

# " Advanced Financial Modelling with Excel VBA"

*4-day hands-on Training Program for Executives & Professionals*



7-10 July 2015, Las Vegas, USD 2,700 / 20-23 Apr 2015, Protea, Ikeja / USD 2,100

## Key Learning Outcomes

This programme is designed to achieve the following goals:

- Learn to construct models that apply to all functional areas: finance, accounting, marketing, human resources, budgeting, planning, statistical studies, forecasting, biological and chemical trials, econometrics
- Learn to build Securitization Models, Monte Carlo Analysis Models, Share Price Forecasting Models, Risk-Return Pricing Models, Consumer Finance Models, Budgeting Models, Vehicle Finance Models, and many more
- Examine several World Class financial Models and the code behind the Models
- Learn to employ the IPO Framework in constructing Models
- Learn to work with both Excel and User Forms as two distinct platforms for developing sophisticated financial models

## Features of this training programme

- Each section of this comprehensive programme will be supported by individual and group exercises and case studies
- Limited class size: Class size is limited to ensure effective one-to-one interactivity
- Participants receive valuable training in THREE areas: (a) 'Advanced' aspects of Excel; (b) 'Programming' of Excel with VBA; (c) 'Exposure' to several real-life models developed by Program Director for international financial institutions
- Hands-on exposure to the new 'PowerPivot' tool in Excel to connect directly to enterprise databases such as SAP and Oracle.

## Who Will Benefit

- Finance Directors / Financial Controllers / CFOs
- Business / Financial / Treasury / Market Analysts
- Corporate / Structured / Project Finance Officers
- Financial / Strategic Planners
- M&A Specialists
- Stock Brokers / Researchers
- Research Analysts / Economic Think-Tank
- Project / Commercial Management
- Business Development and Marketing
- Systems Analysts
- Budget Managers
- Inventory Managers
- Credit Risk / Treasury Managers
- Certified Public Accountants and Accounting Staff
- SAP and Oracle Users
- Visual Basic Programmers
- Economists and Statisticians
- Central Bank Research Analysts



Participants receive a Course Certificate



Program conducted by the World Leader in Financial Modeling, Viswanath Tumu (adviser to the World Bank, the International Finance Corporation, USAID and other well-known institutions). Program offered by 'South African Institute of Chartered Accountants' to maintain membership of institute. This program has been conducted more than 75 times at international locations.

# VTA Advanced Diploma in Financial Modelling

7-10 July 2015, Las Vegas, USA / 20-23 April 2015, Protea Hotel, Ikeja, Lagos

**“A properly designed model enables a situation to be easily examined and its dimensions intricately manipulated, to facilitate optimal decision making.”**

The objective of the Financial Modelling Program is to expose participants to modeling technology and tools using ‘advanced’ features of Excel and more importantly, to its programming counterpart, ‘Visual Basic for Applications’ (VBA), for building sophisticated and useful models in all business areas: Finance, Accounting, Budgeting, Banking, Infrastructure Projects, Public policy, Hedging, Engineering, Marketing, Sales, Human Resources and so on. The actual functional area is of no consequence since it is the responsibility of the modeller to supply functionality, whether it is Accounting, Option Pricing, Statistics, Econometrics, Engineering, Finance, Relationship Building and others. The training will be of greatest use to executives in Government, Banking, Markets and Exchanges, Investing, Infrastructure Building and Management, Healthcare, Oil and Gas, Shipping, Airlines amongst others.

Thus, regardless of functionality, every situation is comprised of variables and the challenges in building a model are:

- a. To decompose a situation into constituent variables;
- b. To understand the relationships amongst variables;
- c. To map variables (and relationships) to a modeling ecosystem on a PC using Excel & VBA.

This program will focus on underlying technology that is at the heart of developing powerful and sophisticated models by exposing participants to relevant techniques and tools. Participants work extensively with Excel & VBA.

## Pre-requisites

Participants require a laptop with Excel 2007 or higher and need to be proficient in Excel. This program is not a “how to” on Excel. To work with the new ‘PowerPivot’ data analysis tool, Excel 2010 or 2013 is required. Participants need to prepare for programs via background reading material. Case studies and problem solving workbooks are provided as part of the program on a Program DVD (950 MB). The program requires participants to make intensive use of Excel VBA, which is the solution platform. Course material is supplied in advance and includes, reading material, programme slides, case studies, scenarios and practical exercises.

## About your course Director

Viswanath is a US based consultant who advises international organisations, including, the World Bank, the International Finance Corporation, and the Inter-American Development Bank. He and his specialist American and other colleagues have carried out a wide range of financial planning assignments across industries in more than 24 countries on behalf of institutional and private sector clients.

