BUDGETING & FORECASTING FINANCIAL MODELLING FOR MODERN DAY MANAGEMENT ACCOUNTING

A PRESENTATION BY INVHESTIA AFRICA LIMITED

AT THE 9TH MANAGEMENT ACCOUNTING CONFERENCE

27th – 29th July 2016
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About the Presenter

Steve Ogada, CFA
Associate Principal
Invhestia Africa Ltd

- An investment banker by profession with over 10 years experience in the East African capital markets.

- Has worked with a large regional Investment Bank performing various investment banking roles including sales trading, portfolio management for High Net Worth & Institutional clients, research, advisory and capital raise activities in both equities and debt instruments for corporate clients.

- Has worked on over 75 financial models and prepared financial feasibility reports cutting across various sectors from Real Estate, Energy to Manufacturing concerns.

- Holds a Bachelor of Arts Degree (Honors) in Economics from Kenyatta University, has the FAST (Flexible Appropriate Structured Transparent) Level 1 Certificate for financial modelling & is a Chartered Financial Analyst (CFA).
“Mathematicians finally developed a financial model to accurately compare apples and oranges. Any two kinds of fruit can be compared, although guavas still cause minor rounding errors.” — Graham Parke

Too often, finance courses stop short of making a connection between textbook finance and the problems of real-world business;

Financial Modelling bridges the gap between theory and practice by providing a nuts-and-bolts guide to solving common finance problems with spreadsheets.
Introduction – Financial Modelling

BUSINESS ANALYSIS LIFECYCLE
(see Grossman et al 2008 p.132)

Real world

- Business situation
- “communicate”
- “persuade, decide, act"

Model world

- Conceptual model
- “understand”
- “engineer”

- Spreadsheet model
- “analyze”

Management insights
- “interpret”

Model insights

COLLABORATIVE MODELLING!
Management accountants look ahead - they focus on forecasting, analysis and decision-making. They use various tools to advise on how the business can move forward;

Key amongst the tools used are budgets and forecasts to assist in strategic decision-making. Decisions may include developing a new product line, acquiring another business, expanding into new territories and raising debt or equity;

The expectations that organizations have of a Management Accountant are that he/she should be able to generate timely, accurate & flexible reports & provide a rigorous analysis of the same.

The Modern Day Management Accountant is one who possesses the cutting edge financial modelling skill to be able to carry out analysis, create budgets and forecasts which are FAST.
In reference to the Conference theme, “The Changing Role of the Modern Day Management Accountant”, this presentation will address the following thematic areas:

1. Management Accountant as the Analyst;
2. Management Accountant as the Communicator;
3. Management Accountant as the Strategist.
Management Accountant as the Analyst

Case Study I – Financial Analysis
Case Study I – Financial Analysis

- This case is about a business in the education services sector;

- The shareholders needed a forecast of their performance over a 5 year period. Additionally, a valuation was required to be used to attract potential investors;

- We built a financial model which made it easier to analyze the financial performance of the business;

- On a year on year basis, we were able to analyze both income and expenditure per tutor, per student and per employee, amongst other metrics.
# Case Study I – Financial Analysis

## Operating Metrics

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student to tutor (both full time and part time) ratio</strong></td>
<td>Forecast</td>
<td>Forecast</td>
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<td>10</td>
<td>10</td>
</tr>
<tr>
<td><strong>Student to Full Time Equivalent Tutors Required ratio</strong></td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td><strong>Income per FTE tutor</strong></td>
<td>62,242</td>
<td>86,598</td>
<td>100,813</td>
<td>111,165</td>
<td>117,707</td>
<td>124,666</td>
</tr>
<tr>
<td><strong>Tuition cost per FTE tutor</strong></td>
<td>17,806</td>
<td>21,191</td>
<td>23,233</td>
<td>24,741</td>
<td>26,635</td>
<td>28,724</td>
</tr>
<tr>
<td><strong>Forecast Income per long term Student</strong></td>
<td>3,458</td>
<td>4,811</td>
<td>5,601</td>
<td>6,176</td>
<td>6,539</td>
<td>6,926</td>
</tr>
<tr>
<td><strong>Advertising and Promotion Costs per student</strong></td>
<td>(921)</td>
<td>(666)</td>
<td>(484)</td>
<td>(382)</td>
<td>(317)</td>
<td>(275)</td>
</tr>
<tr>
<td><strong>Administrative Costs per student</strong></td>
<td>(1,445)</td>
<td>(1,142)</td>
<td>(995)</td>
<td>(814)</td>
<td>(730)</td>
<td>(693)</td>
</tr>
<tr>
<td><strong>Total expense per student</strong></td>
<td>(3,767)</td>
<td>(3,007)</td>
<td>(2,559)</td>
<td>(2,209)</td>
<td>(2,018)</td>
<td>(1,923)</td>
</tr>
</tbody>
</table>

