Project Delphi

The Material ESG Factors and Metrics that Drive Value

10 January 2018 @ AFG

Project Delphi

Introducing project Delphi

The Delphi process

The Delphi Framework

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PROBLEM

Need to achieving a consensus on the part of the investment community as to which issues or factors are significant for them

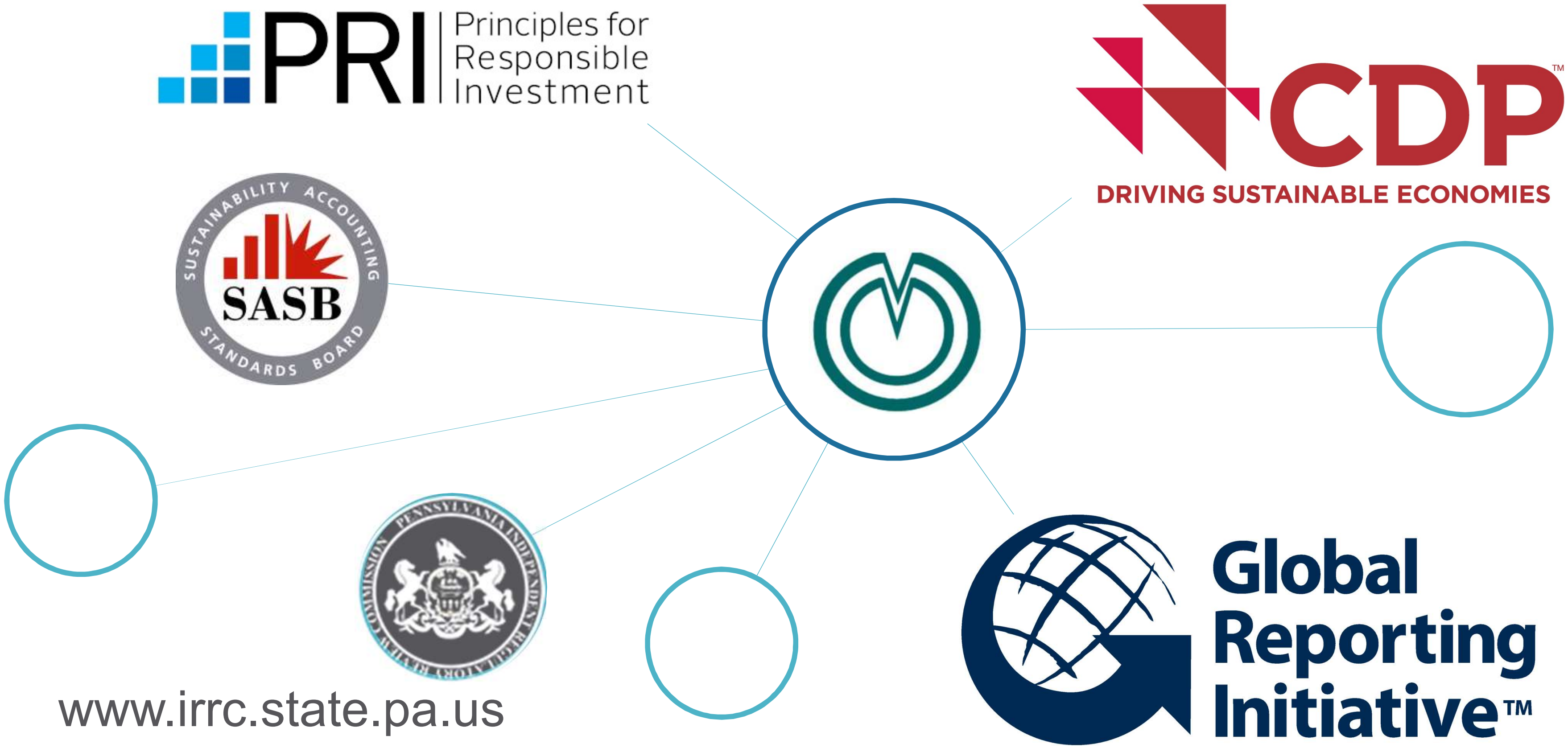
The next generation of ESG analysis wants data on alpha generation and risk management.

Incomplete ESG dialogue between investors and reporting companies, lack consensus as to which factors are significant for them

“sustainable assets” now $21.6 trn, up by 61% in the last 2 years (GSIA) = 59% of all professionally AuM in Europe. The selection of ESG assets requires a focus on the most material factors.

