



ESG Investment Analysis: *Becoming New Mainstream?*

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The business of sustainability



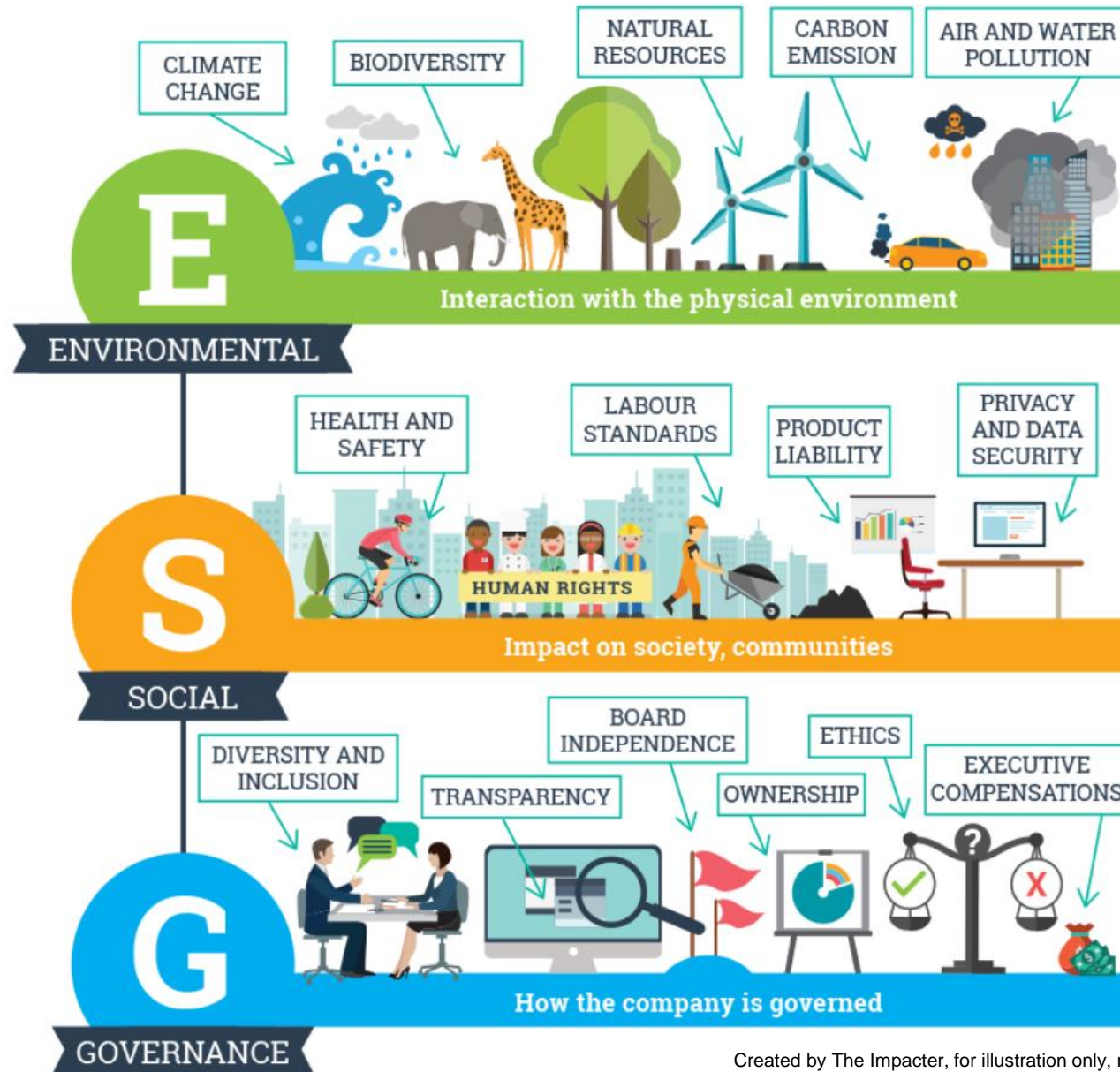
Agenda

- What is ESG and How It Create Values
- Stakeholder Interest
- Investor Momentum
- Evolving Interests
- ESG Ecosystem
- ESG Due Diligence: Tech Sector (example)
- Corporate Resources
- ESG Analysis
- About ERM



***What is ESG and How
ESG Create Values***

What is ESG



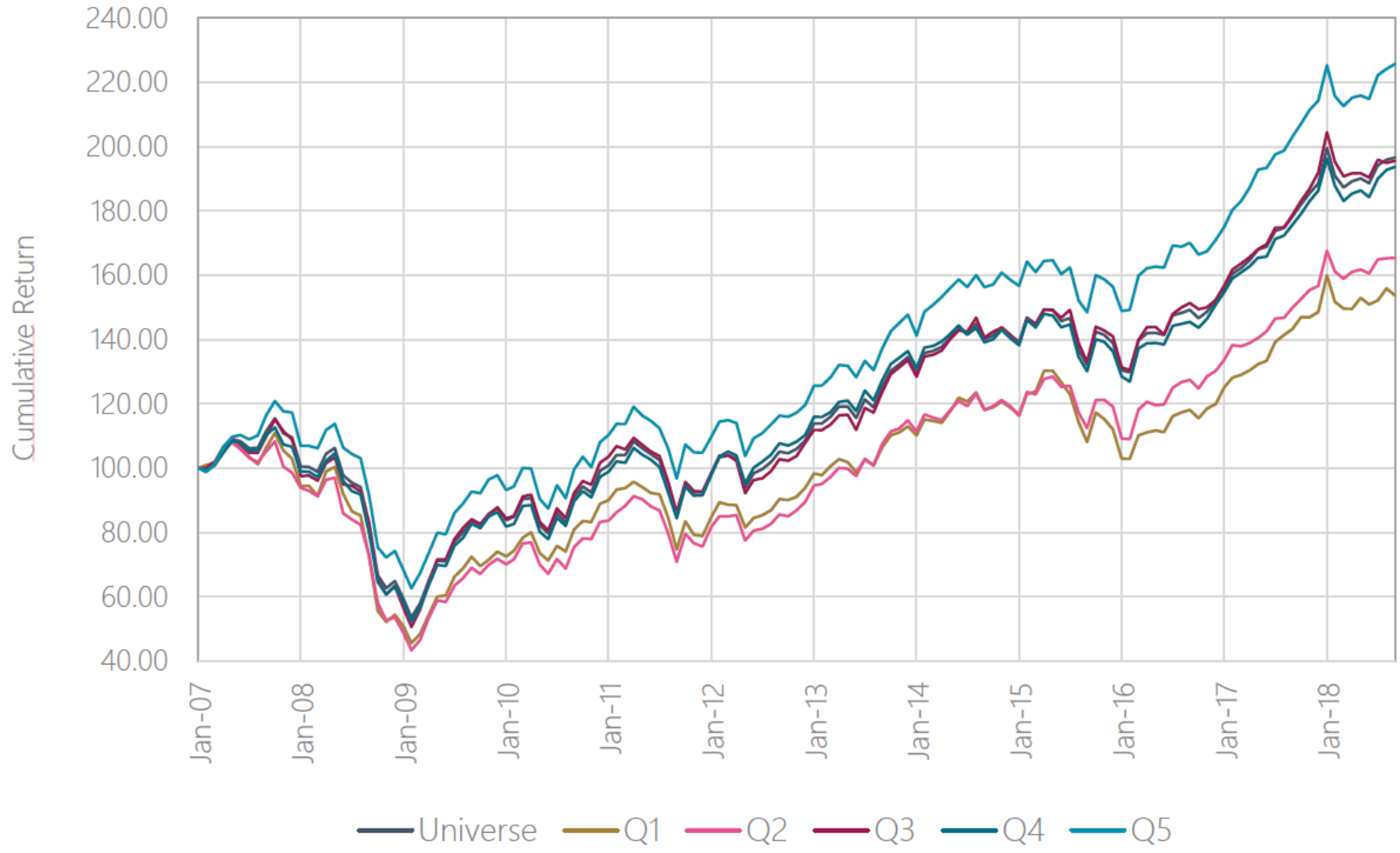
Created by The Impacter, for illustration only, not a comprehensive list of ESG

How ESG Creating Values

- **Top-line growth** from such as sale of sustainable products, better access to resources through stronger community and government relations
- **Cost reductions** from such as lower energy consumption, water intake reduction, packaging reduction
- **Lesser regulatory and legal interventions**, earn subsidies and government support, avoid incurring fines, penalties and enforcement actions
- **Productivity uplift** that boost employee motivation, attract talent through greater social credibility
- **Investment and asset optimization** by better allocating capital for the long term (plant and equipment), avoid investments with longer-term environment issues

Further Reading: [Five ways that ESG creates value](#), Witold Henisz, Tim Koller, and Robin Nuttall, McKinsey Quarterly, November 2019

Companies with high ESG performance outperform the market



The “Top 20%” outperform the “Bottom 20%” by 3.4% p.a.

Source: Arabesque s-ray: case for corporate sustainability 2019

Stakeholder Interest

Stakeholder Interest

Stakeholder pressure that customers receive from the groups listed below drives the need for sustainability management. As pressure from these groups increases, customers enhance their management across their value chains, and the pressure transfers upstream to suppliers.



