From Theory to Practice: A Case Study in ESG Integration

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*Head of Standards Setting Organization*

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*Sector Analyst, Technology & Communications*
**Investors Care about Sustainability**
A rapidly increasing share of global assets are managed with ESG issues in mind

### Key sustainability-related investor initiatives:

<table>
<thead>
<tr>
<th>Initiative</th>
<th>AUM (US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Nations Principles for Responsible Investment</td>
<td>$59 trillion</td>
</tr>
<tr>
<td>Carbon Disclosure Project</td>
<td>$95 trillion</td>
</tr>
<tr>
<td>International Corporate Governance Network</td>
<td>$26 trillion</td>
</tr>
<tr>
<td>Investor Network on Climate Risk</td>
<td>$13 trillion</td>
</tr>
</tbody>
</table>

**U.S. Sustainable & Responsible Investing**
(in billions)

<table>
<thead>
<tr>
<th>Year</th>
<th>2005</th>
<th>2007</th>
<th>2010</th>
<th>2012</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value ($ billions)</td>
<td>9%</td>
<td>11%</td>
<td>12%</td>
<td>11%</td>
<td>18%</td>
</tr>
</tbody>
</table>

*Source: Forum for Sustainable and Responsible Investment*

In 2014, sustainable and responsible investment strategies applied to more than one out of every six dollars under professional management in the U.S.
The Pain Point for Investors
Investors lack the tools needed to integrate sustainability into investment decisions

Focusing specifically on US-listed companies, how satisfied are you with the information currently being provided by these companies on the following topics?

- How risks and opportunities are identified and quantified in financial terms
- Comparability of sustainability reporting between companies in the same industry
- Relevance and implications of sustainability risks/issues
- Key performance indicators related to each identified material issue
- Process used to identify material sustainability issues

Source: PwC
Sustainability Goes Mainstream, May 2014
The mission of SASB is to develop and disseminate sustainability accounting standards that help companies disclose material, decision-useful information to investors in a cost-effective way.

That mission is accomplished through a rigorous, transparent process that includes evidence-based research and broad, balanced stakeholder participation.

Facts about SASB

- Independent 501(c)(3) non-profit
- Develops & maintains industry-specific standards for 79 industries in 10 sectors
- Intended for use in mandatory SEC filings such as the Form 10-K and 20-F
Why It Matters To Companies And Investors
Harvard research provides initial validation of SASB’s standards-setting process

“Corporate Sustainability: First Evidence on Materiality,”
Working Paper by Mozaffar Khan, George Serafeim, and Aaron Yoon
Harvard Business School, 2015

Stock Returns (in annualized alpha) by Type of Sustainability Performance

<table>
<thead>
<tr>
<th>Performance on MATERIAL factors</th>
<th>HIGH</th>
<th>LOW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6.01%</td>
<td>-2.90%</td>
</tr>
<tr>
<td>Performance on IMMATERIAL factors</td>
<td>1.96%</td>
<td>0.60%</td>
</tr>
</tbody>
</table>

Findings:

- Using SASB sustainability disclosure topics
  
  good performance on *material* issues +
  poor performance on *immaterial* issues =
  strongest financial returns

- Efficiency of firms’ sustainability investments
- Implications for asset managers
Bruno Bertocci, UBS Asset Management

Head of Sustainable Investors Team and Senior Portfolio Manager
Research from Harvard shows that highly sustainable companies outcompete and outperform

Growth of 1 USD invested in an equally weighted portfolio of high sustainability firms vs. low sustainability firms

Note: The “High Sustainability group,” as defined by the study’s authors are companies that adopted all or most of certain environmental and social policies, outperformed the “Low Sustainability group,” as defined by companies that adopted almost none of these policies. Total sample 180 US companies. For illustrative purposes only. This does not represent the performance of any particular investment, and does not take into consideration any applicable fees, taxes or expenses. Past performance is not a reliable indicator of future returns. Eccles, Robert G., Ioannis Ioannou, and George Serafeim. “The Impact of Corporate Sustainability on Organizational Processes and Performance.” Management Science 60, no. 11 (November 2014): 2835–2857.
Sustainability factors are indicators of operating activity and competitive positioning

- Sustainability factors create operating efficiencies, support value creation and create brand equity
- Shared value = creates value inside and outside the company
- Modern way to manage all corporate resources—tangible and intangible

Sustainability factors affect equity prices

Examples of ESG materiality

- Labor practices—e.g. Collapse of clothing factory in Bangladesh
- Extreme weather—e.g. flooding in Thailand and chip manufacturers
- Drought—e.g. bottling plants in Karala, India
- Environmental fines, penalties—e.g. chemical accidents, oil spills
- Earnings fraud
- Product quality lapses, boycotts and recalls
- Local community relations