Inefficiencies in the allocation of resources, due to excessive focus on the short-term and a failure to take wider ESG considerations into account

Landscape of initiatives to integrate ESG factors in investment decisions



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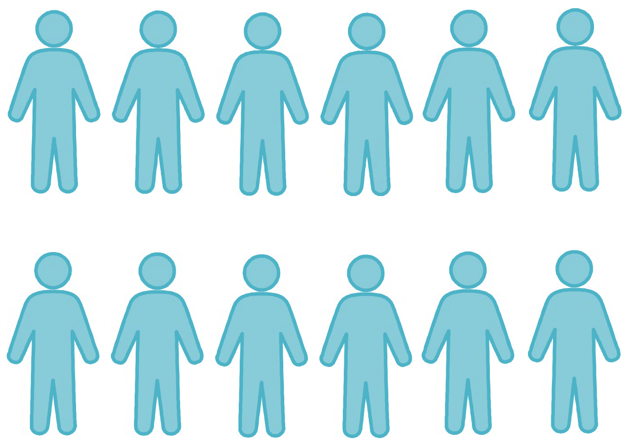
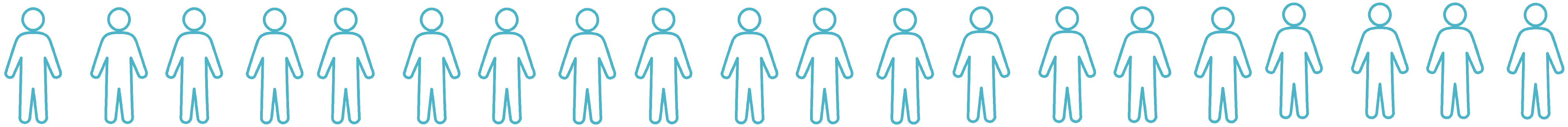


Delphi Project Advisors

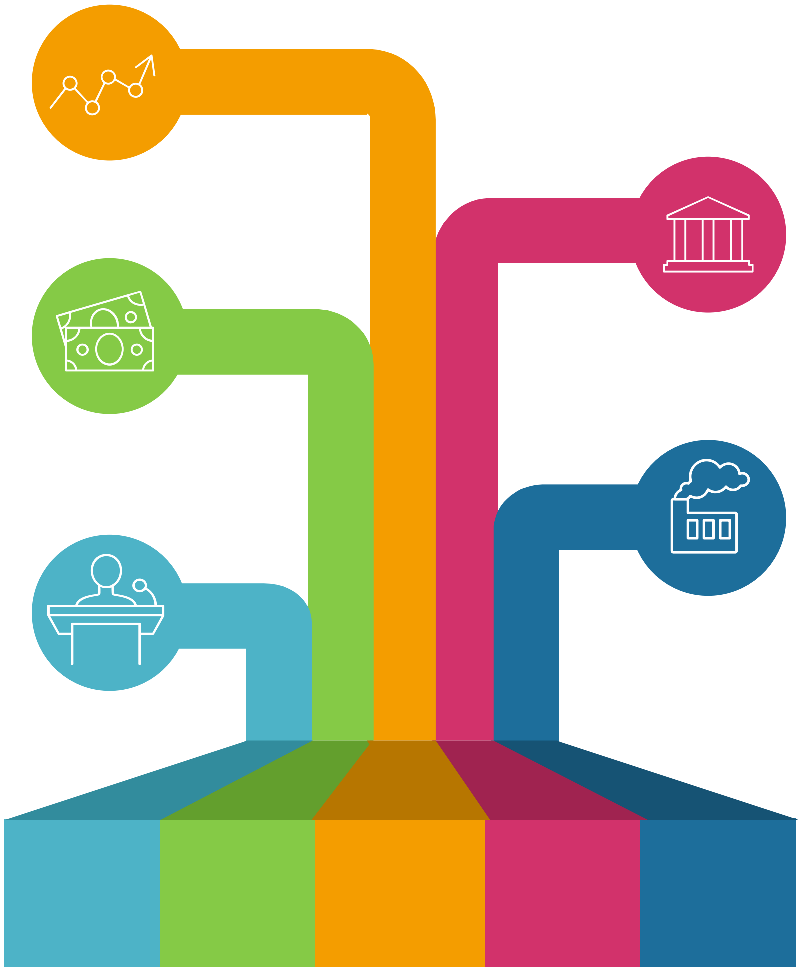


Storebrand
F&C
APG
KLP, Norway
Nestlé Deutschland
DNB (Dutch Central bank)
Towers Watson
Hymans Robertson
BofA Merrill Lynch
RobecoSAM
Sustainalytics
First State Investments
SAM Research AG