Investor Momentum

Investor Interests

Investors are increasingly asking companies to disclose strategies for long-term value creation and incorporation of ESG into business strategies.

BLACKROCK

“Unnerved by fundamental economic changes and the failure of government to provide lasting solutions, society is increasingly looking to companies, both public and private, to **address pressing social and economic issues**. These issues range from **protecting the environment to retirement to gender and racial inequality** ... Companies that fulfill their purpose and responsibilities to stakeholders reap rewards over the long-term. Companies that ignore them stumble and fail. This dynamic is becoming increasingly apparent as **the public holds companies to more exacting standards.**”

– Larry Fink, BlackRock Letter to CEOs, 2019



“Researchers have documented that in the U.S. and U.K. now, **more value is driven by intangible**, rather than tangible, **assets**. However, through engagement we have found that few directors can adequately **articulate their company’s culture** or demonstrate how they **assess, monitor and influence change** when necessary... we do believe that this is a material issue that must be addressed by companies and investors.”

– Cyrus Taraporevala, State Street Letter to Board Members, 2019

Further Reading: [Why the world’s largest asset managers are pushing long-term thinking](#), Mark Tulay, Director, Strategic Investor Initiative, CECP



กองทุนบำเหน็จบำนาญข้าราชการ

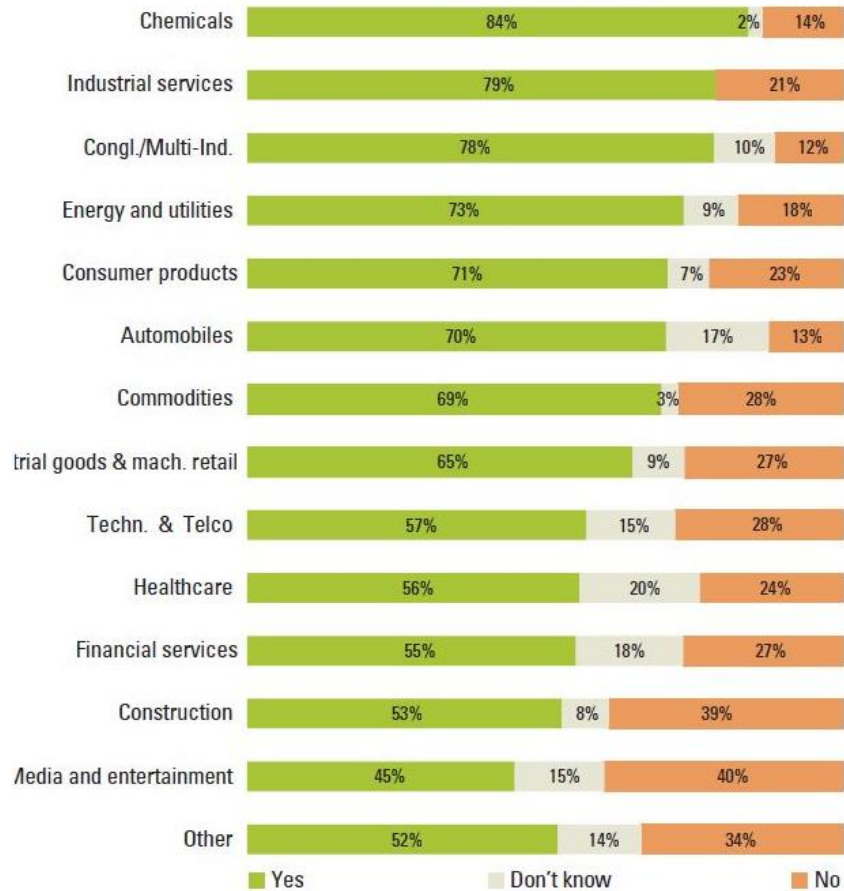
กบข. ร่วมกับนักลงทุนสถาบันรวม 32 ราย ประกาศเจตนารมณ์ความร่วมมือด้านการลงทุนอย่างรับผิดชอบ (ESG Collaborative Engagement) โดยร่วมลงนามแนวปฏิบัติ “การระงับลงทุน” (Negative List Guideline) ในบริษัทจดทะเบียนที่มีประเด็นปัญหา ESG

- สื่อเผยแพร่ กบข. -

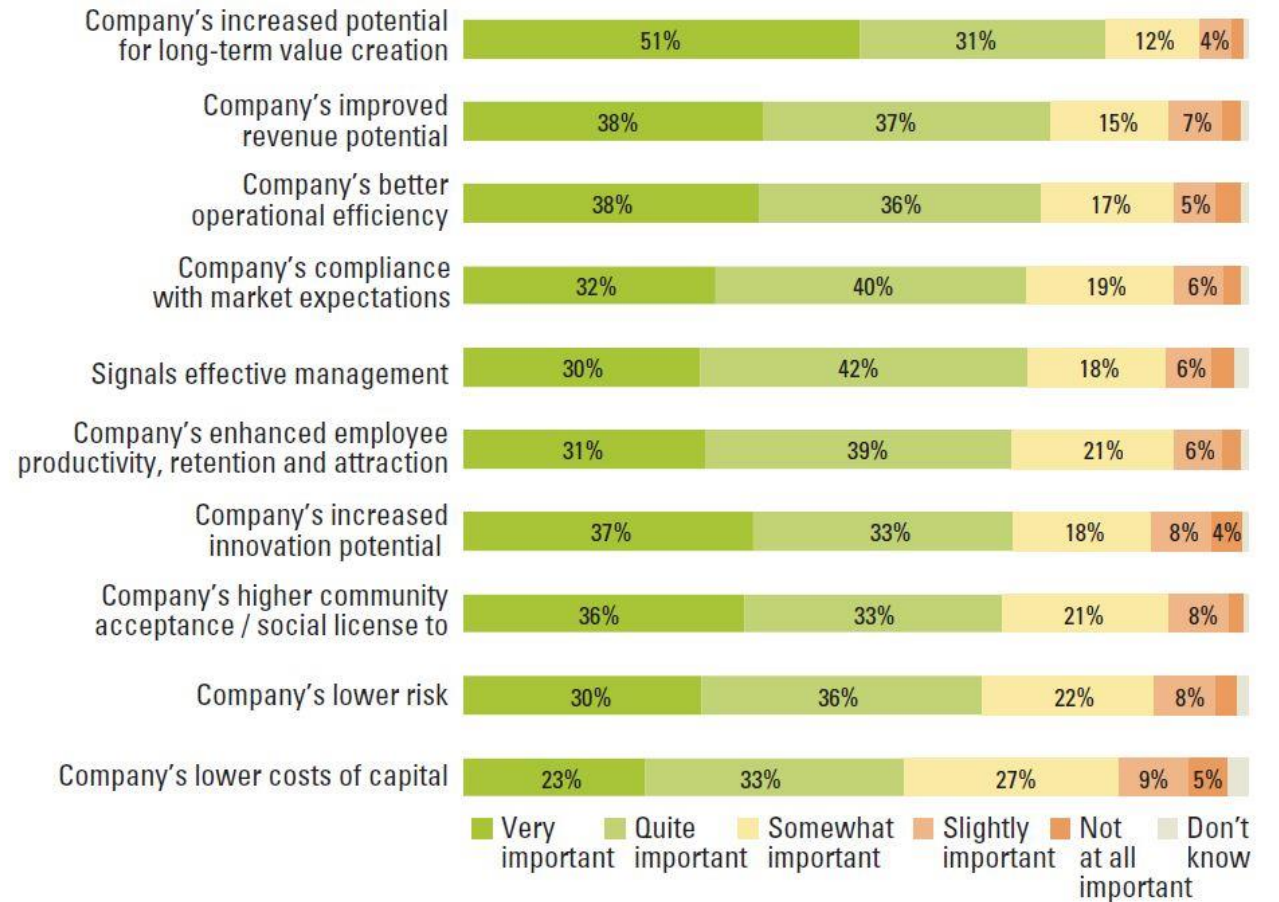


Pressure from Investors

Does your organization have a sustainability strategy?



Why is a company's good sustainability performance important to your firm when making investment decisions?



Source: Investing for a sustainable future MITSloan Management Review 2016

World's Largest Asset Manager Encourages Long-Term Focus on Creating Sustainable Value

In his annual letter to the CEOs of the S&P 500 on January 12, 2019, Larry Fink once again highlighted the importance of understanding the impacts that will enable long-term financial growth.

BlackRock's [Investment Stewardship](#) engagement priorities for 2019 are:

- governance, including . . . board diversity;
- corporate strategy and capital allocation;
- compensation that promotes long-termism;
- environmental risks and opportunities; and
- human capital management.

