where the reward or punishment is conditioned on the outcome of the valuation will result in biased valuations. In other words, if we want acquisition valuations to be unbiased, we have to separate the deal analysis from the deal making to reduce bias.
- *No pre-valuation commitments*: Decision makers should avoid taking strong public positions on the value of a firm before the valuation is complete.
- *Self-Awareness*: The best antidote to bias is awareness. An appraiser who is aware of the biases he or she brings to the valuation process can either actively try to confront these biases when making input choices or open the process up to more objective points of view about a company's future.
- *Honest reporting*: In Bayesian statistics, appraisers are required to reveal their priors (biases) before they present their results of an analysis.

- While we cannot eliminate bias in valuations, we can try to minimize its impact by designing valuation processes that are more protected from outside influences and by report our biases with our estimated values.

2.6.1.2 Imprecision and Uncertainty in Valuation

Starting early in life, we are taught that if we do things right, we will get the right answers. In other words, the precision of the answer is used as a measure of the quality of the process that yielded the answer. While this may be appropriate in mathematics or physics, it is a poor measure of quality in valuation. Barring a very small subset of assets, there will always be uncertainty associated with valuations, and even the best valuations come with a substantial margin for error. In this section, we will examine the sources of uncertainty and the consequences for valuation.

(i) Sources of Uncertainty

Uncertainty is part and parcel of the valuation process, both at the point in time that we value a business and in how that value evolves over time as we get new information that impacts the valuation.

When valuing an asset at any point in time, we make forecasts for the future. Since none of us possess crystal balls, we have to make our best estimates, given the information that we have at the time of the valuation. Our estimates of value can be wrong for a number of reasons, and we can categorize these reasons into three groups.

- Estimation Uncertainty: Even if our information sources are impeccable, we have to convert raw information into inputs and use these inputs in models. Any mistakes or mis-assessments that we make at either stage of this process will cause estimation error.

- Firm-specific Uncertainty: The path that we envision for a firm can prove to be hopelessly wrong. The firm may do much better or much worse than we expected it to perform, and the resulting earnings and cash flows will be very different from our estimates.

- Macroeconomic Uncertainty: Even if a firm evolves exactly the way we expected it to, the macro economic environment can change in unpredictable ways. Interest rates can go up or down and the economy can do much better or worse than expected. These macro economic changes will affect value.

Even if we feel comfortable with our estimates of an asset's values at any point in time, that value itself will change over time, as a consequence of new information that comes out both about the firm and about the overall market.

Valuation Cont.

(ii) Responses of Uncertainty

Appraisers who value companies confront uncertainty at every turn in a valuation and they respond to it in both healthy and unhealthy ways. Among the healthy responses are the following:

- Better Valuation Models: Building better valuation models that use more of the information that is available at the time of the valuation is one way of attacking the uncertainty problem.
- Valuation Ranges: A few appraisers recognize that the value that they obtain for a business is an estimate and try to quantify a range on the estimate.
- Probabilistic Statements: Some valuers couch their valuations in probabilistic terms to reflect the uncertainty that they feel. Here again, the probabilities that accompany the statements provide insight into the uncertainty that the valuer perceives in the valuation.

- Unfortunately, not all valuers deal with uncertainty in ways that lead to better decisions. The unhealthy responses to uncertainty include:
  - Passing the buck: Some valuers try to pass on responsibility for the estimates by using other people's numbers in the valuation.
  - Giving up on fundamentals: A significant number of valuers give up, especially on full-fledged valuation models, unable to confront uncertainty and deal with it.

- It is natural to feel uncomfortable when valuing equity in a company. We are after all trying to make our best judgments about an uncertain future. The discomfort will increase as we move from valuing stable companies to growth companies, from valuing mature companies to young companies and from valuing developed market companies to emerging market companies.

(iii) What to do about uncertainty

The advantage of breaking uncertainty down into estimation uncertainty, firm-specific and macroeconomic uncertainty is that it gives us a window on what we can manage, what we can control and what we should just let pass through into the valuation.