## Key Growth Rates

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
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<th>2021</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Long term student growth rate</strong></td>
<td>163.89%</td>
<td>81.45%</td>
<td>44.49%</td>
<td>33.07%</td>
<td>26.58%</td>
<td>21.07%</td>
</tr>
<tr>
<td><strong>Income growth</strong></td>
<td>467.58%</td>
<td>152.45%</td>
<td>68.21%</td>
<td>46.73%</td>
<td>34.03%</td>
<td>28.23%</td>
</tr>
<tr>
<td><strong>Total expenses growth</strong></td>
<td>200.75%</td>
<td>44.83%</td>
<td>22.95%</td>
<td>14.87%</td>
<td>15.67%</td>
<td>15.38%</td>
</tr>
<tr>
<td><strong>PAT growth</strong></td>
<td>94.13%</td>
<td>-80.77%</td>
<td>-799.54%</td>
<td>88.50%</td>
<td>51.17%</td>
<td>36.88%</td>
</tr>
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</table>

## Key Ratios

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<thead>
<tr>
<th></th>
<th>2017</th>
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<th>2019</th>
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<th>2021</th>
<th>2022</th>
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</thead>
<tbody>
<tr>
<td><strong>Gross Profit Margin</strong></td>
<td>71.39%</td>
<td>75.53%</td>
<td>76.95%</td>
<td>77.74%</td>
<td>77.37%</td>
<td>76.96%</td>
</tr>
<tr>
<td><strong>EBITDA Margin</strong></td>
<td>-37.55%</td>
<td>13.03%</td>
<td>31.27%</td>
<td>41.98%</td>
<td>46.51%</td>
<td>49.19%</td>
</tr>
<tr>
<td><strong>PAT Margin</strong></td>
<td>-68.80%</td>
<td>-5.24%</td>
<td>21.80%</td>
<td>28.00%</td>
<td>31.58%</td>
<td>33.71%</td>
</tr>
</tbody>
</table>
Management Accountant as the Communicator

Case Study II – Data Presentation
This case involves a business which offers managed offices in East & West Africa;

The assignment entailed building an operational financial model for the business, which was undergoing both expansion into new geographies as well as capital raising;

The business had various profit centers, financials in multiple currencies but still needed to be presented on a single platform in both a consolidated form and a country by country basis;

Upon building the financial model we used a dashboard to present the data. A dashboard is an effective tool for communicating complex financial data in a way that is easier on the eye of the audience.
Case Study II – Data Presentation; The Dashboard

### Key Financials - Consolidated

<table>
<thead>
<tr>
<th></th>
<th>31 Dec 15</th>
<th>31 Dec 16</th>
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<th>31 Dec 18</th>
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<tbody>
<tr>
<td>USD</td>
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<td>USD</td>
<td>USD</td>
<td>USD</td>
<td>USD</td>
<td>USD</td>
</tr>
<tr>
<td>Total Revenue - Kenya</td>
<td>1,931,869</td>
<td>1,975,900</td>
<td>2,066,892</td>
<td>2,234,161</td>
<td>2,406,866</td>
<td>2,536,362</td>
</tr>
<tr>
<td>Total Revenue - Nigeria</td>
<td>366,695</td>
<td>875,899</td>
<td>1,113,921</td>
<td>1,130,240</td>
<td>1,131,154</td>
<td>1,131,154</td>
</tr>
<tr>
<td>Total Revenue - Ghana</td>
<td>-</td>
<td>603,110</td>
<td>2,384,289</td>
<td>2,767,135</td>
<td>3,150,068</td>
<td>3,557,221</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>2,298,564</td>
<td>3,454,908</td>
<td>5,565,102</td>
<td>6,131,537</td>
<td>6,688,089</td>
<td>7,224,737</td>
</tr>
<tr>
<td>EBITDA</td>
<td>480,046</td>
<td>837,638</td>
<td>2,927,509</td>
<td>3,401,925</td>
<td>3,839,515</td>
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<tr>
<td>Cost to Income ratio</td>
<td>79.12%</td>
<td>75.76%</td>
<td>47.40%</td>
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<td>EBITDA Margin</td>
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<td>13.43%</td>
<td>6.42%</td>
<td>33.00%</td>
<td>34.01%</td>
<td>35.75%</td>
<td>37.28%</td>
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### Serviced Offices Income

**Kenya Centers**

- **Total Revenue**: 21.00%
- **EBITDA**: 34.27%
- **Profit After Tax**: 33.32%
- **Other Income**: 11.41%

### Consolidated Income Statement

![Graph showing Consolidated Income Statement]

### Actual Income vs Budgeted Income (KES)

- **Total Revenue**: Green (Actual) vs Red (Budgeted)
- **EBITDA**: Blue
- **Profit After Tax**: Purple

![Graph showing Actual Income vs Budgeted Income (KES) with months Jan to Nov]

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This report presents the financial and operational performance of a data presentation, focusing on key financials and ratios across different regions. The dashboard provides a comprehensive view of total revenue, EBITDA, and profit margins over the years, along with a breakdown of serviced offices income specifically from Kenya Centers.
### KEY FINANCIALS - CONSOLIDATED

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### KEY RATIOS - CONSOLIDATED