LARRY FINK'S ANNUAL LETTER TO CEOs

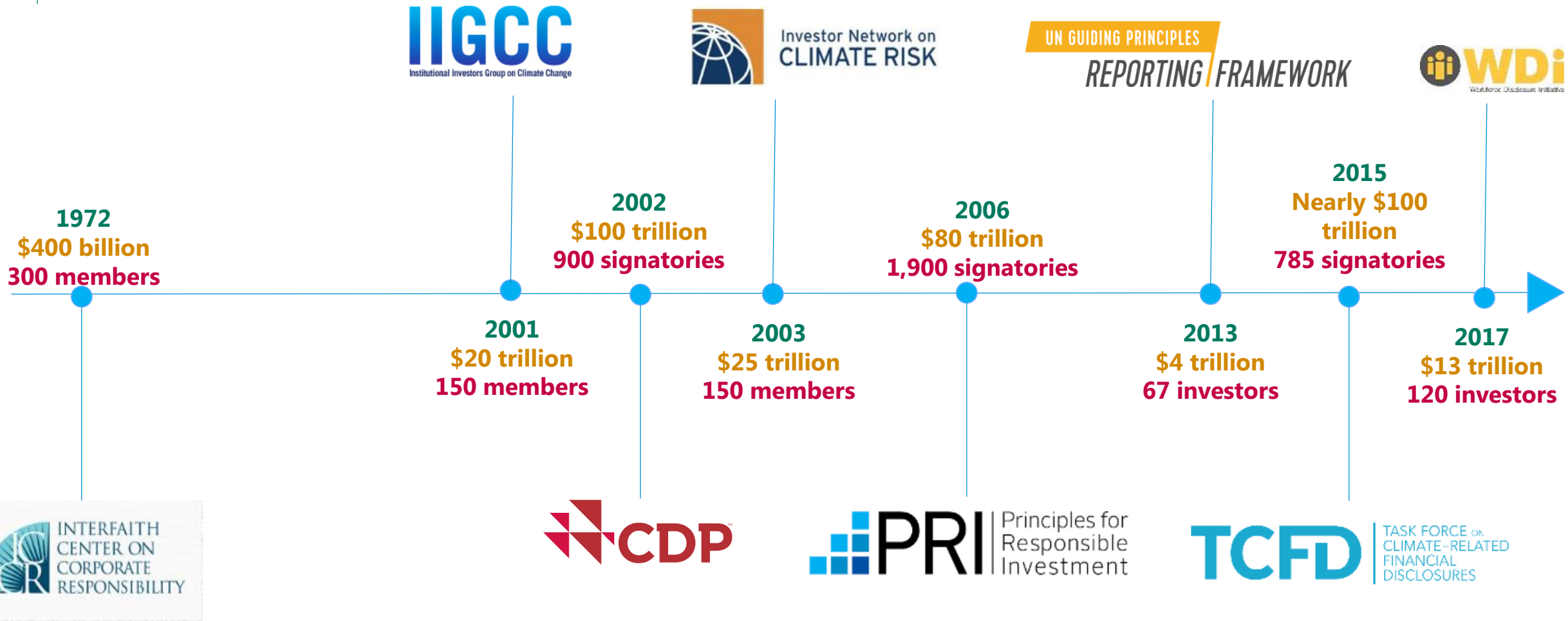
A Sense of Purpose

Dear CEO,

As BlackRock approaches its 30th anniversary this year, I have had the opportunity to reflect on the most pressing issues facing investors today and how BlackRock must adapt to serve our clients more effectively. It is a great privilege and responsibility to manage the assets clients have entrusted to us, most of which are invested for long-term goals such as retirement. As a fiduciary, BlackRock **engages with companies** to drive the sustainable, long-term growth that our clients need to meet their goals.

In 2017, equities enjoyed an extraordinary run – with record highs across a wide range of sectors – and yet popular frustration and apprehension about the future simultaneously reached new heights. We are seeing a paradox of high returns and high anxiety. Since the financial crisis, those with capital have reaped enormous benefits. At the same time, many individuals across the world are facing a combination of low rates, low wage growth, and inadequate retirement systems. Many don't have the financial capacity, the resources, or the tools to save effectively; those who are invested are too often over-allocated to cash. For millions, the prospect of a secure retirement is slipping further and further away – especially among workers with less education, whose job security is increasingly tenuous. I believe these trends are a major source of the anxiety and polarization that we see across the world today.

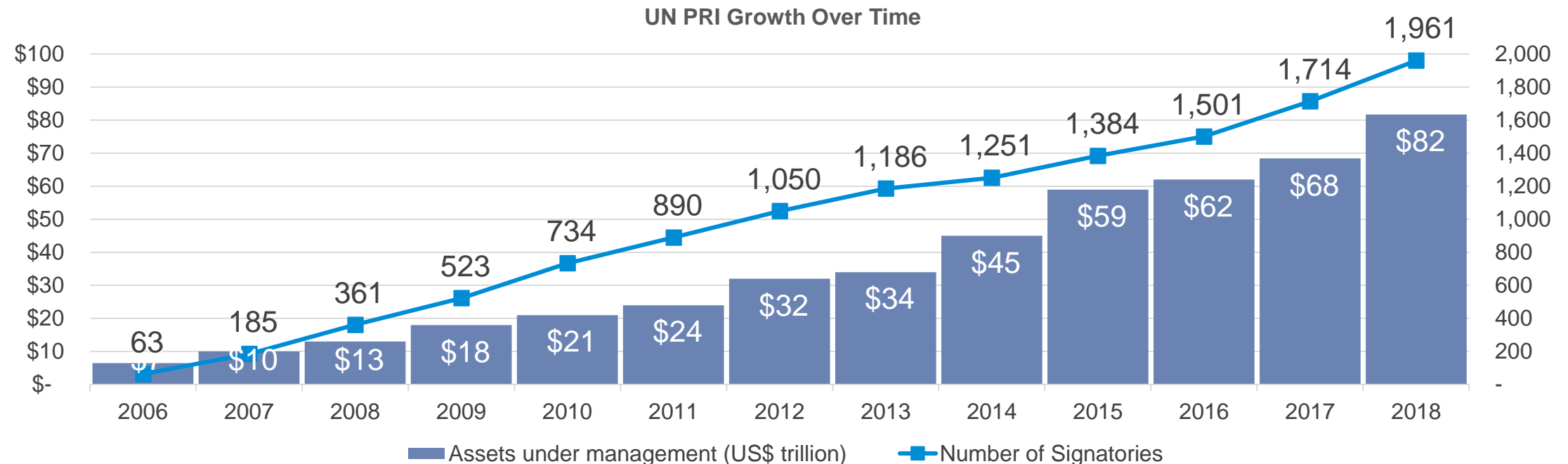
Investor Coalitions and Networks



UN Principles for Responsible Investment (PRI)

The United Nations-supported Principles for Responsible Investment is an international network of investors working together to understand the implications of sustainability for investors and support signatories to incorporate these issues into their investment decision making and ownership practices.

- 2006: 63 investment companies with \$6.5 trillion in assets under management (AUM)
- 2018: 1,961 signatories with \$81.7 trillion in AUM (21 percent increase in 12 months)



Source: <http://www.unpri.org/>

UN PRI Signatories (sample)



Evolving Interests

GRI (1997) – Globally Crowdsourced ESG Issues

Environmental

- Materials
- Energy
- Water
- Biodiversity
- Emissions
- Effluents and Waste
- Products and Services
- Environmental Compliance
- Transport
- Supplier Environmental Assessment
- Environmental Grievance Mechanisms

Human Rights

- Non-discrimination
- Freedom of Association & Collective Bargaining
- Child Labor
- Forced /Compulsory Labor
- Security Practices
- Indigenous Rights
- Supplier Human Rights Assessment
- Human Rights Grievance Mechanisms

Labor Practices & Decent Work

- Training and Education
- Employment
- Labor/Management Relations
- Occupational Health & Safety
- Diversity & Equal Opportunity
- Equal Remuneration for Men and Women
- Supplier Assessment for Labor Practices
- Labor Practices Grievance Mechanisms

Economic

- Economic Performance
- Philanthropy
- Market Presence
- Indirect Economic Impacts
- Economic Inclusion
- Procurement Practices


Society

- Anti-Corruption
- Public Policy
- Anti-competitive Behavior
- Local Communities
- Supplier Assessment for Impacts on Society
- Grievance Mechanisms for Impacts on Society

Product Responsibility

- Customer Health & Safety
- Product & Service Labeling
- Marketing Communications
- Customer Privacy
- Product Compliance





GHG Protocol (1997)



GREENHOUSE GAS PROTOCOL

ABOUT STANDARDS GUIDANCE CALCULATION TOOLS EVENTS ONLINE TRAINING

Subscribe to our mailing list to receive the latest updates from GHG Protocol. [SIGN UP](#)



What is GHG Protocol?

GHG Protocol establishes comprehensive global standardized frameworks to measure and manage greenhouse gas (GHG) emissions from private and public sector operations, value chains and mitigation actions.

Building on a 20-year partnership between World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), GHG Protocol works with governments, industry associations, NGOs, businesses and other organizations.

We offer [online training](#) on our standards and tools, as well as the “[Built on GHG Protocol](#)” review service, which recognizes sector guidance, product rules and tools that are in conformance with GHG Protocol standards.

Who Uses GHG Protocol?


GHG Protocol supplies the world’s most widely used greenhouse gas accounting standards. The [Corporate Accounting and Reporting Standard](#) provides the accounting platform for virtually every corporate GHG reporting program in the world.

Companies and Organizations

In 2016, 92% of Fortune 500 companies responding to the CDP used GHG Protocol directly or indirectly through a program based on GHG Protocol.