(iv) The Payoff to Valuation

Even at the end of the most careful and detailed valuation, there will be uncertainty about the final numbers, colored as they are by assumptions that we make about the future of the company and the economy in which it operates. It is unrealistic to expect or demand absolute certainty in valuation, since the inputs are estimated with error. This also means that appraisers have to give themselves reasonable margins for error in making recommendations on the basis of valuations.

- We do not want to leave the impression that we are completely helpless in the face of uncertainty. Simulations, decision trees and sensitivity analyses are tools that help us deal with uncertainty but not eliminate it.

2.6.1.3 The Cost of Complexity

A parallel and related question to how much detail there should be in a valuation is the one of how complex a valuation model should be. There are clear costs that we pay as models become more complex and require more information.

(i) Information Overload: More information does not always lead to better valuations. In fact, appraiser can become overwhelmed when faced with vast amounts of conflicting information and this can lead to poor input choices.

(ii) Black Box Syndrome: The models become so complicated that the appraisers using them no longer understand their inner workings. They feed inputs into the models black box and the box spits out a value.

(iii) Big versus Small Assumptions: Complex models often generate voluminous and detailed output and it becomes very difficult to separate the big assumptions from the small assumptions.

3.0 Certification Process of the Institute

- Engineering is generally the application of knowledge and experience in mathematical, physical, chemical, biotechnological and management science to the solution of societal problems, in a safe, economical, healthy, socially acceptable and environmentally sustainable manner.
- To achieve these aims the formal education of the Engineer in the University focuses on the natural sciences, applied natural sciences, management sciences, codified empirical knowledge, and other knowledge in literature, social sciences and humanities.
- It is after leaving the university that the Engineer starts acquiring professional skills in design, inventiveness, judgement, analysis, simulation, experimentation, evaluation, optimization, information search, thought, communication, working with others, etc.
- Engineering Valuation is therefore mainly a judgmental art and is more of a practice activity than academic one.

- Membership of the Institute is open to candidates with minimum academic qualification of B.Sc/B.Eng or equivalent certificate which is registrable with the Nigerian Society of Engineers and COREN.

- To become a candidate member of the Institute of Appraisers and Cost Engineers (A division of Nigerian Society of Engineers), you must have attended and passed the examination of the institute on Principles of Valuation and Code of Ethics.
- To qualify as an accredited valuer (A.Val), the candidate must attend and pass the relevant examinations:

(i) Appraisal Accreditation Course on Machinery and Equipment part 1; and

(ii) Appraisal Accreditation Course on Machinery and Equipment Part 2

4.0 Federal Legislation on Engineering Valuation

4.1 The Industrial Inspectorate Decree

The main Federal Legislation that deals substantively with engineering valuation is the INDUSTRIAL INSPECTORATE DECREE NO. 53 OF 1970 now INDUSTRIAL INSPECTORATE ACT CAP 18 LFN 2004. The Act establishes the Industrial Inspectorate Department. The Duties of the Industrial Inspectorate as spelt out by the Act are:

4.1.1 Section 2.1.

Generally carry out investigations into any proposed, new and existing undertaking involving any proposed capital expenditure, and in particular, for the purposes of determining the investment valuation of the undertaking, that is –

(a) the actual capital (whether foreign or local) employed or proposed to be employed in the undertakings.

(b) the actual valuation of buildings, plants and other machinery employed or proposed to be employed in the undertaking and addition thereto.

4.1.2 Section 2.2.

Obtain necessary information on economic trends in the country and for this purpose the department shall

(a) prepare and keep detailed records of matters relating to any undertaking investigated by it.

(b) as far as possible prepare and keep records of all industrial plants and equipment in the country, their value and the value of similar plants and equipment in other countries.

The subsidiary regulations/scheme of service outlines the qualifications of the Director and Inspectors that legally constitute the department. They must be engineers and engineering technologists.

Federal Legislation on Engineering Valuation cont.

4.2 Companies and Allied Matters (Amendment) Decree No. 46 of 1991

Following a petition by the Nigerian Society of Engineers in March 1989, on the Report of the Consultative Assembly on the Reform of Companies Law, Sec. 137 of CAMDecree No 1 of 1990 was amended by CAM (Amendment) Decree No 46 of 1991. This made for the inclusion of Engineers in the definition of valuer in Sec. 137 of CAMDecree No. 46 of 1991.