PGGM (consultative role)
Cambridge Associates
SEB
Goldman Sachs (GS Sustain)
Royal London Asset Managers
Kepler Cheuvreux
KKR
Mercer Consultants ERAFP
Varma, Finland
Sustainable Value Investors
WHEB Asset Management
AWJ Capital Partners
Sustainable Insight Capital Management

SG Corp & Investment Bank
Aberdeen Asset Management
DVFA
EFFAS
Railpen Investments
Axa IM
Didas Research
Alliance Trust
Aon Hewitt
Schroders
Aegon
Pension Protection Fund

The Delphi Audience



Analysts and Researchers

01

Guidelines for Analysts and Researchers to scope the material issues by industry

Asset Managers

02

Perform the analysis and research necessary to inform the valuation approaches and investment models

Asset Owners and Consultants

03

Understand value implications of ESG factors and the priorities they should be setting for asset managers

Corporates

04

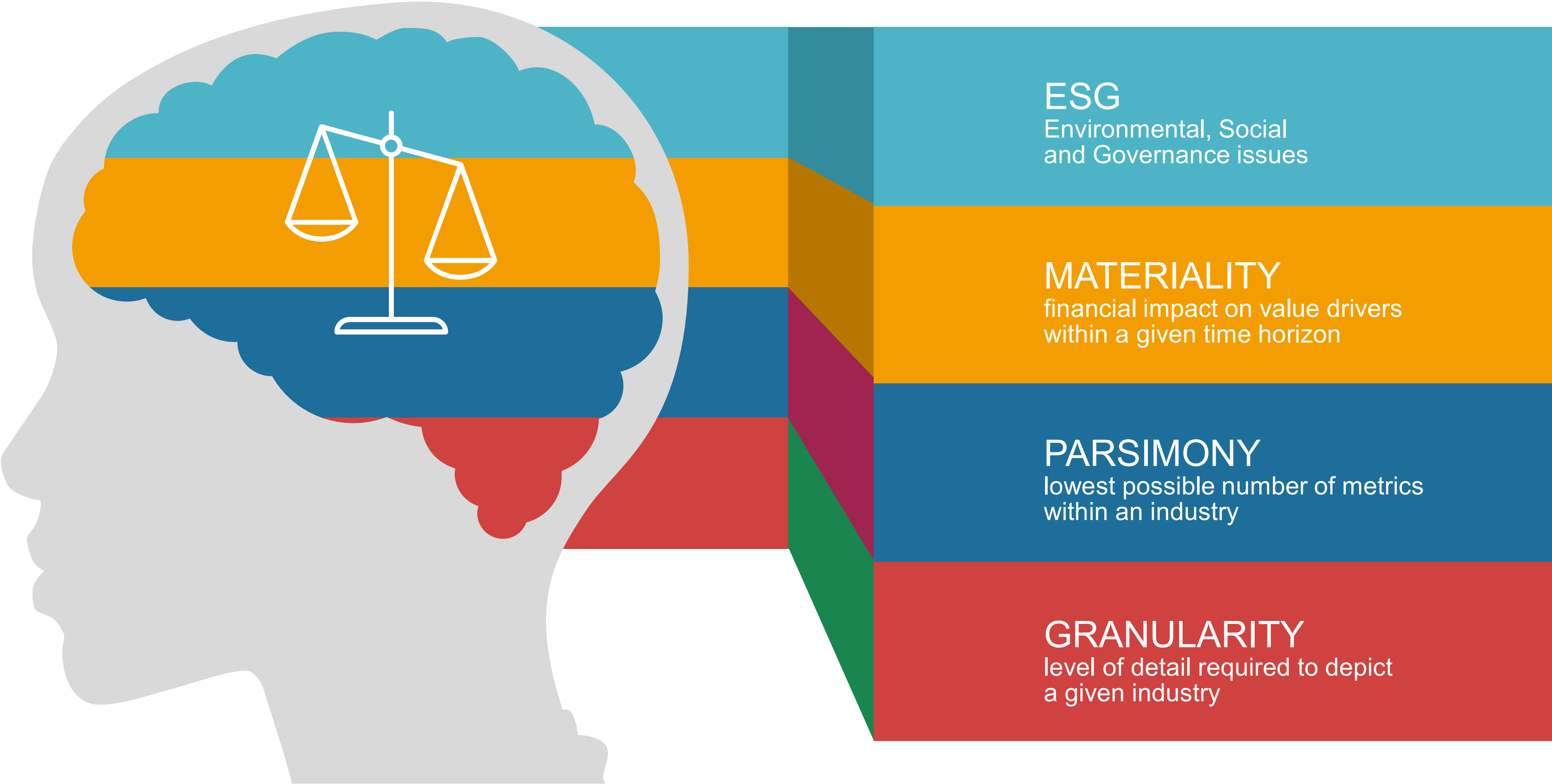
Identify the most material factors and metrics on which they should be reporting