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The Dashboard 2/2

Consolidated Income Statement

- Total Revenue
- EBITDA
- Profit After Tax

Serviced Offices Income
Kenya Centers

- 2015: 34.27%
- 2016: 11.41%
- 2017: 33.32%
- 2018: 21.00%
- 2019: 21.00%
- 2020: 21.00%

Actual Income vs Budgeted Income (KES)

- Total Income
- Total Income - Budgeted

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

- Total Income
- Total Income - Budgeted
Management Accountant as the Strategist

Case Study III – Strategy
This a project finance case in which the sponsor was considering setting up a mixed use development at a station. The development would include a parking silo, warehouse, hotel, office and retail components;

We built a financial model to assess the viability of the project both as standalone components as well as a consolidated project;

The resulting analysis showed that the parking silo generated the worst returns. It informed us that this component is more an amenity than a profit center. The retail component generated the best returns followed by hotel.
Introduction to the FAST Standard Methodology
The FAST Standard

- The FAST Standard was created through a collaborative effort of experienced financial modelling professionals.
- Changes to the standard are considered and made after consultations with a moderation board that is made up of several industry experts.

<table>
<thead>
<tr>
<th>Flexible</th>
<th>A flexible model meets its objectives and can be maintained, re-purposed and updated as needed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate</td>
<td>An appropriate model reflects key business decisions without unnecessary detail.</td>
</tr>
<tr>
<td>Structured</td>
<td>A structured model has been built consistently and ensures that form follows function.</td>
</tr>
<tr>
<td>Transparent</td>
<td>A transparent model is as simple as it can be and does not have unnecessary complexity to obfuscate its functionality and can be used by anyone with some modelling experience, not just its creator.</td>
</tr>
</tbody>
</table>

FAST Standard Users

Image of company logos:
- Financial Mechanics
- A3BEL
- InVhestia
- Grant Thornton
- pwc
- LATTICE
- Mazars
- F1F9
- Carillion
- CPAK
Who are we?
About Invhestia

Invhestia Africa Limited (www.invhestia.com) is a boutique project & corporate finance advisory firm. We help firms in their decision-making be they strategic, operational or financial by quantifying such decisions and offering in depth analysis.

Advisory and consulting

Financial modelling Solutions (Model build, audit, training)

Deal Structuring

Valuation

Project Appraisal

Negotiation
We run an organization that interacts very closely with its clients and so it’s very important to us that we find the right people for the organization.

We get a lot of people who are truly qualified, on paper. At a minimum, a majority of applicants have the right experience. That’s why everything in the application process matters; we form an opinion of the job applicant during every single interaction.

We then only hire the best fit for close work with our clients.
# Value Proposition

| Advisory                                                                 | • We have years of practical experience working with entrepreneurs, corporates and project promoters across the East African economy, enhancing our knowledge of sectors;  
| • Our ability to originate & structure deals and problem solve is exhibited by our diverse portfolio of clients. |
| Financial Modelling Assignments (Model Build & Audit)                    | • We have a team of financial modellers & analysts who are certified by the FAST Standard organization;  
| • The team has experience in financial modelling & model audits for businesses in various industries including FMCG, power, real estate, financial services & education. |
| Financial Modelling Training                                             | • The financial modelling courses offered by Invhestia are FAST Accredited;  
| • The courses are based on case studies and simulate the real business environment faced by participants. |
| Certification                                                            | • We offer the FAST Certification for financial modellers. This certificate, being internationally recognized, will set you apart from other modellers. |
# Financial Modelling Training

<table>
<thead>
<tr>
<th>Courses</th>
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<tbody>
<tr>
<td>Introduction to Financial Modelling and Data Analysis</td>
</tr>
<tr>
<td>Budgeting and Forecasting Financial Modelling</td>
</tr>
<tr>
<td>Corporate Finance and Valuation Financial Modelling*</td>
</tr>
<tr>
<td>Project Finance Financial Modelling**</td>
</tr>
<tr>
<td>Online Financial Modelling</td>
</tr>
<tr>
<td>FAST Level 1 Certification</td>
</tr>
</tbody>
</table>

* - This course has three versions: Manufacturing, Insurance, and Banking concerns
** - This course has two versions: Real Estate and Infrastructure concerns
InVhestia- A FAST Certified Trainer

The FAST Standard is an open-to-all standard designed to promote flexibility, appropriateness, structure and transparency in spreadsheet-based models. We encourage all those that make use of it to promote its benefits and increase awareness of its existence.

Only those organisations listed on this web page have gone through a formal accreditation process with the FAST Standard Organisation ("FSO"). These organisations have worked with the FSO and have demonstrated a significant commitment to the FAST Standard in the development of their people, products and services. They have the right to bear the kitemark: FAST accredited provider.

Organisations listed on this web page are FAST accredited providers. They offer courses that have been subject to a formal accreditation process with the FSO that allows them to bear the kitemark: FAST accredited course.

C cavity Consultancy Services

FIP9

Financial Arena

InVhestia Africa Limited
Selection of our clients

- Britam
- Deloitte
- ICDC
- Sanlam
- Jamii Bora Bank
- PwC
- STIMA Sacco
- GM
- Centum
- Safaricom
- Barclays Bank
- CPAK
- CBA
- KCB
- InVhestia