Viswanath holds a Masters degree in International Finance from Columbia University, New York. He is also a Chartered Accountant and Company Secretary from India. He received the prestigious ‘Maurice Feldman’ scholarship for financial writers from The New York Financial Writers Association. He stood ‘FIRST’ in University while obtaining his Masters of Commerce in India.

He is a co-author of an authoritative text on Leasing “The Principles and Practice of Leasing” published from the U.K. in 1990. He has several published articles to his credit and is a regular contributor to the World Leasing Yearbook.

Viswanath is an official Beta tester for Microsoft Office and he has more than 14 years of experience in Financial Modeling and Microsoft Excel. He single-handedly developed ‘CapInvest’ a sophisticated financial model that is used by financial institutions to create a range of financial and savings products.

## Why it is important to Register immediately

This is the only program of its kind in the World, designed to train participants to build and use effective models to enable situations and scenarios to be easily examined and their dimensions intricately manipulated to facilitate optimal decision making. The program uses a pioneering method that enables participants to easily read and write Visual Basic code. Participants will easily write BASIC visual basic code while ADVANCED code writing is mastered using reference material in the Program DVD and several examples. Excel VBA is the communication tool in the globalised world - it is important to master this tool to enhance your career prospects and to be a very important person in the organization.

Register today by completing the registration form below or contact Femi Akinrotimi tel: +234 802 317 2157 or email <Femi.akinrotimi@e2eacq.com> for more information.

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## Programme Day 1 – An overview of modelling

### Introduction to Financial Modelling

- Definition of financial modelling
- The six distinct components in financial modelling: process, situation, variables, relationships, dimensions, decision-making
- What is not a financial model?
- Advantages of the financial modelling framework
- The IPO (Input, Processing and Output) framework
- Examples of variables and relationships
- Layout issues in building a financial model
- Examples of types of models
- Examples of models in non-finance areas: Marketing, Human Resources.

### Databases and Spreadsheets

- Difference between a database and a spreadsheet
- Role of a database in relation to a spreadsheet
- The need to intermingle in a solution
- Examples of production quality relational databases
- Other relational databases
- Programming language for manipulating databases
- The important role of excel as a flat file database
- Excel architecture overview
- Databases wrap-up

### Overview of Excel 2010

- New features
- The Ribbon
- Excel 2010 statistics

### Accessing Excel

- Two ways to access the functionality of Excel: GUI and Code
- Overview of code
- Objects
- Collections
- Platforms for building models: Worksheet and User Form

### Modelling Platforms

- Example of employing a Worksheet as a platform for a modelling situation
- Example of employing a User Form as a platform for a modelling situation

### Requirements for Developing Financial Models

- Model building concepts: variables, relationships, inputs, processing, outputs, layout issues
- Technical skills in Excel: excel object hierarchy, object properties and methods, excel events, Visual Basic for Applications.

## Advanced Excel - Part I

### Overview of Advanced features of Excel and its significance in Financial Modelling

- Arrays
- Functions
- Names
- Number formatting
- Data validation
- Excel Controls
- Report Manager add-in
- Data management
- What-if analysis
- Grabbing data from the Internet

### Excel Arrays

- Examples of use of arrays to solve advanced problems
- Defining arrays
- Entering array constants
- Cells holding an array formula

### Excel Functions

- Sources of Excel's functionality
- Types of Excel functions: built-in, Analysis ToolPak, user-defined, add-ins
- 9 categories of built-in Excel functions
- Functions: user defined
- Functions: add-ins
- Using a function and determining function parameters
- Function return value
- Creating a user defined function
- Examples of some important functions
- Using Edit / Go To / Special

### Excel Naming Scheme

- Importance of names in Excel
- Naming cells, constants and formulas
- 3-D Names
- Naming benefits
- Names examples

### Excel Formatting Scheme

- Formatting values
- Number formatting options
- Custom number format
- Examples of Custom Format
- Formatting codes
- Date and time formatting codes
- Formatting examples

### Data Validation

- Basics
- Defaults
- Lists
- Custom
- Prompts

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## Day 2 and 3 – Advanced Excel and Programming

### Excel Controls

- Types of Excel controls
- Placing controls on a worksheet
- Linking controls to cells
- Attaching procedures to controls

### Excel Data Management Features

- Data management features in Excel
- Five stages of data manipulation
- The “Three I’s” of sources of data: Imported, Inputted, Internet
- Data filter
- Operators for filtering
- Advanced filtering procedures
- “D” functions
- Data management examples

