WHAT IS AN ULTIMATE GOAL?

Why Do We Need All This Stuff?
WHAT IS AN ULTIMATE GOAL?

Why Do We Need All This Stuff?

For Better Decision Making !!!

ACCOUNTING CYCLE

1. Identify Transactions
2. Record Journal Entries
3. Post Ledger Entries
4. Unadjusted Trial Balance
5. Adjusted Entries
6. Adjusted Trial Balance
7. Financial Statements
8. Close Your Books

Gross Profit Margin
Profitability
NPIAT %
14 Favourable Results
5 Unfavourable Results
3 N/A Measures

Debt-to-Equity
Profitability %
Current Ratio
Quick Ratio

Gearing
Interest Coverage

Marginal Cash
Return on Equity
GMROI

Other
EPS

Return on Total Assets
Activity

Asset Usage
Working Capital
Inventory Days
Asset Turnover

AR Days
AP Days
Working Cap, Absorption

www.mof.ge
WHAT IS “BIG DATA”?

Common Characteristics:

- **Volume** - Collect data from a variety of sources
- **Velocity** - Unprecedented speed of data stream
- **Variety** - Data comes in all types of formats
- **Variability** - Cyclical, inconsistent
- **Complexity** - Difficult to match, link, clean and transform
DATA GROWTH POTENTIAL

DATA GROWTH

X axis: Year
Y axis: Global data
Unit of measurement: Zettabytes
1ZB = 1,000² bytes

Note: Post-2013 figures are predicted. Source: UNECE

Chart is from the United Nations Economic Commission for Europe (UNECE)

Source: www.nojitter.com
DATA VISUALIZATION ROADMAP
GEORGIAN EXPERIENCE

- Data storage
  - Formatting & Cleaning
  - Data Understanding
  - Data Integration
  - Data Analysis
  - Data Visualization
<table>
<thead>
<tr>
<th>Data Understanding</th>
<th>Data Integration</th>
<th>Data Analysis</th>
<th>Data Visualization</th>
</tr>
</thead>
</table>

**Data Storage**

**Formatting, Cleaning**

**Data Understanding**

**Data Integration**

**Data Analysis**

**Data Visualization**

<table>
<thead>
<tr>
<th><strong>Descriptive, Predictive, Prescriptive Analytics</strong></th>
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<tbody>
<tr>
<td>Generally, indications of warfare and potential conflict and other crises, based on quantitative information found in open source datasets</td>
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<thead>
<tr>
<th><strong>Indications &amp; Warning</strong></th>
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<tr>
<td>Differential or difference equations of low dimensionality representing competing actors (incl. system dynamics)</td>
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<tr>
<th><strong>Dynamical Systems</strong></th>
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<tr>
<td>Time-phased data aggregated at fixed intervals with scaled values. Separate from underlying events input to set of discrete states with associated probabilities.</td>
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<tr>
<th><strong>(Hidden) Markov Models</strong></th>
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<tr>
<td>Analysis of abstracted and coded streams of short-term interactions among competing or cooperating actors</td>
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<tr>
<th><strong>Event Data Analysis</strong></th>
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<tr>
<td>Large-scale aggregate models of social actors, states or organizations in economic and social systems – regional, national, international.</td>
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<tr>
<th><strong>Econometric Models</strong></th>
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<td>Regression and statistical models estimating the probability of how variables will affect a specified outcome.</td>
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<tr>
<th><strong>Probabilistic Models</strong></th>
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<tr>
<td>Techniques for the reduction of high-dimensionality models to a few critical dimensions to facilitate prediction and visualization.</td>
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<tr>
<th><strong>Principal Components Analysis</strong></th>
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<tr>
<td>Application of 2-person and N-person game theory to competitive and collaborative situations involving strategic interdependence.</td>
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<tr>
<th><strong>Game Theory Models</strong></th>
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<tr>
<td>Use of logical formulae and systems to represent and solve qualitative problems, including deductive, abductive, and inductive techniques.</td>
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<tr>
<th><strong>Logic Systems</strong></th>
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<tbody>
<tr>
<td>Ref: Kaisler and Cioffi-Revilla 2007; Kaisler, Armour, Espinosa, and Money 2014</td>
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Financial Ratio Analysis and “Simpson’s Reversal Paradox”

<table>
<thead>
<tr>
<th></th>
<th>Quarter 1</th>
<th></th>
<th></th>
<th>Quarter 2</th>
<th></th>
<th></th>
<th>Quarter 3</th>
<th></th>
<th>Quarter 4</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>All shots</td>
<td>Exact shots</td>
<td>%</td>
<td>All shots</td>
<td>Exact shots</td>
<td>%</td>
<td>All shots</td>
<td>Exact shots</td>
<td>%</td>
<td>All shots</td>
</tr>
<tr>
<td>Player 1</td>
<td>10</td>
<td>7</td>
<td>70%</td>
<td>4</td>
<td>1</td>
<td>25%</td>
<td>9</td>
<td>7</td>
<td>78%</td>
<td>5</td>
</tr>
<tr>
<td>Player 2</td>
<td>4</td>
<td>3</td>
<td>75%</td>
<td>10</td>
<td>3</td>
<td>30%</td>
<td>5</td>
<td>4</td>
<td>80%</td>
<td>9</td>
</tr>
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Is Anything Paradoxical here?
DATA VISUALIZATION ROADMAP
GEORGIAN EXPERIENCE

Data storage

Formatting, Cleaning

Data Understanding

Data Integration

Data Analysis

Data Visualization

Data Visualization Tools

- Dashboards
- Graphs & Charts: Line charts; Pie charts; Area charts; Scatter chart
- Data Visualization software

Data Visualization Software

- Tableau
- Qlikview
- Spotfire
- IBM
- SAS
- **Microsoft Power Business Intelligence**
Where we use “Microsoft Power BI”

• Budget Execution Reports
• Accounting and Reporting
• Investment Projection and Management

Microsoft Power BI

LIVE DEMONSTRATION
Thank you for your attention!

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