Academics

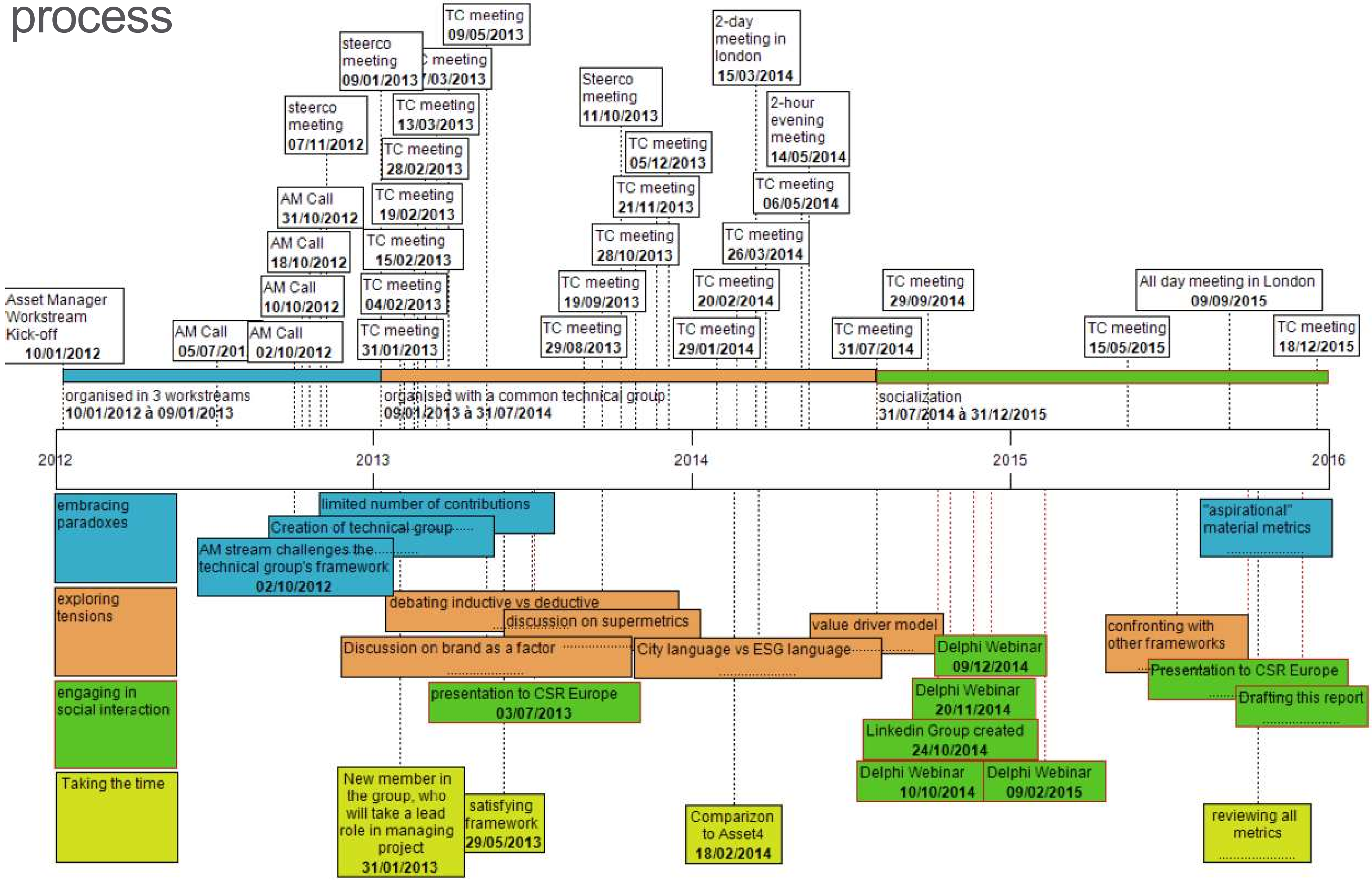
05

ESG, social studies of finance, standardization, paradoxes,…

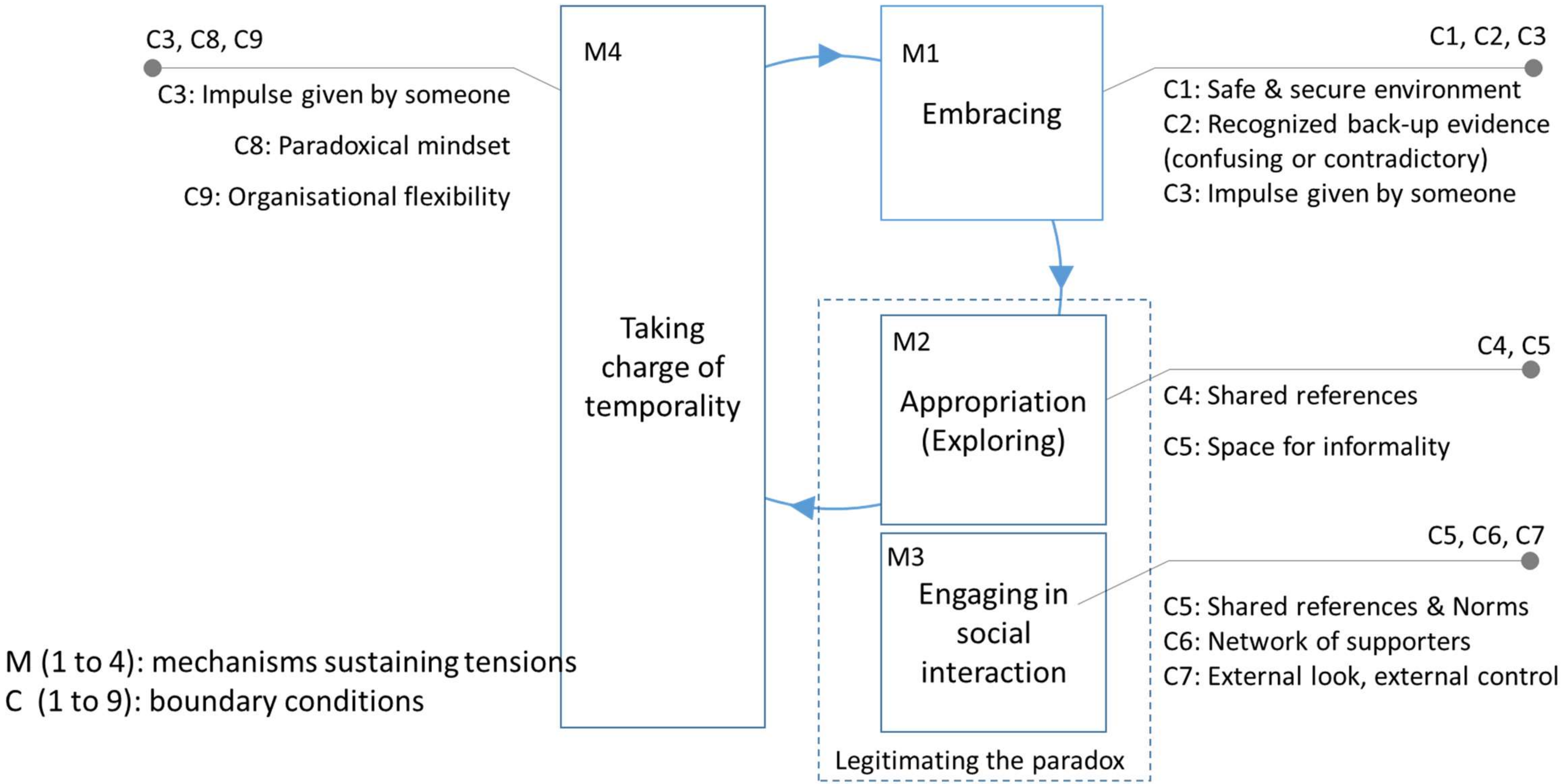
Delphi's guiding principals



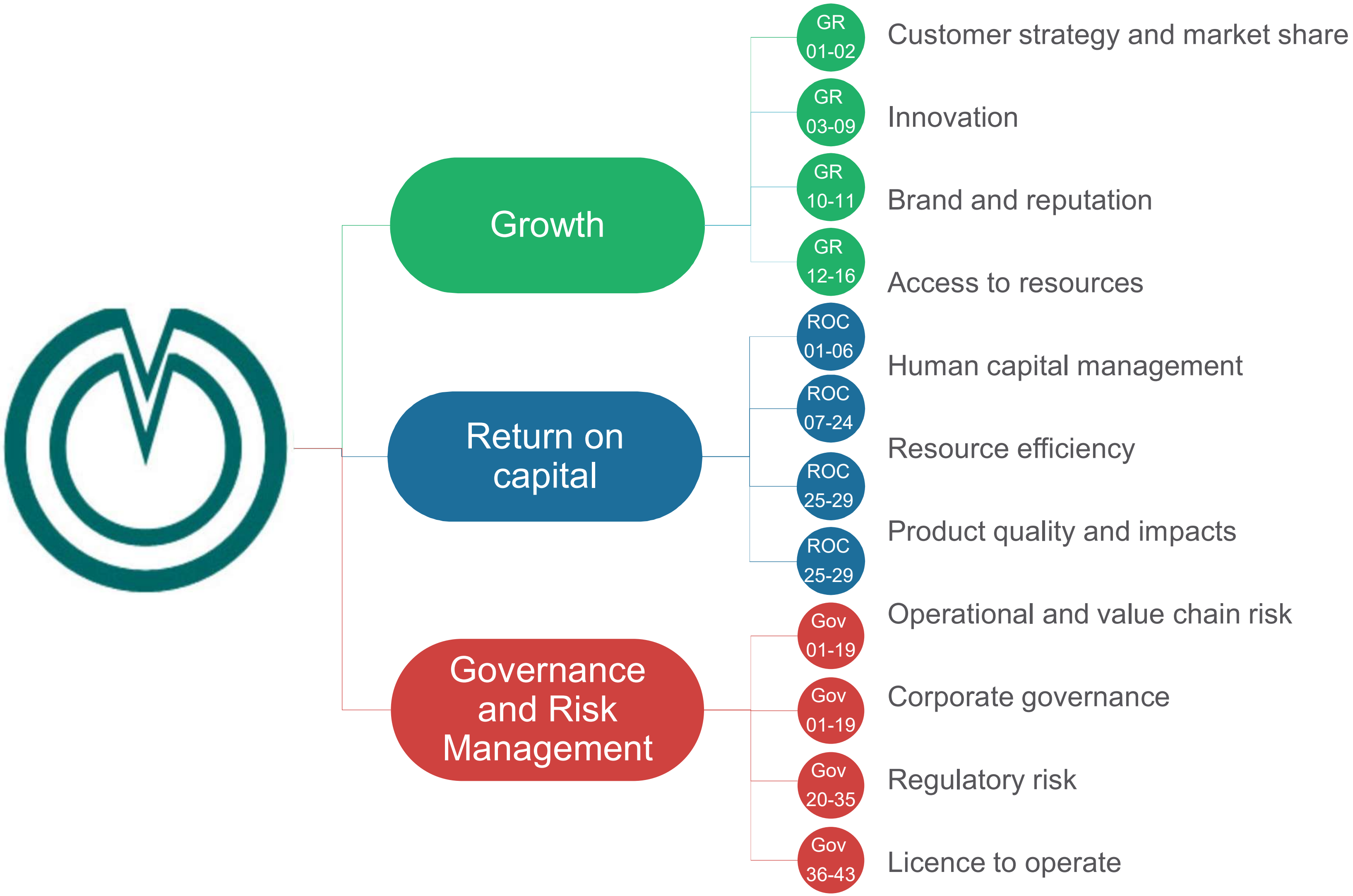
Delphi's process



Validating Delphi's process



Delphi framework:
Value levers – Value drivers – ESG factors - Metrics



Project Delphi: Framework - The Value Levers, Value Drivers, ESG Factors and Metrics for 10 Industry Sectors - 15th February 2016

Key to colour coding: Green - reported by reasonable number of comapnies. Blue - requires 3rd party sources. Red - small number of companies report this information