### Excel Pivot Tables Feature

- What is a Pivot Table?
- Pivot table basics
- Pivot table examples

### What-if Analysis

- Types of “What If?” Analysis in Excel: Data Tables, Goal Seek, Scenario Manager, Solver
- Customized “What if?” analysis
- Data Tables: one-variable and two-variable
- Goal Seek
- Solver
- Solver algorithms and examples
- Scenarios

### Introduction to Business Intelligence

- Using the new ‘PowerPivot’ in Excel 2010
- Manipulating ‘relational’ databases such as Oracle, Sybase, SQL server, Access with the new PowerPivot
- Example of a Relational Database with 2 million records, manipulated in Excel 2010

### Grabbing Data from Internet

- Web queries
- Import commands
- Creating a new Web querysssssss

## Learning To Program In Excel

### Introduction to Programming

- MS Office programming architecture
- Entry points into Excel
- Graphical User Interface tools vs. code
- Using objects, properties and methods to manipulate Excel
- Examples of VBA Code
- Ways to execute code
- Built in modules vs. user modules
- Benefits of Code
- Executing Visual Basic code
- Manipulating Excel with objects, properties and methods

### Excel Object Hierarchy

- Scope of object properties and methods
- Object collections
- Microsoft Excel object models
- Object properties
- Object methods

### Excel Event Procedures

- Events supported by Excel
- Using Events to hook code

### Excel Macro Recorder

- Excel macro recorder
- Hands-on programming of simple tasks in Excel

### Writing Visual Basic Code

- Overview of Visual Basic code
- Parts of a Visual Basic procedure

### Visual Basic Decision Structures

- Visual Basic decision Structures
- Visual Basic control Structures

### Visual Basic Controls

- Visual Basic controls
- Visual Basic user forms
- Visual Basic toolbox
- Alternatives to forms Visual Basic Functions

### Useful Objects

- A Closer look at the Range Object
- The Range Object: properties and methods
- The Worksheet Object: properties, methods and events

### Visual Basic / Other

- Variables and Constants
- Arrays
- Operators



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## Programme Day 4 – Modelling Projects

Building on the exposure to Advanced Excel and VBA in prior sessions, participants proceed to examine, interactively, the architecture of several real-life models and the code and features behind these models:

### Exploring Refinancing Options For A Cash Generating going concern: A Securitization Scenario

This case study illustrates an example of an educational institute in an emerging market country, faced with the situation of either taking a loan from a bank or securitizing its fee income to finance a school building. Participants learn the value of building a Dashboard with relevant parameters to arrive at a decision as to the amount of fee income in future years to be securitized, the rate of interest to be paid to the bank, the number of years of fee income to be securitized and so on. This case clearly illustrates how VBA can transform an executive (or in this case, an accountant) from merely preparing projected financial statements of the scenario into a decision-making executive where all the relevant information is marshaled for an optimal decision.

### Share Price Forecasting Model For A Hypothetical M&A Deal: Developing a Dashboard for an investment decision

This case illustrates the very important concept of a 'Black Box' in preparing a financial model that isolates important decision making information and variables to assist users to perform useful tasks without attention being diverted by large volumes of data; essentially, an executive is faced with a situation wherein he spends a considerable amount of time in building a fantastic spreadsheet that clearly isolates the IPO components of model-building: Inputs (variables), Processing (revenue forecasting engine, double-entry of items, and a trial balance) and Output (financial statements such as P&L, Balance Sheet, Sources and Application of Funds, Ratio Analysis); while the executive would have toiled endlessly in preparing this elaborate model, it is useless from a decision-making perspective. To be a true decision maker, the executive needs to visualize his spreadsheet as an 'engine' which requires no human intervention and then go about building a dashboard with all variables on hand and interactivity built into the dashboard via Goal Seek. Once this is accomplished, this executive is ready to take his project forward as he is now transformed from an executive into a true decision-maker.

### Monte Carlo Simulation

An executive in the present-world lives in a World full of uncertainty; thus, to carry out a Project Appraisal using conventional tools is unrealistic since there is no way that the assumptions used in the Project Appraisal will remain a mute spectator. In other words, the IRR and NPV are unrealistic – to be meaningful, these parameters need to be the outcome of variables that are subject to probabilities. Enter Monte Carlo Simulation using an Investment Scenario: this case uses a simple project to focus on subjecting one of the assumption in the Project Appraisal (the revenue assumption) to a range of outcomes and then calculating the NPV of the project – this provides greater insights into the sensitivity of a project to changes in underlying variables. A Monte Carlo simulation is carried out by using a VBA Loop - participants get a ring-side view of the technicalities involved. This simulation involves 10,000 iterations with each iteration producing a NPV that corresponds to a probability value attached to Revenue.

