Reporting resilience & impact
Reporting 3.0 Workshop
12 June 2018
Workshop outline

**Measurement and communication of material impacts**
We can and do measure, we can and do communicate. There is no shortage of information, but what is material, is material a static or dynamic thing, can materiality be interpreted without a shared purpose and shared understanding of context?

**Valuation and alternative measures**
Monetization is useful for some purposes e.g. as measure of relative magnitude, but filter bubbles and quantification bias can jeopardise usefulness. What about alternative measures and do we need a deeper understanding of conditions and factors that determine impact?

**Science and accounting**
Challenges of uncertainty, boundaries, thresholds, tipping points, idiosyncratic relationships, redundancy and allocation. What are meaningful measures of resilience and rejuvenation?
Key developments and how they impact reporting

1. **Financial disclosures**
   Identifying and outlining impacts, plans and relationships between ESG and assets, liabilities, capital etc.

2. **Context-based approaches**
   Accounting for planetary boundaries, social floors – thresholds and allocation

3. **Impacts, outcomes & valuation**
   Moving down the impact pathway – to measure and value outcomes and impacts

4. **Intangibles**
   Measuring, accounting & reporting on intellectual, relational & organizational capital
We can measure and communicate

Table 2 Summary impacts for the changes from the 2000 baseline to 2060 under each of the UK NEA scenarios (low climate change scenario): GB

<table>
<thead>
<tr>
<th></th>
<th>GF</th>
<th>GPL</th>
<th>LS</th>
<th>NS</th>
<th>NW</th>
<th>WM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market agriculture output values*</td>
<td>220</td>
<td>-290</td>
<td>350</td>
<td>680</td>
<td>-510</td>
<td>420</td>
</tr>
<tr>
<td>Non-market GHG emissions**</td>
<td>-800</td>
<td>2,410</td>
<td>-100</td>
<td>3,590</td>
<td>4,590</td>
<td>-2,130</td>
</tr>
<tr>
<td>Non-market recreation***</td>
<td>5,710</td>
<td>6,100</td>
<td>1,540</td>
<td>4,490</td>
<td>24,170</td>
<td>5,040</td>
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<tr>
<td>Non-market urban greenspace****</td>
<td>-1,560</td>
<td>2,350</td>
<td>2,160</td>
<td>-9340</td>
<td>4,730</td>
<td>-24,000</td>
</tr>
<tr>
<td>Total monetised values*****</td>
<td>3,170</td>
<td>10,570</td>
<td>3,950</td>
<td>-1,180</td>
<td>32,980</td>
<td>-20,670</td>
</tr>
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</table>

Rank: Market values only

<table>
<thead>
<tr>
<th>Rank</th>
<th>Market only</th>
<th>Financial</th>
<th>Manufactured</th>
<th>Natural</th>
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<td>4</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>6</td>
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<tr>
<td>6</td>
<td>2</td>
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</table>

Rank: All monetary values

<table>
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<tr>
<td>6</td>
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<td>1</td>
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</table>
Data - do we know what it means or what to do with it?

If the Digital Universe were represented by the memory in a stack of tablets, in 2013 it would have stretched two-thirds the way to the Moon.*

By 2020, there would be 6.6 stacks from the Earth to the Moon.*

Source: KPMG
Resilience & rejuvenation

**OUR PORTFOLIO DIVERSITY PROVIDES RESILIENCE THROUGH PRICE CYCLES**

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings ($ billion)</td>
<td>$25</td>
<td>$20</td>
<td>$15</td>
<td>$10</td>
<td>$5</td>
</tr>
<tr>
<td>Brent price (RHS)</td>
<td>$100</td>
<td>$80</td>
<td>$60</td>
<td>$40</td>
<td>$20</td>
</tr>
</tbody>
</table>

- **Downstream**
- **Integrated Gas**
- **Upstream**
- **Corporate**

**LIVE ZERO**
Aim for zero negative impact on the environment

**LOVE CARBON**
Stop seeing carbon as the enemy, and start using it as a resource

**LEAD THE INDUSTRIAL RE-REVOLUTION**
Transform industry into a force for the future we want

**LET NATURE COOL**
Support our biosphere’s ability to regulate the climate

**A $10 PER BARREL CHANGE IN OIL PRICES WOULD BE EXPECTED TO HAVE A ROUGHLY $6 BILLION IMPACT PER YEAR ON OUR CASH FLOW FROM OPERATIONS**

**A $10 PER TONNE INCREASE IN GLOBAL CO₂ PRICES WOULD RESULT IN A REDUCTION OF ABOUT $1 BILLION IN SHELL’S PRE-TAX CASH FLOWS**
Barriers and challenges

**Income statement data ($ in millions)**

- Non-interest revenues: $30,756
- Interest income: 8,452
- Interest expense: 5,388
- Net interest income: 3,064
- Net revenues, including net interest income: 33,820
- Compensation and benefits: 12,678
- Non-compensation expenses: 12,364
- Pre-tax earnings: $8,778

**Balance sheet data ($ in millions)**

- Total assets: 861,395
- Other secured financings (long-term): 10,520
- Unsecured long-term borrowings: 175,422
- Total liabilities: 774,667
- Total shareholders’ equity: 86,728

**Common share data (in millions, except per share amounts)**

- Earnings per common share:
  - Basic: $12.35
  - Diluted: 12.14
- Dividends declared per common share: 2.55
- Book value per common share: 171.03
- Common shares outstanding, including RSUs granted to employees with no future service requirements: 441.6

Providing decision-useful information that serves a purpose

Attribution
Impact pathways
Valuation
Structure
Content
Forward looking
Coherence
Controls
Alternative measures

What is Entropic Overhead?

Entropic Overhead is a relative lifecycle measure of the energetic efficiency of maintaining the utility of a product or service, or reusing its constituent materials.

It can be used to assess the energetic efficiency differences between alternative pathways: for example the energy required to either make a new product or retrieve its resources to original utility, versus the energy that would be spent on retaining the original product’s use. It can also be used to assess the efficiency of alternative uses of constituent resources, beyond the original utility, in different products and processes within a circular economy.
Alternative functions

Properties of Digital Ledger Technology (DLT)

- Distributed: All network participants have a full copy of the ledger for full transparency.
- Programmable: A blockchain is programmable ("Smart Contracts").
- Secure: All records are individually encrypted.
- Immutable: Any validated records are irreversible and cannot be changed.
- Anonymous: The identity of participants is either pseudonymous or anonymous.
- Time-stamped: Transaction timestamp is recorded in a block.

Source: Luxembourg Private Equity and Venture Capital Association

Source: Deloitte Tech Trends 2018
Conclusions

Understand the role and importance of technology – tomorrow’s solutions

Indentifying meaningful resilience and rejuvenation measures

Open to alternatives that serve objective & purpose