Business Modeling with VMP and the MultiCapital Scorecard: The Greenlight Case

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Henk de Man - VDMbee
Maxime Van Der Stuyft - University of Ghent

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Agenda

• Introduction (McElroy) 5 minutes
• Business Modeling and the MCS (de Man) 5 minutes
• The Greenlight Case and Results (Van Der Stuyft) 20 minutes
• Q&A 10 minutes
• Wrap-up (McElroy) 5 minutes
Introduction

• This is about the integration of business modeling and triple bottom line (TBL) performance accounting
  – Where the output of one is used as the input of the other
  – In order to report TBL performance before it happens!

• Business modeling part takes form of modeling tool (VMP) developed by VDMbee in The Netherlands
  – Henk de Man of VDMbee will introduce and explain

• TBL performance accounting part takes form of MultiCapital Scorecard (MCS) developed by Thomas & McElroy LLC – a “context-based” methodology

• Greenlight Power, Inc. (GPI) case developed by Maxime Van Der Stuyft at University of Ghent
The MultiCapital Scorecard (MCS)

• A context-based TBL performance accounting tool (world’s first)
  – *Context-based* in sense that it assesses performance relative to social, economic and environmental limits and thresholds and not just in incremental terms

• Calls for assessment of performance against sustainability targets or norms but does not prescribe them
  – Relies instead on results of organization-specific materiality analyses to identify ”areas of impact” (AOIs) to focus on
  – In today’s fictitious case, only three such AOIs are used

• Is completely open-source!
Business Modeling and the MCS (de Man)
Business model transformation

adopt
discover
prototype
In ecosystem of business models
Transformation for sustainability
VDMbee: Model-driven transformation

“discover”
diagrams

“prototype”
structure

“adopt”
dashboards & scenarios

adopt

prototype

discover
The Greenlight Case and Results
(Van Der Stuyft)
The Greenlight Case and Results: 5 Parts

- Business problem facing Greenlight Power, Inc. (GPI)
- GPI Scenario A: Business As Usual
- GPI Scenario B: Transformed Business
- Comparison of two scenarios
- Moral of the story
The business problem facing GPI

Greenlight Power, Inc.

2020

2050
The business problem: our approach

Two scenarios

<table>
<thead>
<tr>
<th>Key Points</th>
<th>A: Business As Usual (BAU)</th>
<th>B: Transformed Business (Tr. Bus.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformation</td>
<td>Investments in the expansion of existing production infrastructure</td>
<td>Investments in new, sustainable generation technologies/innovations</td>
</tr>
<tr>
<td>Energy mix</td>
<td>Maintained commitment to <em>fossil fuels</em></td>
<td>Increased use of <em>sustainable energy resources</em></td>
</tr>
<tr>
<td>Performance</td>
<td>Focus on <em>economic</em> performance</td>
<td>Balanced focus on <em>all aspects</em> of performance</td>
</tr>
</tbody>
</table>
The business problem: our approach (cont.)

Only One Area of Impact (AOI) per Bottom Line

Financial Performance
→ CBM* = ROE (%)

Economic Performance

Social Performance

Environmental Performance

Climate Change Adaptation
→ CBM* = Funding (million $ / year)

Climate System
→ CBM* = Greenhouse Gas (GHG) Emissions (Mt CO2 / year)

* CBM = context-based metric
GPI Scenario A: *Business As Usual*

What if GPI does not change anything?
Power Generation Portfolio in Scenario A

Source: VMP, VDMbee
# 2050 Forecast for Scenario A

Comparison of the AOIs with their sustainability norms

<table>
<thead>
<tr>
<th>Areas Of Impact</th>
<th>Values</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Business As Usual</td>
</tr>
<tr>
<td>Funding for climate change adaptation (million $ / year)</td>
<td>42.77</td>
<td>60.00</td>
</tr>
<tr>
<td>GHG-emissions (context-based score) (Mt CO2 / year)</td>
<td>17.98</td>
<td>0.00</td>
</tr>
<tr>
<td>ROE (%)</td>
<td>11.46</td>
<td>8.00</td>
</tr>
</tbody>
</table>

*Source: VMP, VDMbee*
# Scenario A MultiCapital Scorecard in 2050

Measuring performances impacting five types of vital capitals

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## MultiCapital Scorecard for Greenlight Power - 2050

**Scenario: Business As Usual**

<table>
<thead>
<tr>
<th>BOTTLINE DIMENSIONS OF PERFORMANCE</th>
<th>INDIVIDUAL AREAS OF IMPACT (AOIs)</th>
<th>CONTEXT-BASED METRICS</th>
<th>CAPITALS IMPACTED</th>
<th>PROGRESSION PERFORMANCE SCORE</th>
<th>WEIGHT</th>
<th>FULLY SUSTAINABLE (D-C)</th>
<th>GAP TO FULLY SUSTAINABLE (D-C)</th>
<th>INDIVIDUAL AQI SCORES (CJD)</th>
<th>BOTTOM LINE SCORES</th>
<th>OVERALL SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td>Climate Change Adaptation</td>
<td>Funding for Climate Change Adaptation</td>
<td>Constructed</td>
<td>-3</td>
<td>1,00</td>
<td>-3</td>
<td>6</td>
<td>-100%</td>
<td>-100%</td>
<td>11%</td>
</tr>
<tr>
<td>Environmental</td>
<td>Climate System</td>
<td>Greenhouse Gas (GHG) Emissions</td>
<td>Constructed</td>
<td>-3</td>
<td>3,00</td>
<td>-9</td>
<td>9</td>
<td>-100%</td>
<td>-100%</td>
<td></td>
</tr>
<tr>
<td>Economic</td>
<td>Financial Performance</td>
<td>Return on Equity</td>
<td>Constructed</td>
<td>3</td>
<td>5,00</td>
<td>15</td>
<td>15</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td><strong>SUMMARY TOTALS</strong></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>27</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Weighting Points: 9,00