For illustrative purposes only.
Sustainability: A fundamental approach adapted to modern companies

Sustainability factors drive market value

- Brand value (price premium, brand awareness)
- Reputation (social media profile, opinion research)
- R&D pipelines (# patents)
- Customer satisfaction (retention, loyalty programs, boycotts)
- Health and safety record (incidents, accidents, near misses)
- Environmental performance (pollution, penalties, fines)
- Social license to operate (production delays, cost overruns, labor protests)
- Governance (board composition, bribery, ethics charges)

Sustainable Assets are growing in every region

Europe is leading but US is the fastest growing region

Europe is the leader
Proportion of sustainable assets by region

Proportion of sustainable assets relative to total managed assets

<table>
<thead>
<tr>
<th>Region</th>
<th>2012</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>49.0%</td>
<td>58.8%</td>
</tr>
<tr>
<td>Canada</td>
<td>20.2%</td>
<td>31.3%</td>
</tr>
<tr>
<td>United States</td>
<td>11.2%</td>
<td>17.9%</td>
</tr>
<tr>
<td>Australia</td>
<td>12.5%</td>
<td>16.6%</td>
</tr>
<tr>
<td>Asia</td>
<td>0.6%</td>
<td>0.8%</td>
</tr>
<tr>
<td><strong>Global</strong></td>
<td><strong>21.5%</strong></td>
<td><strong>30.2%</strong></td>
</tr>
</tbody>
</table>

Fastest growing region is the US
Growth of sustainable assets by region (in billions)

<table>
<thead>
<tr>
<th>Region</th>
<th>2012</th>
<th>2014</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>$8,758</td>
<td>$13,608</td>
<td>55%</td>
</tr>
<tr>
<td>United States</td>
<td>$3,740</td>
<td>$6,572</td>
<td>76%</td>
</tr>
<tr>
<td>Canada</td>
<td>$589</td>
<td>$945</td>
<td>60%</td>
</tr>
<tr>
<td>Australia/NZ</td>
<td>$134</td>
<td>$180</td>
<td>34%</td>
</tr>
<tr>
<td>Asia</td>
<td>$40</td>
<td>$53</td>
<td>32%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$13,261</strong></td>
<td><strong>$21,358</strong></td>
<td><strong>61%</strong></td>
</tr>
</tbody>
</table>

Source: Global Sustainable Investment Alliance from their 2014 Global Sustainable Investment Review. Normally updated every 2 years.
Modern (sustainable) investing

Traditional Investment Process
*Based on Security Analysis (1934)*
- Built for companies with physical assets
- Book value = market value

Modern Sustainable Investment Process
*Based on evolution of company strategy*
- Built for “asset light” companies
- Market value is a multiple of book value

1 Security Analysis, Benjamin Graham and David Dodd (1934)
Investment process

- Non-financial data
  UBS Sustainability Database*

- Financial data
  UBS Global Equity Research Platform

Placed by score into sustainability quadrant

Portfolio construction

* Based on the SASB Materiality Map™
For illustrative purposes only.
UBS Sustainability Database

SASB Materiality Map™

- UBS Sustainability database was developed in line with SASB Materiality Map™
- Material information should be available to all investors
- Sustainability Accounting Standards Board (SASB) is developing material, non-financial, sustainability accounting standards
- Extends corporate disclosure to environmental, social and governance (ESG) factors
- Complements financial accounting standards
- The SASB Materiality Map analyzes the potential for material impacts of the industry specific sustainability issues
- Key Performance Indicators (KPI) listed in the SASB Materiality Map™: 78 industries in 10 sectors
UBS proprietary sustainability rankings system

UBS' proprietary framework is based on material, industry-specific data

Focused attention on the most attractive stocks from a sustainability perspective

Company scores are arranged into deciles for each industry group

Industry specific weightings and data generate a company specific score

68 sustainability material factors across 21 industries

Note: For illustrative purposes only.
UBS Sustainability Database: Apple Inc

Apple ESG Score is a"9" (out of 10 deciles)