[Learn more about our work for companies and organizations.](#)

For media inquires, please contact:
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Office: +1 202-729-7845



IIRC (2009 / 2010) – Six Capitals

- Six Capitals:
- Financial
 - Manufactured
 - Intellectual
 - Human
 - Social and relationship
 - Natural

THE IIRC NEWS NETWORKS PUBLICATIONS TRAINING CORPORATE REPORTING DIALOGUE CONTACT US

The IIRC

The International Integrated Reporting Council (IIRC) is a global coalition of regulators, investors, companies, standard setters, the accounting profession and NGOs. The coalition is promoting communication about value creation as the next step in the evolution of corporate reporting.

The IIRC

- Structure of The IIRC
- Governance and funding
- IIRC Partners

Mission

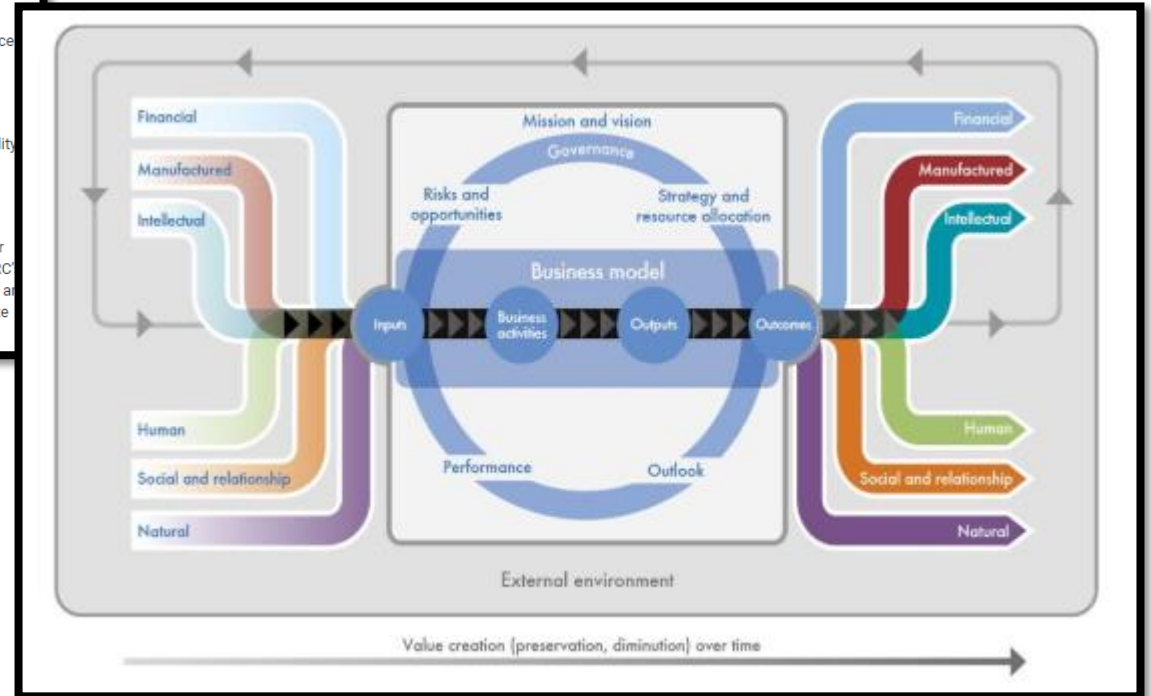
The IIRC's mission is to establish integrated reporting and thinking within mainstream business practice as the norm in the public and private sectors.

Vision

The IIRC's vision is to align capital allocation and corporate behaviour to wider goals of financial stability and sustainable development through the cycle of integrated reporting and thinking.

The Momentum Phase

The IIRC's is in the Momentum Phase of its strategy, delivering accelerated action towards our goal for integrated thinking and reporting to be the global norm and building on achievements following the IIRC breakthrough phase (2014-2018). The IIRC is leveraging the support of its partners to create the scale and pace to deliver a step change in adoption. The IIRC's objective for this phase is to change the corporate reporting system so that integrated reporting becomes the global norm.



SASB (2010 / 2011)



SASB Materiality Map™

SASB's Materiality Map™ identifies sustainability issues that are likely to affect the financial condition or operating performance of companies within an industry. In the left-hand column, SASB identifies 26 sustainability-related business issues, or General Issue Categories, which encompass a range of Disclosure Topics and their associated Accounting Metrics that vary by industry. For example, the General Issue Category of Customer Welfare encompasses both the Health and Nutrition topic in the Processed Foods industry and the Counterfeit Drugs topic in the Health Care Distributors industry. For commercial use terms of the Materiality Map, [please contact us](#).

Sector Level Map

- Issue is likely to be material for more than 50% of industries in sector
- ▒ Issue is likely to be material for fewer than 50% of industries in sector
- Issue is not likely to be material for any of the industries in sector

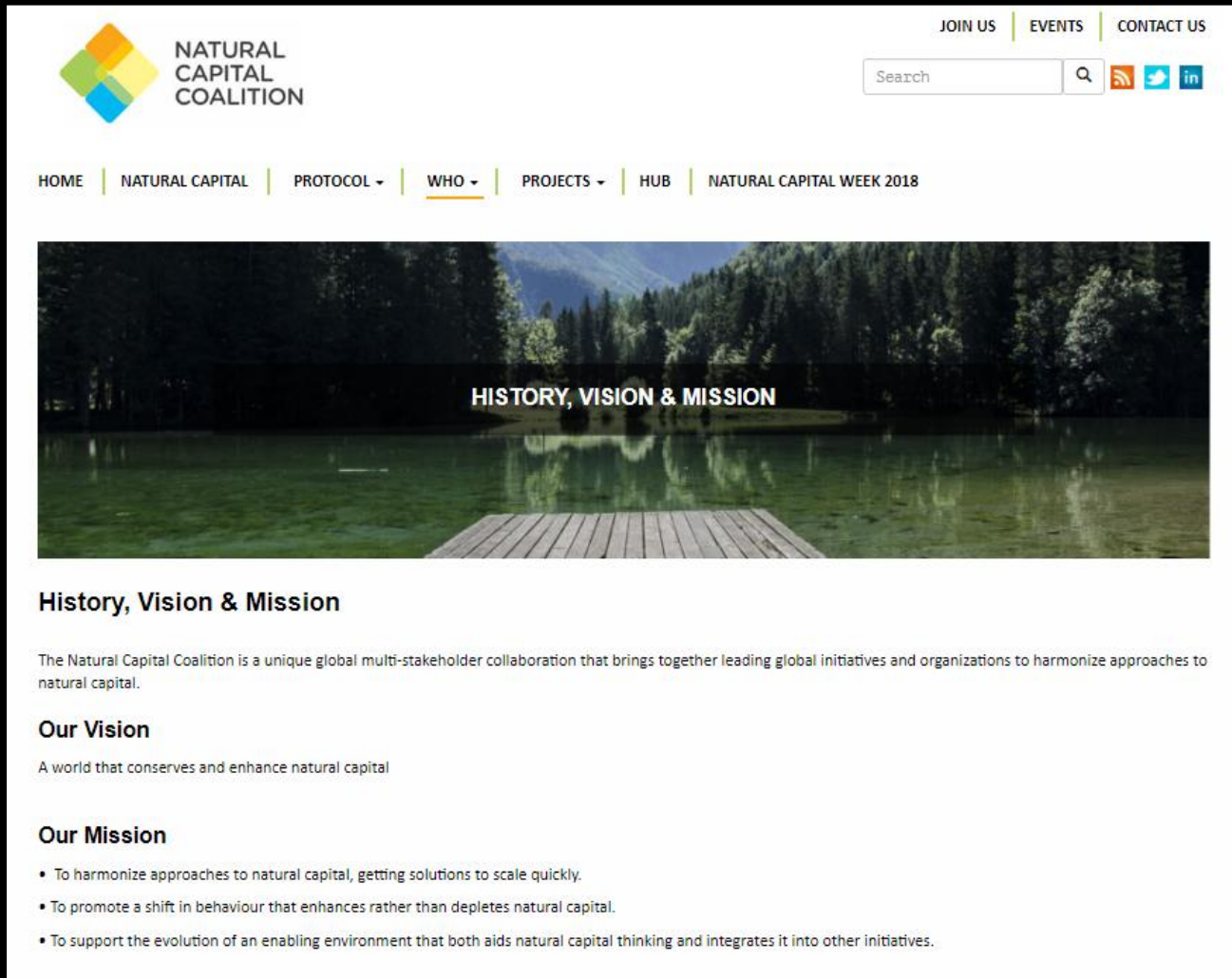
Industry Level Map

- Not likely a material issue for companies in the industry
- Likely a material issue for companies in the industry