*Intellectual capital is embedded in most of the others.*

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GPI Scenario B: *Transformed Business*

What if GPI puts effort into transformation?
Power Generation Portfolio in Scenario B

Source: VMP, VDMbee
2050 ecosystem in Scenario B

Source: VMP, VDMbee
Financial impact

<table>
<thead>
<tr>
<th>Self-financing level</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>261.94</td>
<td>1203.13</td>
<td>1417.58</td>
<td>868.14</td>
<td>1049.05</td>
</tr>
<tr>
<td>15%</td>
<td>1025</td>
<td>1150</td>
<td>850</td>
<td>850</td>
<td>850</td>
</tr>
<tr>
<td>19%</td>
<td>1025</td>
<td>1150</td>
<td>850</td>
<td>850</td>
<td>850</td>
</tr>
<tr>
<td>25%</td>
<td>1025</td>
<td>1150</td>
<td>850</td>
<td>850</td>
<td>850</td>
</tr>
<tr>
<td>19%</td>
<td>1025</td>
<td>1150</td>
<td>850</td>
<td>850</td>
<td>850</td>
</tr>
</tbody>
</table>

Source: VMP, VDMbee
## 2050 Forecast for Scenario B

**Comparison of the AOIs with their sustainability norms**

<table>
<thead>
<tr>
<th>Areas Of Impact</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Base / Transformed business</td>
</tr>
<tr>
<td>Funding for climate change adaptation (million $ / year)</td>
<td>67.45</td>
</tr>
<tr>
<td>GHG-emissions (context-based score) (Mt CO2 / year)</td>
<td>1.13</td>
</tr>
<tr>
<td>ROE (%)</td>
<td>7.32</td>
</tr>
</tbody>
</table>

*Source: VMP, VDMbee*
### MultiCapital Scorecard for Greenlight Power - 2050

**Scenario: Transformed Business**

#### Vital Capitals Legend:
- Constructed
- Human
- External Economic – Financial
- External Economic – Non-Financial
- Internal Economic – Financial
- Internal Economic – Non-Financial
- Natural
- Social & Relationship

#### Scoring Matrix

<table>
<thead>
<tr>
<th>BOTTOM LINE DIMENSIONS OF PERFORMANCE</th>
<th>INDIVIDUAL AREAS OF IMPACT (AOIs)</th>
<th>CONTEXT-BASED METRICS</th>
<th>CAPITALS IMPACTED</th>
<th>PROGRESSION PERFORMANCE SCORE</th>
<th>WEIGHT</th>
<th>WEIGHTED SCORE (AxW)</th>
<th>FULLY SUSTAINABLE SCORE (Bx3)</th>
<th>GAP TO FULLY SUSTAINABLE (D-C)</th>
<th>INDIVIDUAL AOs SCORES (CD)</th>
<th>BOTTOM LINE SCORES</th>
<th>OVERALL SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td>Climate Change Adaptation</td>
<td>Funding for Climate Change Adaptation</td>
<td>Constructed, Natural</td>
<td>3</td>
<td>3.25</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>100%</td>
<td>100%</td>
<td>37%</td>
</tr>
<tr>
<td>Environmental</td>
<td>Climate System</td>
<td>Greenhouse Gas (GHG) Emissions</td>
<td>Natural</td>
<td>1</td>
<td>3.00</td>
<td>3</td>
<td>9</td>
<td>6</td>
<td>33%</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>Economic</td>
<td>Financial Performance</td>
<td>Return on Equity</td>
<td></td>
<td>-1</td>
<td>2.75</td>
<td>-3</td>
<td>8</td>
<td>11</td>
<td>-33%</td>
<td>-33%</td>
<td></td>
</tr>
</tbody>
</table>

**Summary Totals**
- Total Weighting Points: 9.00
- Overall Score: 37%
Scenario A Business As Usual vs. Scenario B Transformed Business
Evolution of AOIs

Social bottom line:
Climate Change Adaptation
CBM = Funding (million $ / year)

Environmental bottom line:
Climate System
CBM = GHG-emissions (Mt CO2 / year)

Economic bottom line:
Financial Performance
CBM = ROE (%)

• Scenario A
• Scenario B

Source: VMP, VDMbee
Overall sustainability performance (MCS) by phase

- Scenario A
- Scenario B

Source: VMP, VDMbee
Moral of the Story
Double-loop learning cycles

Source: McElroy and Van Engelen (Corporate Sustainability Management, Routledge, 2012)
Q&A
Wrap-up (McElroy)
Wrap-up

• Three key takeaways:

1. That not only can the financial performance of alternative new business models or scenarios be forecasted, so can their full triple bottom line performance and in a context-based way – it can be done!

2. That the overall performance of an organization can look very different when non-financial impacts are taken explicitly into account (e.g., Scenario B’s overall TBL performance was superior to Scenario A’s despite the fact that its financial performance worsened by comparison).

3. That values, weightings and priorities matter when it comes to judging performance (e.g., if GPI’s Scenario B’s weightings had been the same in 2050 as they were in Scenario A, its performance would have dropped from 37% to 4% – worse than Scenario A’s BAU performance of 11%!

• This takes the state-of-the-art for business planning and scenario modeling to a new level – for goodness sake, use it!
Thank You!

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• Maxime Van Der Stuyft: Maxime.VanDerStuyft@ugent.be