### Information Technology

<table>
<thead>
<tr>
<th>Score</th>
<th>Priority</th>
<th>Sustainability KPI</th>
<th>Key Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>95</td>
<td>1</td>
<td>Total Energy Use (kWh) / Revenue (USD)</td>
<td>- Energy, CO2 emissions (direct and indirect)</td>
</tr>
<tr>
<td>100</td>
<td>1</td>
<td>Does the company have a written ethics policy? (Y/N)</td>
<td>- Recycling</td>
</tr>
<tr>
<td>94</td>
<td>1</td>
<td>Scope 1 GHG emissions (tonnes) / Revenue (USD)</td>
<td>- Patents / Research and development expenditures</td>
</tr>
<tr>
<td>100</td>
<td>1</td>
<td>Scope 2 GHG emissions (tonnes) / Revenue (USD)</td>
<td>- Compensation practices</td>
</tr>
<tr>
<td>27</td>
<td>1</td>
<td>Research and development expenditures / Revenue (USD)</td>
<td>- Labor rights</td>
</tr>
<tr>
<td>73</td>
<td>1</td>
<td>CEO and other executive compensation (USD) / Net income (USD)</td>
<td>- Governance issues for the Board</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>Are the roles of Chair and CEO split between two people? (Y/N)</td>
<td></td>
</tr>
<tr>
<td>73</td>
<td>1</td>
<td>Percent of independent directors on the Board</td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>1</td>
<td>Percent of Board that is female</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>Does the company have a Board-level committee that explicitly oversees sustainability? (Y/N)</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>2</td>
<td>Does the company have a written resource reuse and recycling policy and/or management plan? (Y/N)</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>2</td>
<td>Does the company have specific programs to reduce the use and emissions of hazardous chemicals and waste? (Y/N)</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>2</td>
<td>Has the company implemented end-of-life product recycling or take-back programs? (Y/N)</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>2</td>
<td>Does the company adhere to an internationally accepted labor and human rights policy? (Y/N)</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>Does the company explicitly link Board compensation to sustainability performance? (Y/N)</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>Does the company explicitly link executive compensation to sustainability performance? (Y/N)</td>
<td></td>
</tr>
</tbody>
</table>

Source: UBS Asset Management, 2015. ESG scores are ranked by deciles from 1-10 where 10 is the best within the industry.

Note: For illustrative purposes only. Not a recommendation to buy or sell any particular security.
UBS Sustainability Database: Taiwan Semiconductor

Taiwan Semiconductor ESG Score is a "7" (out of 10 deciles)

### Semiconductor Sector

<table>
<thead>
<tr>
<th>Score</th>
<th>Priority</th>
<th>Sustainability KPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>1</td>
<td>Total Energy Use (kWh) / Revenue (USD)</td>
</tr>
<tr>
<td>100</td>
<td>1</td>
<td>Does the company have a written ethics policy? (Y/N)</td>
</tr>
<tr>
<td>17</td>
<td>1</td>
<td>Scope 1 GHG emissions (tonnes) / Revenue (USD)</td>
</tr>
<tr>
<td>33</td>
<td>1</td>
<td>Scope 2 GHG emissions (tonnes) / Revenue (USD)</td>
</tr>
<tr>
<td>31</td>
<td>1</td>
<td>Research and development expenditures / Revenue (USD)</td>
</tr>
<tr>
<td>100</td>
<td>1</td>
<td>Does the company have a written water management plan that pertains both to its operations and suppliers? (Y/N)</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>Number of patents filed in past year / Revenue (USD)</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>Does the company have a Board-level committee that explicitly oversees sustainability? (Y/N)</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>Does the company have a written resource reuse and recycling policy and/or management plan? (Y/N)</td>
</tr>
<tr>
<td>100</td>
<td>2</td>
<td>Does the company have specific programs to reduce the use and emissions of hazardous chemicals and waste? (Y/N)</td>
</tr>
<tr>
<td>100</td>
<td>2</td>
<td>Does the company adhere to an internationally accepted labor and human rights policy? (Y/N)</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>Has the company had any instances of strikes or labor disputes at its supplier facilities in the past three years? (Y/N)</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>Does the company explicitly link Board compensation to sustainability performance? (Y/N)</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>Does the company explicitly link executive compensation to sustainability performance? (Y/N)</td>
</tr>
</tbody>
</table>

### Key Components
- Energy and GHG emissions management
- Water and materials recycling and management
- Toxic waste management
- Research and development expenditures
- Labor policy

Source: UBS Asset Management, 2015. ESG scores are ranked by deciles from 1-10 where 10 is the best within the industry.
Note: For illustrative purposes only. Not a recommendation to buy or sell any particular security.
Disciplined idea generation

Positive screening to construct portfolio

For illustrative purposes only.
Sustainability is fully integrated

Main Tool: Portfolio Optimization Platform

- ESG Scores / Custom baskets can be integrated and used in strategy constraints

For illustrative purposes only. Not a recommendation to buy or sell any particular security.
UBS is a leader in sustainability

We demonstrate and actively pursue our beliefs through a range of internal and external commitments and initiatives