		Consumption	Financials	Health Care	Infrastructure	Non-Renewable Resources	Renewable Resources & Alternative Energy	Resource Transformation	Services	Technology & Communications	Transportation
Dimension	General Issue Category [□]	Click to expand	Click to expand	Click to expand	Click to expand	Click to expand	Click to expand	Click to expand	Click to expand	Click to expand	Click to expand
Environment	GHG emissions	■	■	■	■	■	■	■	■	■	■
	Air quality	■	■	■	■	■	■	■	■	■	■
	Energy management	■	■	■	■	■	■	■	■	■	■
	Fuel management	■	■	■	■	■	■	■	■	■	■
	Water and wastewater management	■	■	■	■	■	■	■	■	■	■
	Waste and hazardous materials management	■	■	■	■	■	■	■	■	■	■
Social Capital	Biodiversity impacts	■	■	■	■	■	■	■	■	■	■
	Human rights and community relations	■	■	■	■	■	■	■	■	■	■
	Access and affordability	■	■	■	■	■	■	■	■	■	■
	Customer welfare	■	■	■	■	■	■	■	■	■	■
	Data security and customer privacy	■	■	■	■	■	■	■	■	■	■
Human Capital	Fair disclosure and labeling	■	■	■	■	■	■	■	■	■	■
	Fair marketing and advertising	■	■	■	■	■	■	■	■	■	■
	Labor relations	■	■	■	■	■	■	■	■	■	■
	Fair labor practices	■	■	■	■	■	■	■	■	■	■
	Employee health, safety and wellbeing	■	■	■	■	■	■	■	■	■	■
Business Model and Innovation	Diversity and inclusion	■	■	■	■	■	■	■	■	■	■
	Compensation and benefits	■	■	■	■	■	■	■	■	■	■
	Recruitment, development and retention	■	■	■	■	■	■	■	■	■	■
	Lifecycle impacts of products and services	■	■	■	■	■	■	■	■	■	■
	Environmental, social impacts on core assets and operations	■	■	■	■	■	■	■	■	■	■
Leadership and Governance	Product packaging	■	■	■	■	■	■	■	■	■	■
	Product quality and safety	■	■	■	■	■	■	■	■	■	■
	Systemic risk management	■	■	■	■	■	■	■	■	■	■
	Accident and safety management	■	■	■	■	■	■	■	■	■	■
	Business ethics and transparency of payments	■	■	■	■	■	■	■	■	■	■
Leadership and Governance	Competitive behavior	■	■	■	■	■	■	■	■	■	■
	Regulatory capture and political influence	■	■	■	■	■	■	■	■	■	■
	Materials sourcing	■	■	■	■	■	■	■	■	■	■
	Supply chain management	■	■	■	■	■	■	■	■	■	■

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Natural Capital Coalition & Protocol (2012 / 2014)



The screenshot displays the website for the Natural Capital Coalition. At the top left is the logo, which consists of four overlapping squares in orange, green, and blue, next to the text 'NATURAL CAPITAL COALITION'. To the right of the logo are navigation links for 'JOIN US', 'EVENTS', and 'CONTACT US'. Below these is a search bar with the word 'Search' and a magnifying glass icon, followed by social media icons for RSS, Twitter, and LinkedIn. A secondary navigation bar contains links for 'HOME', 'NATURAL CAPITAL', 'PROTOCOL', 'WHO', 'PROJECTS', 'HUB', and 'NATURAL CAPITAL WEEK 2018', with 'WHO' highlighted. The main content area features a large image of a lake with a wooden dock extending into the water, surrounded by a dense forest and mountains in the background. Overlaid on this image is the text 'HISTORY, VISION & MISSION'. Below the image, the page title 'History, Vision & Mission' is repeated. The text describes the coalition as a unique global multi-stakeholder collaboration. It then outlines 'Our Vision' as a world that conserves and enhances natural capital, and 'Our Mission' with three bullet points: to harmonize approaches to natural capital, to promote a shift in behavior that enhances rather than depletes natural capital, and to support the evolution of an enabling environment that integrates natural capital thinking into other initiatives.

NATURAL CAPITAL COALITION

JOIN US | EVENTS | CONTACT US

Search

HOME | NATURAL CAPITAL | PROTOCOL | **WHO** | PROJECTS | HUB | NATURAL CAPITAL WEEK 2018

HISTORY, VISION & MISSION

History, Vision & Mission

The Natural Capital Coalition is a unique global multi-stakeholder collaboration that brings together leading global initiatives and organizations to harmonize approaches to natural capital.

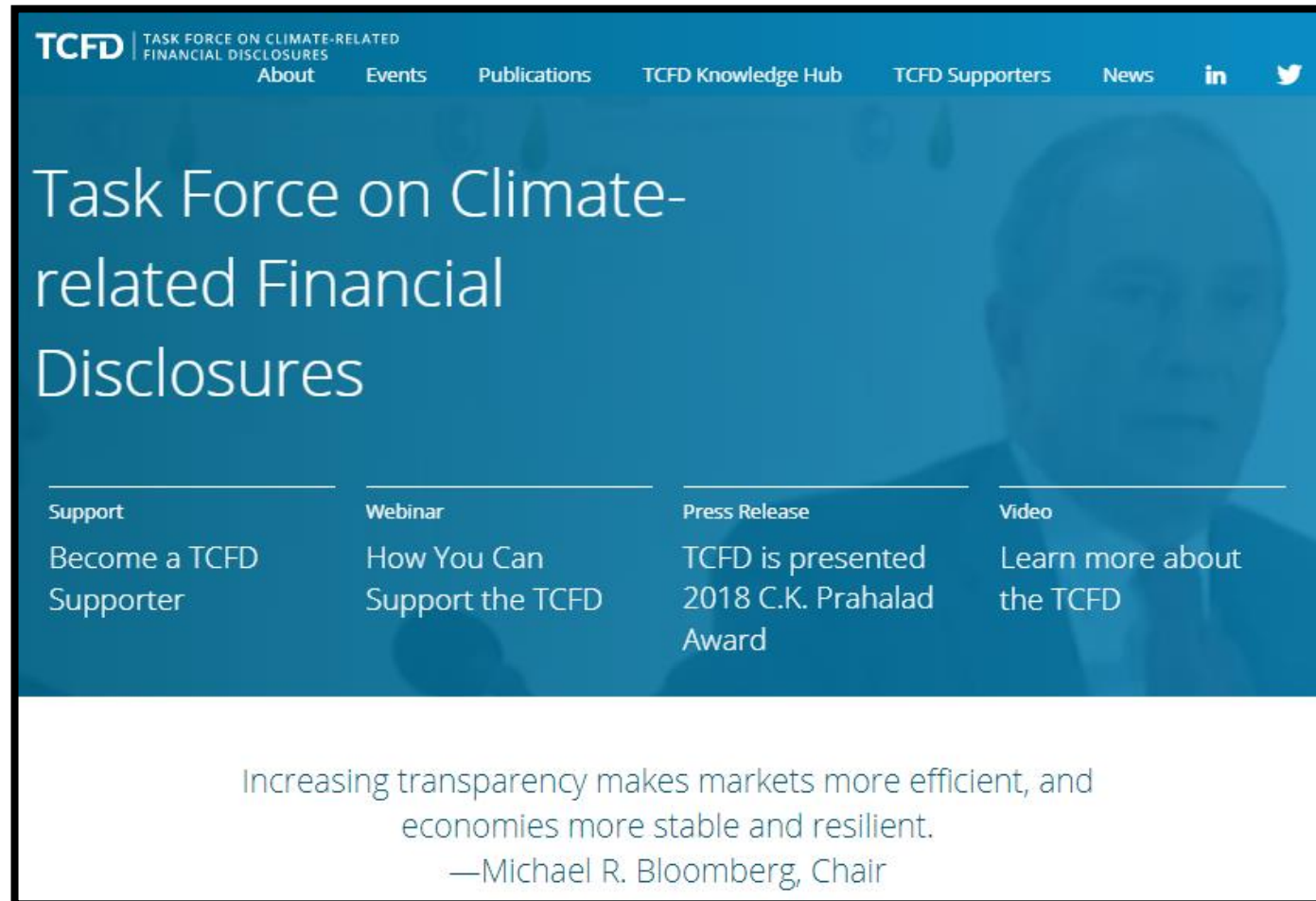
Our Vision

A world that conserves and enhance natural capital

Our Mission

- To harmonize approaches to natural capital, getting solutions to scale quickly.
- To promote a shift in behaviour that enhances rather than depletes natural capital.
- To support the evolution of an enabling environment that both aids natural capital thinking and integrates it into other initiatives.

Task Force on Climate-Related Financial Disclosures (2015)



The image shows a screenshot of the TCFD website homepage. The header features the TCFD logo and navigation links: About, Events, Publications, TCFD Knowledge Hub, TCFD Supporters, News, LinkedIn, and Twitter. The main heading reads "Task Force on Climate-related Financial Disclosures". Below this, there are four columns of content: "Support" (Become a TCFD Supporter), "Webinar" (How You Can Support the TCFD), "Press Release" (TCFD is presented 2018 C.K. Prahalad Award), and "Video" (Learn more about the TCFD). At the bottom, a quote states: "Increasing transparency makes markets more efficient, and economies more stable and resilient. —Michael R. Bloomberg, Chair".