4.3 Engineers Registration, etc (Amendment) Decree No. 27 of 1992

The Engineers Registration, etc. (Amendment) Decree 1992 defines “practice of engineering” as including any professional service or creative work requiring the application of special knowledge of mathematics, physics and engineering in form of construction, invention, discovery, valuation, research and teaching in recognized engineering institutions, planning, operation, maintenance, supervision of construction and installation involving advising, operating, evaluating, measuring, planning, designing, specifying, laying and directing, constructing, commissioning, inspecting or testing in connection with any public or private utilities, structures, buildings, plants, machines, equipment, processes, works or projects.

5.0 Prospects of Engineering Valuation

Valuation is useful in a wide range of tasks. The role it plays, however, is different in different arenas. The following section lays out the relevance of valuation in portfolio management, in acquisition analysis and in corporate finance.

5.1 Portfolio Management

The role that valuation plays in portfolio management is determined in large part by the investment philosophy of the investor. Valuation plays a minimal role in portfolio management for a passive investor, whereas it plays a larger role for an active investor. Even among active investors, the nature and the role of valuation is different for different types of active investment. Market timers use valuation much less than investors who pick stocks, and the focus is on market valuation rather than on firm-specific valuation. Among security selectors, valuation plays a central role in portfolio management for fundamental analysts, and a peripheral role for technical analysts.

5.2 Valuation in Acquisition Analysis

Valuation should play a central part of acquisition analysis. The bidding firm or individual has to decide on a fair value for the target firm before making a bid, and the target firm has to determine a reasonable value for itself before deciding to accept or reject the offer.

Prospects of Engineering Valuation Cont.

5.3 Valuation in Corporate Finance

There is a role for valuation at every stage of a firm's life cycle. For small private businesses thinking about expanding, valuation plays a key role when they approach venture capital and private equity investors for more capital. The share of a firm that a venture capitalist will demand in exchange for a capital infusion will depend upon the value she estimates for the firm. As the companies get larger and decide to go public, valuations determine the prices at which they are offered to the market in the public offering. Once established, decisions on where to invest, how much to borrow and how much to return to the owners will be all decisions that are affected by valuation. If the objective in corporate finance is to maximize firm value, the relationship between financial decisions, corporate strategy and firm value has to be delineated.

5.4 Valuation for Legal and Tax Purposes

Mundane though it may seem, most valuations, especially of private companies, are done for legal or tax reasons. A partnership has to be valued, whenever a new partner is taken on or an old one retires, and businesses that are jointly owned have to be valued when the owners decide to break up. Businesses have to be valued for estate tax purposes when the owner dies and for divorce proceedings when couples break up. While the principles of valuation may not be different when valuing a business for legal proceedings, the objective often becomes providing a valuation that the court will accept rather than the right valuation.

5.5 Valuation for Insurance Purposes

In the Insurance Industry Valuation and Risk Assessment are carried out to determine the cost of replacement (new) for industrial plants and equipment such as boilers, pressurized plants, electrical and mechanical plants, marine and telecommunication equipment, etc.

6.0 Challenges of Engineering Valuation:

6.1 Lack of Public and Institutional Awareness:

The Nigerian Society of Engineers saw the need for Engineers to formally go into the practice of Engineering Valuation hence the establishment of Institute of Appraisers and Cost Engineers as a division in 2003 to champion the training and practice of Engineering Valuation in Nigeria.

It has been observed however that there is lack of public and institutional awareness in the country about Engineers in Valuation.

6.2 Resistance to Change

Before Engineers indicated their interest in the practice of Engineering Valuation in Nigeria, there were some professionals handling valuation and there were policies guiding valuation which did not take Engineering Valuers into consideration. Now that the Engineers have seen the need, and by law are qualified to practice in Nigeria as earlier mentioned there will certainly be resistance from those in practice of valuation before now. We should however know that valuation is a multi-disciplinary practice and only your competence can sustain you in the practice. We should also know that “no one can claim to know the pot more than the potter”. Therefore, Engineers are in a better position to handle Engineering Valuation than any other professional.