Internal Commitments
Sustainable Investors Team

- Dedicated Sustainable Equities Team formed in 1996
- Manages USD 2.90 billion as of March 31, 2016 in a broad range of strategies that endorse sustainable investing
- Bruno Bertocci, Head of Sustainable Equities, represents UBS on committees such as the Sustainability Accounting Standards Board and the Global Initiative for Sustainability Ratings
- Leader in sustainability data – our proprietary sustainability ratings database has evolved and is constantly being enhanced

Robust environmental policy since 1993
Strong track record in managing environmental challenges

- Sustainable Supply Chain Guideline introduced 2008
- UBS Climate Change Strategy implemented since 2006
- UBS Statement on Human Rights adopted in 2006
- UBS Position on Controversial Activities adopted 2011

External Commitments

- Participant in the UN Global Compact since its inception in 2000
- Founding member of the Wolfsberg Group in 1999
- Independent assurance of the GRI (Global Reporting Initiative) based sustainability disclosure
- Founder of the UBS Optimus Foundation
- First environmental certification (ISO 14001) in 1999
- Founding signatory of the Carbon Disclosure Project (CDP)
- One of the first signatories of UN Environment Program Finance Initiative (UNEP FI) in 1992
- UBS Asset Management signatory to Principles for Responsible Investment (PRI)
- Global Initiative for Sustainability Ratings steering committee
- Sustainability Accounting Standards Board™
- The Forum for Sustainable and Responsible Investing
Quinn Underriner
SASB Sector Analyst, Technology & Communications
Top Semiconductor Companies Have Low Sustainability Disclosure

Type of disclosure on material sustainability issues

- GHG emissions
- Energy management in manufacturing
- Water & waste management in manufacturing
- Recruiting & managing a global, skilled workforce
- Employee health & safety
- Product lifecycle management
- Supply chain management & materials sourcing
- Intellectual property protection & competitive behavior

Analysis based on 2015 10-K/20-F filings from the 10 largest Semiconductor companies by market cap
Some Semiconductors are Thirstier Than Others

**SASB metric:** (1) Total water withdrawn, percentage recycled, percentage of each in regions with High or Extremely High Baseline Water Stress

Water use intensity for **three large Semiconductor manufactures**

Units: Water withdrawal (liters) / revenue ($M)

% = operations in regions with High or Extremely High Water Stress
SASB’s Process Identifies Material Sustainability Issues

Only topics with demonstrated evidence of impacts on the financial condition, operating performance, and/or risk profile are included in the standards.

- **Metrics**
  - Efficiency of water used
  - Water stress of operations

- **Types of Financial Drivers**
  - Operational Efficiency
  - License to Operate
  - Physical/Direct Value Impacts

- **Financial Impact**
  - COST
  - COST OF CAPITAL
  - ASSETS & LIABILITIES
Top Hardware Companies Have Low Sustainability Disclosure

Analysis based on 2015 10-K/20-F filings from the 10 largest Hardware companies by market cap
In Hardware Supply Chain Management, Conformance is Key

**SASB metric**: (1) priority non-conformance rate and associated corrective action rate, and (2) other non-conformances rate and associated corrective action rate

Supplier audit rate for “(1) priority non-conformance rate and associated corrective action rate” for **three large Hardware manufactures**

Units: Number of audited facilities with a priority noncompliance/ total number of suppliers audited

% = the number of corrective action plans completed within 30 days to address priority non-conformances/ total number of priority non-conformances that have been identified

Limited to Tier 1 suppliers that, at a minimum, represents 80 percent of supplier spending related to manufacturing
SASB’s Process Identifies Material Sustainability Issues

Only topics with demonstrated evidence of impacts on the financial condition, operating performance, and/or risk profile are included in the standards

- Metric
  - Supply Chain Transparency

- Types of Financial Drivers
  - Operational Efficiency/Cost Structure
  - Potential for Supply Disruption
  - Reputational Damage

- Financial Impact
  - COST
  - COST OF CAPITAL
  - INTANGIBLE ASSETS
Moving the Market: The SASB 2016 Symposium
The only convening to explore the unique intersection between sustainability, finance, accounting, and law.

Speakers to include:

• Mary Schapiro, Former Chair, SEC
• Keith Higgins, Director of the Division of Corporate Finance, SEC
• Chris Ailman, CIO, CalSTRS
• Ted Eliopoulos, CIO, CalPERS
• Bruno Bertocci, Managing Director, UBS
• Tom Quaadman, SVP, U.S. Chamber Center for Capital Markets Competitiveness
• Alan Beller, Partner, Cleary Gottlieb
• Jeanette Franzel, Board Member, PCAOB
Questions?

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SASB  
Sector Analyst, Technology & Communications

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