	Metric ref	Value Lever	Value driver	Key ESG	Metrics	Relevant sectors	Why this Metric	Relationship to ESG Factor	Influence on Value driver	Impact on Value lever
6	GRO 001	Growth	Customer Strategy & Market Share	Customer satisfaction & retention	Churn rate	Industrials, Consumer goods, Health Care, Consumer Services, Telecoms, Financials, Technology	Demonstrates ability to both retain existing and recruit replacement customers.	Net revenue growth as an indicator of satisfaction	Retention indicator of effectiveness of customer strategy, pricing and service/product quality	Higher retained sales, ability to recruit new sales driving revenue and potential for margin growth
7	GRO 002				Net Promoter Score	Industrials, Consumer goods, Health Care, Consumer Services, Telecoms, Financials, Technology	Customer advocacy measure - net % recommenders less detractors. More volatile indicator in B2C markets - in B2B more reflective of partnership relationship	More sophisticated satisfaction measure, sensitive to wider range of customer influences and tends to be more immediate allowing better tracking of strategy effectiveness.	Indicates ability to recruit and retain sales.	Better correlates to forward earnings and growth.
8	GRO 003		Innovation	Research & Development	Number of patents registered in last 12 months	Industrials, Health Care, Technology	Standard measure of R&D performance	Outcome of R&D. Implied capacity to respond to ESG product and market challenges	R&D is historic measure of capacity for innovation and implied capacity for ESG innovation	Capacity or pipeline to deliver new products/services to meet changing customer expectation and demands - to secure and, through new product income streams, potentially grow earnings
9	GRO 004				R&D expenditures in ESG products/services/processes (or defined list of ESG expenditures by industry) as % of revenue	Industrials, Health Care, Technology	Measure of R&D in ESG capacity and effectiveness	Explicit historic capacity to respond to ESG product and market challenges	Explicit measure of historic capacity for ESG innovation	Explicit capacity to deliver new ESG products/services to meet changing customer expectation and demands - to secure and, through new product income streams, potentially grow earnings
10	GRO 005				R&D expenditures as % of revenue	Industrials, Health Care, Technology	Measure of R&D capacity and effectiveness	Explicit historic capacity to to respond to product and market challenges	Implied measure of capacity for ESG innovation	Implied capacity to deliver new products/services to meet changing customer expectation and demands - to secure and, through new product income streams, potentially grow earnings

GRO 005		Innovation		R&D expenditures as % of revenue	**Industrials, Health Care, Technology**	Measure of R&D capacity and effectiveness	Explicit historic capacity to to respond to product and market challenges	Implied measure of capacity for ESG innovation	Implied capacity to deliver new products/services to meet changing customer expectation and demands - to secure and, through new product income streams, potentially grow earnings
GRO 006				% of total sales from products introduced in the last x years	**Industrials, Health Care, Consumer Services, Telecoms, Technology**	Measure of product/market innovation capacity	Implied ability to develop ESG products/services/markets in response to consumer demand/expectation or ability of business to create/stimulate that demand	Implied measure of capacity for ESG innovation	Implied capacity to secure and, through new ESG product/service/market income streams, potentially grow earnings
GRO 007			**New Markets, Clients & Geographies**	% of total sales from ESG products introduced in the last x years (or defined by industry)	**Industrials, Health Care, Consumer Services, Telecoms, Technology**	Measure of ESG product/market innovation capacity	Explicit ability to develop ESG products/services/markets in response to consumer demand/expectation or ability of business to create/stimulate that demand	Explicit measure of historic capacity for ESG innovation	Explicit capacity to secure and, through new ESG product/service/market income streams, potentially grow earnings
GRO 008				Revenue distribution across product pipeline (dependence on blockbuster products) --> e.g. measured by gini-coefficient	**Health Care**	Lack of diversification in a company's current product range and pipeline of future products represents high investment risk. This is true for all industries but particularly for the pharmaceutical sector. The Gini coefficient is a measure of the distribution of income,	New product development aimed at new customer segments, channels, geographies may diversify exposure. It must be offest by the risk of the investment in new products and client groups.	A well diversified pipeline shows that a company is investing in innovation.	Blockbuster products may result in strong short term growth but they carry higher risk than a well diversified product range and client base.
GRO 009		Innovation	Strategic innovation	Capacity to develop new business models	**Industrials, Health Care, Technology**	Composite reflecting innovation capacity drivers identified in literature: vision & strategy; harnessing competences; organisational intelligence; creativity and idea management; organisational structure and systems; culture and climate; technology management	Ability to shape response to external change and expectations on ESG, or to inspire and drive change in internal and/or external environment. Goes beyond product and market innovation to the way in which business operates.	ESG is both helping business respond to innovation challenges and creating challenges. How businesses cope with those challenges in terms of products/services, developing new markets or serving markets differently, and ultimately developing new business models, will determine future business performance.	Response to innovation challenges as both protection of earnings and potential source of new income streams, cost savings, and growth.