*Review and Question and Answer Session*

### Simulating a HP Financial Calculator

This model simulates the financial functions in a HP financial calculator using Visual Basic Code to illustrate the fact that Excel's built-in financial functions such as Present Value, PMT and the others alone cannot build the simulator - these functions can generate an answer given information on the remaining 4 variables - calculation of any of the functions given info on the remaining variables is ruled out because a cell can be used for entering either a formula or a constant (but not both, as required by the simulator). Thus, Excel functions alone cannot build the calculator – this case illustrates the use of VBA functions (PV, PMT, I, NPER, FV) in building a financial calculator.

### Risk-Return Pricing Model

Financial Institutions in developing countries face the stark reality of bad debts and defaults in transactions, especially, to SMEs. How does a Financial Institution go about quantifying the Risk of a Transaction followed by translating Risk into an appropriate Risk Premium that is added to the Risk-Free rate for pricing a Transaction? This case study illustrates the innovative use of VBA Controls to visualize Risk from two perspectives and to translate Risk into Risk Premium. While the functionality of the model can be recreated using a basic spreadsheet, the capability to engage a user in the pricing process is un-paralled when the exercise is carried out using Controls that completely remove the mathematics and complexity of the pricing process from the user interface and replace this by intuitiveness of controls that spring to life when the two risk parameters are manipulated in the pricing exercise.

### Vehicle Financing Model

This case is an excellent introduction to participants to get their hands dirty with VBA controls to develop an 'error resistant' model to price vehicle financing transactions using discounted cash flow components of (a) the amount to be financed; (b) the duration of the financing transaction; (c) the rate of interest on the transaction; (d) future value of vehicle (if any); the model enables a user to select from a dealer's inventory of used-cars using a drop-down control and to have a financing transaction for the vehicle ready to go, incorporating several features to minimize the risk of errors in entry.

### An Automation Scenario

One of the most useful applications of VBA is the process of automating several tasks such that tasks are carried out repeatedly with no error, thereby leading to an increase in productivity. This example presents a simple situation of importing data from a database and modifying data to suit company requirements faced by a textile company which is broken down into FIVE distinct parts and participants learn to develop a VBA procedure to address each individual task. Once the five procedures are tested to ensure they work as expected, a Master Procedure is developed to call individual procedures to ensure these work in harmony, thereby transforming a time-consuming and error-prone process into a highly productive activity.

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## Registration Form

email completed form to <Femi.akinrotimi@e2eacq.com>

Job Title & Dept:					
Organisation:					
Address:					
Postal Code:		Country:			
Telephone:		Fax:		E-mail:	
Secretary's Name:			Secretary's Tel. & E-mail :		
AUTHORISATION Name and Position (if different from above):					
Signature:				Date:	

REGISTRATION FEE PER DELEGATE		Course Fee
<input type="checkbox"/> Yes, I would like to confirm my registration for 'The VTA Advanced Diploma In Financial Modelling'	<input type="checkbox"/> USD 2,700	<input type="checkbox"/> USD 2,100

METHODS OF PAYMENT	
<input type="checkbox"/> By Credit Card: Please debit my <input type="checkbox"/> MasterCard <input type="checkbox"/> Visa <input type="checkbox"/> Amex	<input type="checkbox"/> By Bank Transfer:
<input type="checkbox"/> By Bank Cheque:	<input type="checkbox"/> By Invoice: Payment must be made within 5 working days on receipt of invoice.
Cardholder's name:	
Card no.:	Expiry Date:
Authorised Signature: (as in credit card, if applicable)	

### TERMS AND CONDITIONS

#### Payment Terms

The Registration fee includes admission to training room, refreshments and lunches during the training course, course materials and online access to speakers' presentation. It does not cover accommodation or travel /personal expenses. Full payment of registration fee must be made within 5 working days upon receipt of invoice.

Government taxes and bank charges are to be borne by the delegate. Unless otherwise stated in the booking form, payment must be made only in US Dollars.

#### Cancellations/Substitutes

If you are unable to attend, a substitute delegate is welcome at no extra cost. Please provide substitute delegate in writing. In the event that you have to cancel, we follow the NO REFUND policy for cancellation.

In the event that the program is postponed, delegate payment on postponement date will be credited to a rescheduled date. In the event the program is canceled, delegate payments at the date of cancellation will be refunded to delegates.

#### Important Notice

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#### Fee:

- Includes admission to all training sessions, refreshments, lunches and training kit
- Does not include accommodation, travel expenses and hotel transfers

#### Note:

- Government taxes and bank charges are to be borne by the delegate.

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**Femi Akinrotimi**

Tel: +234 802 317 2157

Email: <Femi.akinrotimi@e2eacq.com>