TCFD | TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

About Events Publications TCFD Knowledge Hub TCFD Supporters News [in](#) [t](#)

Task Force on Climate-related Financial Disclosures

Support Become a TCFD Supporter	Webinar How You Can Support the TCFD	Press Release TCFD is presented 2018 C.K. Prahalad Award	Video Learn more about the TCFD
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Increasing transparency makes markets more efficient, and economies more stable and resilient.
—Michael R. Bloomberg, Chair

SDGs (2015 / 2016)



Social & Human Capital Coalition (2016 / 2019)

MENU

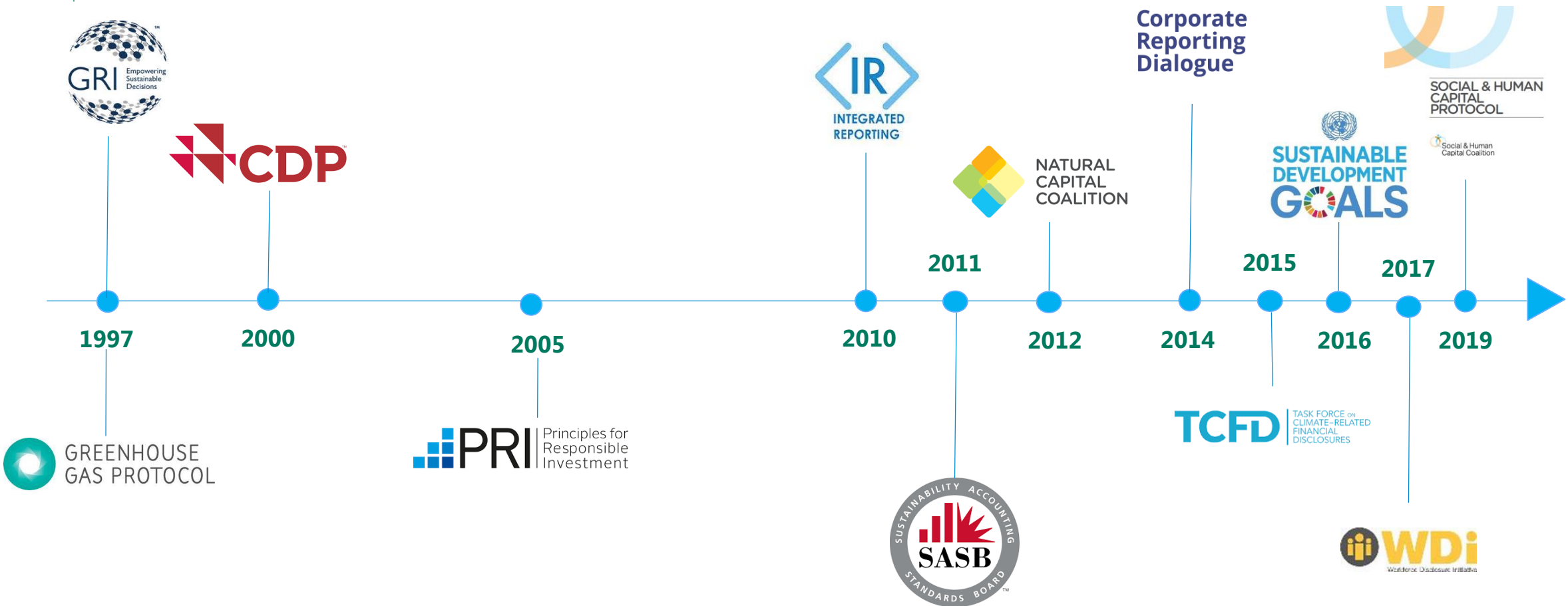
Social & Human Capital Coalition

Introducing the Social & Human Capital Coalition

The Social & Human Capital Coalition is a global multi-stakeholder collaboration that brings together leading initiatives and organizations to help companies recognize, measure and value the importance of people and communities.

- [ABOUT THE COALITION →](#)
- [THE NEED FOR ACTION →](#)
- [NEWS & EVENTS →](#)
- [OUR BOARD →](#)
- [OUR TEAM →](#)
- [JOIN OUR MAILING LIST →](#)

20+ Years of Compounding Interest



ESG Ecosystem

Who makes up the ESG Ecosystem?

Based on sustainability reporting standards and frameworks, there are 100+ organizations producing lists, rankings, ratings, and scorecards of the “top companies” and “most sustainable” companies.



***ESG Due Diligence:
Tech Sector***

ESG Scores & Comparisons (sample)

Overview Comp Sheets Markets EPS Preview Ownership Credit Custom ⚙️											
Equity Valuation CDS Spreads Profitability Balance Sheet ESG											
Name	↑ RobecoSAM Total Sustainability Rank	Sustainalytics ESG Rank	ISS Governance Quickscore	CDP Performance Score	ESG Disclosure Score	% Independent Directors on Board	% Women on Board	CEO Tenure as of FYE	Total Compensation Awarded to CEO	% Women in Workforce	Energy Intensity per Sales
Median	70	91.10	3.50	7.00	53.11	88.19	24.04%	4.54	11.88M	30.90	68.65
100) ALIBABA GROUP HOLDI...	11	--	--	--	--	--	--	--	--	--	--
101) ALPHABET INC-CL A	57	83.73	10.00	8.00	--	54.55	18.18%	3.25	1.00	30.90	--
102) AMAZON.COM INC	45	17.20	6.00	--	--	88.89	33.33%	22.67	1.68M	--	--
103) APPLE INC	18	77.32	1.00	8.00	53.11	87.50	25.00%	7.17	15.68M	33.00	9.78
104) FLEX LTD	64	87.63	4.00	4.00	--	--	--	13.00	16.17M	--	--
105) HITACHI LTD	70	68.04	1.00	6.00	57.85	66.67	16.67%	2.00	5.18M	--	300.14
106) HUAWEI TECHNOLOGIES...	--	--	--	--	--	--	--	--	--	--	--
107) INTEL CORP	70	98.25	3.00	7.00	--	88.89	22.22%	0.58	34.76M	--	--
108) INTL BUSINESS MACHI...	66	94.58	7.00	6.00	--	92.31	23.08%	7.00	17.55M	--	--
109) LG ELECTRONICS INC	100	--	4.00	8.00	--	--	--	2.08	2.84M	--	--
110) MICROSOFT CORP	91	95.78	1.00	8.00	--	85.71	28.57%	4.42	25.84M	--	--
111) NOKIA OYJ	86	96.91	1.00	7.00	--	100.00	40.00%	4.67	5.49M	--	--
112) ROBERT BOSCH GMBH	--	--	--	--	--	--	--	--	--	--	88.48
113) SAMSUNG ELECTRONICS...	78	--	2.00	8.00	--	54.55	9.09%	0.83	35.81M	--	--
114) SIEMENS AG-REG	100	97.78	6.00	7.00	50.83	90.00	35.00%	5.17	8.08M	24.00	48.82

(Accounting Adjustments: Adjusted for Abnormal Items When Applicable)

10) Analyze List

Source: Bloomberg data accessed 06/10/19

Environmental Metrics (sample)

Overview Comp Sheets Markets EPS Preview Ownership Credit Custom										
Create Template Social ESG Com Spe... H&S Met... Environ... Governa... More...										
Name	RobecoSAM Environ Dim Rnk	Sustainalytics Environ Pctl:D-1	GHG Emissions:Y	GHG Scope 1:Y	GHG Scope 2:Y	GHG Scope 3:Y	Renew Energy:Y	Env Supply Pol:Y	Climate Chg Pol:Y	
Median	82	94.77	2.78M	821.00k	1.69M	15.49M	1.20M	1	1	
100) ALIBABA GROUP HOLDI...	21	--	--	--	--	--	--	--	--	--
101) ALPHABET INC-CL A	75	90.36	--	--	--	--	--	1	--	--
102) AMAZON.COM INC	46	35.48	--	--	--	--	--	1	--	--
103) APPLE INC	27	95.88	831.09k	54.59k	776.50k	520.50k	2.39M	1	1	1
104) FLEX LTD	42	81.44	--	--	--	--	--	--	--	--
105) HITACHI LTD	82	75.26	4.72M	2.12M	2.60M	117.11M	7.37k	1	1	1
106) HUAWEI TECHNOLOGIES...	--	--	--	--	--	--	--	--	--	--
107) INTEL CORP	62	98.25	--	--	--	--	--	--	--	--
108) INTL BUSINESS MACHI...	82	98.19	--	--	--	--	--	1	--	--
109) LG ELECTRONICS INC	100	--	--	--	--	--	--	--	--	--
110) MICROSOFT CORP	88	93.98	--	--	--	--	--	1	--	--
111) NOKIA OYJ	86	96.91	--	--	--	--	--	--	--	--
112) ROBERT BOSCH GMBH	--	--	--	--	--	--	--	--	--	--
113) SAMSUNG ELECTRONICS...	96	--	--	--	--	--	--	--	--	--
114) SIEMENS AG-REG	100	95.56	--	821.00k	--	15.49M	--	1	1	1

(Accounting Adjustments: Adjusted for Abnormal Items When Applicable)

10) Analyze List

Source: Bloomberg data accessed 06/10/19

Social Metrics (sample)