The Federal Ministry of Works and Housing while approving the revised scale of fees for professionals in valuation in 1996 recommended that the Engineer engaged in the valuation of plant and machinery should be paid not more than 50% of the total fees payable to the valuer.

Now that the Engineer is ready to take the job on valuation himself, such laws and policies and similar ones elsewhere should be amended to acknowledge the existence of Institute of Appraisers and Cost Engineers in the country.

Challenges of Engineering Valuation Cont.

6.3 Unethical Practices

- Engineering Valuation has so many specializations and no one valuer can claim to do all valuation, therefore there is a need for valuers to carry out valuation in their area of co-competence. A situation where a valuer does valuation which is not in his area of co-competence, is quackery, and it should be viewed as an unethical practice. It is this unethical practice that led to the failure of the privatized Government-owned agencies like NITEL, NEPA, Ajaokuta Steel, the Refineries etc. The action resulted in gross under-valuation and loss of revenue to government.

  It is also an unethical practice for compensation or fees of a valuer to be based on percentage of the outcome of his valuation. This kind of practice makes an outcome of a valuation to be loaded with biases as earlier discussed.

  The practitioners of valuation in the country should base their fees on man-hour in line with international best practices.

6.4 There is Low Patronage of Accredited Valuers.

There is low patronage of accredited valuers in Nigeria. As earlier discussed valuation is needed in portfolio management, merger and acquisition, corporate finance, for legal and tax purposes, insurance purposes, loan purposes, buying and selling of second hand properties, etc. it has been observed that most private and public institutions do the above work without looking for accredited valuers.

The accredited valuers need to educate and enlighten the public and the institutions on the value addition of their services.

6.5 There are Inadequate Engineering Valuers in the Country

Institute of appraisers and Cost Engineers started training Engineering Valuers in 2003 and the numbers that have been trained so far are very few. Engineers from all disciplines are being encouraged to avail themselves of the opportunity that exist in the institute.

7.0 **Conclusion**

- In conclusion, we have seen what is valuation, types of valuation, types of value obtained from valuation, the approaches to valuation, process of valuation and the biases, uncertainties and complexities that affect valuation.

- We also saw who is a valuer and the certification process of the Institute of Appraisers and Cost Engineers. Federal legislations on Engineering Valuation in Nigeria was also highlighted.

- In the final analysis, prospects and challenges of Engineering Valuation practice in Nigeria were discussed.

- Finally, there are challenges in Engineering Valuation practice in Nigeria, but the prospects are much more. All interested Engineers are therefore encouraged to come forward and be trained by the Institute of Appraisers and Cost Engineers to be accredited Valuers so as to possess their possessions.

- As the Scripture said, “the harvest is plenty but the labourers are few”. All interested Engineers are enjoined to join the labourers in the Vineyard of valuation.

THANK YOU FOR LISTENING

References

1 Joseph Swanson and Peter Marshall, Houlihan Lokey and Lyndon Norley, Kirkland & Ellis International LLP (2008). A Practitioner's Guide to CorRestructuring, Andrew Miller's Valuation of a Distressed Company ISBN 9781905121311

2 Uniform Residential Appraisal Report (Form 1004): PDF

3 IVS 1 - Market Value Basis of Valuation, Seventh Edition

4 Lins, Marcos Pereira Estellita *et al.* (2005). "Real Estate Appraisal: A Double Perspective Data Envelopment Analysis Approach". *Annals of Operations Research* (Springer) **138** (1):79–96. doi:10.1007/s10479-005-2446-1.

5 Industrial Inspectorate Act CAP 18 LFN 2004.

6 Scale of fees for professionals by Ministry of Works and housing – 1996.

7 The Appraiser & Cost Engineer; Vol 1, 2003 by **IAEC.**

8 Principles of Valuation Practice and Code of Ethics 2003, by **IACE.**

9 Wikipedia encyclopedia (Internet).