Overview Comp Sheets Markets EPS Preview Ownership Credit Custom ⚙️												
Create Template Social ESG Com Spe... H&S Met... Environ... Governa... More...												
Name	↑ RobecoSAM Soc Dim Rnk	Sustainalytics Soc Pctl:D-1	Health/Safte... Pol:Y	LTIR:Y	Tot Rcrdble Incdnt Rt:Y	Emp CSR Trng:Y	Fatalities Total:Y	Soc Supp Chn Mgmt	Human Rights Pol:Y			
Median	67	90.11	1	0.46	0.00	0	5	1.00	1			
100) ALIBABA GROUP HOLDI...	25	--	--	--	--	--	--	0.00	--			
101) ALPHABET INC-CL A	48	91.57	1	--	--	--	--	1.00	1			
102) AMAZON.COM INC	30	43.01	1	--	--	--	--	1.00	1			
103) APPLE INC	5	44.33	1	--	--	0	--	1.00	1			
104) FLEX LTD	73	87.63	--	--	--	--	--	--	--			
105) HITACHI LTD	67	56.70	1	--	--	1	--	1.00	1			
106) HUAWEI TECHNOLOGIES...	--	--	--	--	--	--	--	--	--			
107) INTEL CORP	78	98.25	1	--	--	--	--	--	1			
108) INTL BUSINESS MACHI...	55	96.39	1	--	--	--	--	1.00	1			
109) LG ELECTRONICS INC	100	--	--	--	--	--	--	--	--			
110) MICROSOFT CORP	88	95.18	1	--	--	0	--	1.00	1			
111) NOKIA OYJ	86	88.66	--	--	--	--	--	--	--			
112) ROBERT BOSCH GMBH	--	--	--	--	--	--	--	0.00	--			
113) SAMSUNG ELECTRONICS...	61	--	--	--	--	--	--	--	--			
114) SIEMENS AG-REG	92	97.78	1	0.46	--	0	5	1.00	1			

(Accounting Adjustments: Adjusted for Abnormal Items When Applicable)

10) Analyze List

Source: Bloomberg data accessed 06/10/19

Governance Metrics (sample)

Overview Comp Sheets Markets EPS Preview Ownership Credit Custom ⚙️										
Create Template Governa... Social ESG Com Spe... H&S Met... Environ... More...										
Name	RobecoSAM Econ Dim Rnk	Sustainalytics Gov Pctl:D-1	% Women Mgt:Y	% Women on Bd:Y	% Women Emp:Y	# Feml Execs	Indep Chrprsn	% Indep Directors:Y		
Median	68	76.45	27.25	24.04%	30.90	2.00	0.00	88.19		
100) ALIBABA GROUP HOLDI...	18	--	--	--	--	6.00	0.00	--		
101) ALPHABET INC-CL A	32	1.20	25.50	18.18%	30.90	2.00	1.00	54.55		
102) AMAZON.COM INC	46	8.60	--	33.33%	--	1.00	0.00	88.89		
103) APPLE INC	14	49.48	29.00	25.00%	33.00	2.00	1.00	87.50		
104) FLEX LTD	76	86.60	--	--	--	0.00	1.00	--		
105) HITACHI LTD	61	53.61	--	16.67%	--	0.00	0.00	66.67		
106) HUAWEI TECHNOLOGIES...	--	--	--	--	--	--	--	--		
107) INTEL CORP	68	92.98	--	22.22%	--	0.00	0.00	88.89		
108) INTL BUSINESS MACHI...	63	72.89	--	23.08%	--	3.00	0.00	92.31		
109) LG ELECTRONICS INC	100	--	--	--	--	6.00	0.00	--		
110) MICROSOFT CORP	97	91.57	--	28.57%	--	3.00	1.00	85.71		
111) NOKIA OYJ	86	98.97	--	40.00%	--	2.00	1.00	100.00		
112) ROBERT BOSCH GMBH	--	--	--	--	--	0.00	--	--		
113) SAMSUNG ELECTRONICS...	83	--	--	9.09%	--	59.00	0.00	54.55		
114) SIEMENS AG-REG	96	80.00	--	35.00%	24.00	2.00	1.00	90.00		

(Accounting Adjustments: Adjusted for Abnormal Items When Applicable)

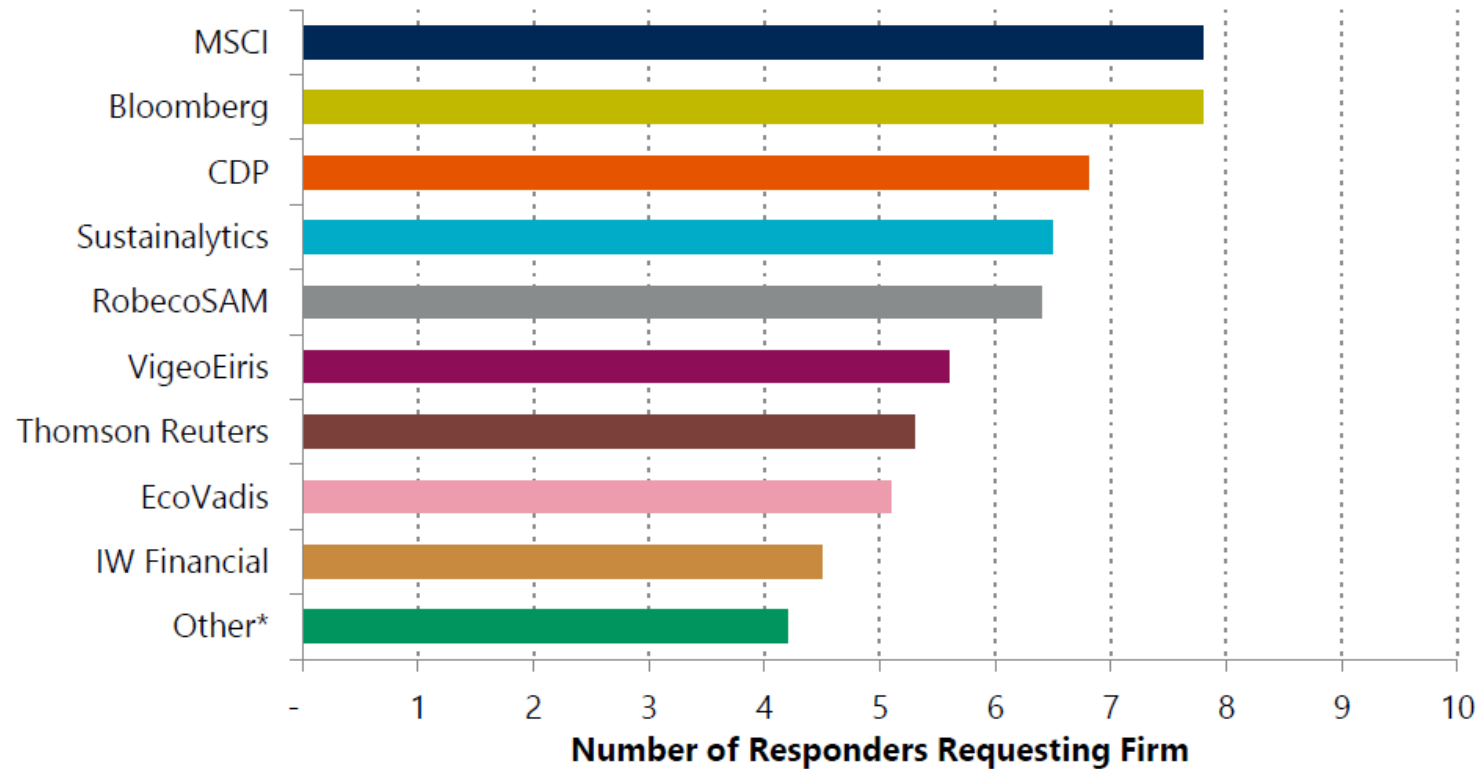
10) Analyze List

Source: Bloomberg data accessed 06/10/19

Corporate Resources

ESG Ratings & Rankings Survey

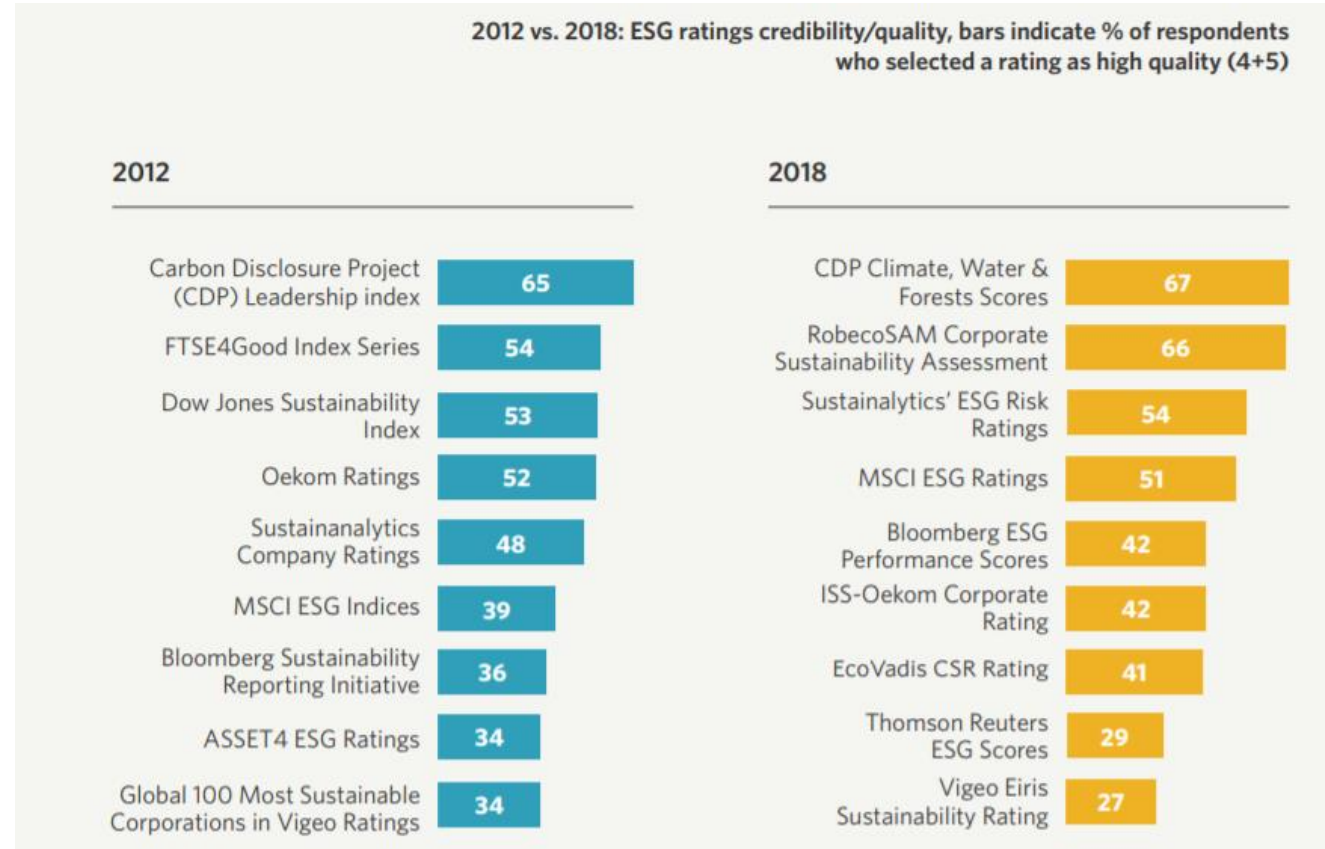
Which organizations would you be most interested in hearing from during a private forum?



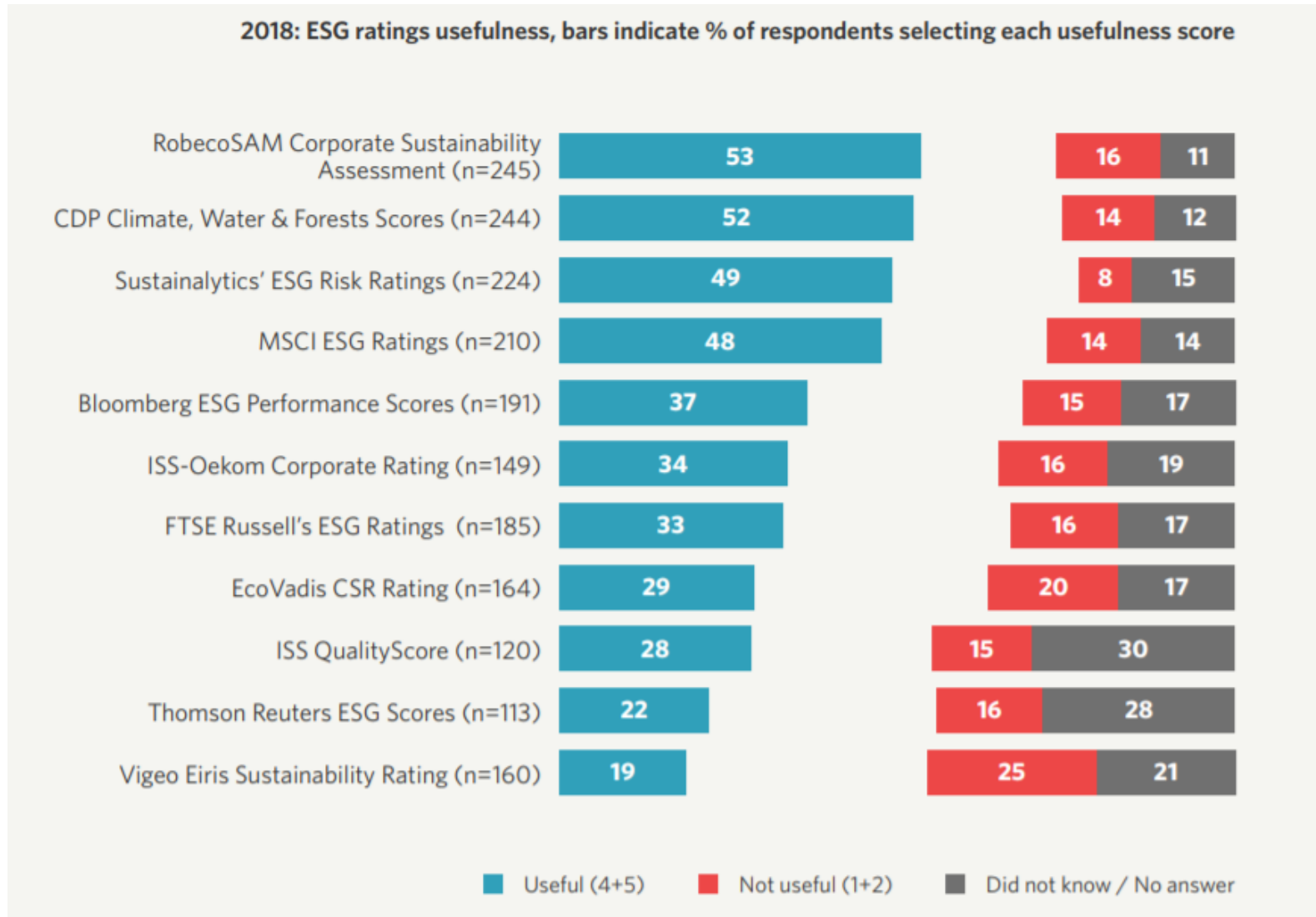
*Other: BlackRock, Calvert, Trucost (S&P), GRI, Investor Groups, Wellington, Vanguard, etc.

ESG Rate the Raters Results - Quality

- Survey of 319 sustainability professionals in the fall of 2018
- Second report forthcoming in 2019 focused on investor perspectives on ratings
- 2018 Top 5
 - CDP
 - RobecoSAM / DJSI
 - Sustainalytics
 - MSCI
 - Bloomberg



ESG Rate the Raters Results - Usefulness



ESG Analysis

How do you incorporate company's ESG performance into your analysis? How do you read rater results?

Step 1: Understand the ESG Ecosystem

- What does the ESG ratings and rankings ecosystem look like today?
- How companies disclose these things?
- Has the company disclose these things?
- Does company do a report, or try to fill the immediate gaps?

Step 2: Mapping & Assessment

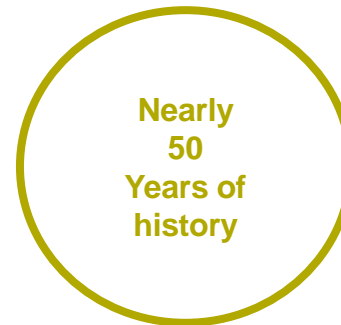
- What are the most important (material) ESG issues of the company / industry
- How the company address these material ESG issues (narrative)?
- Has there be any rater that rate or rank the company? What's the score?
- Conduct ESG due diligence process
- Who is looking at the company's score? How important are they to the company value (prioritize)

About ERM

Environmental Resources Management (ERM)

ERM is a leading global provider of environmental, health, safety, risk, social consulting services and sustainability related services. We have more than 5,000 people in over 40 countries and territories working out of more than 160 offices. ERM is committed to providing a service that is consistent, professional and of the highest quality to create value for our clients.

We help companies to deliver innovative solutions for business and selected government clients helping them understand and manage the sustainability challenges that the world is increasingly facing.



ERM Services

Working together to meet your environmental, health , safety and sustainability needs



Asset & Portfolio Management

Transforming liabilities into opportunities to help our clients maximize the value of their asset portfolio and drive stronger financial and reputational outcomes through proactive management of EHSS issues.



Healthy, Safety & Risk

Optimizing business performance by helping our clients derive greater value from their investments in health, safety, and risk management while protecting people, assets, and the environment.



Operational Performance

Improving operational performance for organizations around the world through an outcome-driven approach to EHSS, broad understanding of regulations and standards, and expert stakeholder management.



Data Management & Technology

Transforming EHSS data management from an administrative burden into a business advantage through innovative technology, automating processes, and integrating systems.



M&A Solutions

Empowering companies to identify, prioritize, and realize EHSS performance and efficiency opportunities when making acquisitions, merging and integrating operations, and divesting assets to increase overall value, accelerate return on investment, and attain strategic goals.



Environmental Compliance

Enabling organizations to realize maximum value from environmental activities and investments by better understanding and meeting compliance obligations in a continually changing regulatory landscape.



Major Capital Projects

Ensuring major capital projects stay on schedule, budget, and scope by providing EHSS insights and expertise throughout the project lifecycle, from planning and design to implementation and ongoing management.



Sustainability

Identifying and leveraging opportunities to improve performance and profitability, strengthen reputation and relationships with key stakeholders, and enhance competitive advantage by embedding sustainability across our clients' businesses.



Thank you

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