15	GRO 010	Growth	Brand & Reputation	**Brand perception**	Proprietary brand valuation	**Consumer Goods, Healthcare, Consumer Services, Financials, Technology**	A number of proprietary brand valuation models and indices which commonly calculate share of earnings attributable to differentiated brand and reputational assets, extrapolating to future earnings growth to derive equity value.	All models depend to varying degrees on perception of key stakeholders, typically customers, public, opinion formers. ESG is a key factor in stakeholder perception	Increasingly robust and widely acknowledged measures of brand - corporate market value not explained by accounting convention.	Brand Value ultimately determined by discounted forecasts of earnings growth	
16	GRO 011			**Reputation**	Public opinion	**Consumer Goods, Healthcare, Consumer Services, Financials, Technology**	Public opinion surveys common in most countries. Standard methodologies employed to identify perception of leading businesses/brands. Global standards driven by major polling agencies. Large corporates often commission own polling.	ESG is a key driver of public perception. Public perception represents customer perception. Also indicates reputational impact of key opinion formers - media, regulators, industry commentators etc.	Reputation is a significant determinant of brand value. ESG is a key reputational driver.	Brand value is determined by discounted forecast of future earnings and growth. Reputation is a key influence on that earnings growth.	
17	GRO 012		Access to resources	Access to raw materials/ natural resources	Carbon intensity of energy mix	**Industrials, Utilities, Technology, Materials, O&G**	Carbon Intensity may be one of the factors used in projecting possible future scenarios such as those used in the IPCC assessments, along with other factors such as projected future changes in population, economic activity and energy technologies. The Kaya identity is an equation relating factors that determine the level of human impact on climate, in the form of emissions of the greenhouse gas carbon dioxide.	This metric can measure the intensity of renewable resources used and therefore diversified energy supply.	In energy intensive industry, low carbon intensity would indicate access to non-fossil fuel sources of energy. It is an advantage to be an early adopter of low carbon intensity techniques so that the firm is better placed for higher costs of carbon use. Can also hedge against energy price volatility.	Renewable energy is by definition inexhaustible, and there is no marginal fuel cost, which should imply that it has a lower financial cost over the longer term. There needs to be a break-even analysis to assess at what point the unit costs of renewables fall below those of fossil fuels. Companies that have assured clean energy supplies at economic cost may have a competitive advantage in the future.	
					% business operations in water stressed areas		WRI (World Resources Institute) Water Risk Atlas Tool enables analysis of % of operations in water stressed regions. This of significance for the extractives industry and can be critical for hydraulic fracturing operations. For other water			High exposure to water stressed regions	

18	GRO 013		Access to resources	natural resources	% business operations in water stressed areas	Oil & Gas, Basic Materials, Industrials, Utilities, Technology	WRI (World Resources Institute) Water Risk Atlas Tool enables analysis of % of operations in water stressed regions. This of significance for the extractives industry and can be critical for hydraulic fracturing operations. For other water intensive industries the cost of water is likely to rise as it becomes scarcer and therefore lead to water efficiency measures being adopted or in extreme cases, cessation of activity in that region.	Access to water may become critical for certain processes in such regions.	Low percentage of operations in water stressed regions would suggest adequate access to water.	High exposure to water stressed regions may require increased CAPEX. Increased business risk - limits to production, disrupted supply chains, increased manufacturing costs and lower future cash-flows.	
19	GRO 014			Supply Chain	Total number of suppliers	Industrials, Consumer Goods, Telecoms, Technology	Base number of suppliers and diffusion.	Absolute size of direct supply chain. Implied spread of supply chain ESG risk and mediating policy	Demonstrates scale of supply chain and potential access/exposure risks	Potential determinant of growth - contuinued access to supplies is a limitation/spur	
20	GRO 015	Growth	Access to resources		% of total procurement spend concentrated on (top 20 %) critical suppliers	Industrials, Consumer Goods, Telecoms, Technology	Quantifies concentration of supply within total number of suppliers	Concentration of supply implies diversity/reputational risk - favours large suppliers over small enterprises, gender/ethnic diversity of supplier base and local community employment impacts (also how brittle the supply chain is, meaning the more concentrated the supply chain the greater the threat of disruption to sales if a major supplier goes down)	Concentration implies higher risks to continued access/security of supply. Reputational impacts of perceived over-concentration. Also ethical/competitive implications of monopsony relationship.	Over concentration is potential risk/brake on growth. Reputational issues may have impact on earnings/growth and brand equity. On the other hand, fewer/larger relationships implies partnership basis and possible unit cost savings from supplier familiarity/experience and buyer purchasing power.	
21	GRO 016			Employee retention & recruitment	% turnover of employees, managers, senior managers	Oil& Gas, Health Care, Financials, Technology	Access to labour and skills by category of employee.	Scale of turnover implies both fluidity of labour market and ease of replacement/substitution. ESG impacts directly through HR policy and employment conditions and indirectly through employee engagement/perception.	Labour is a vital resource and retention and avoiding need to recruit replacement skills/knowledge/experience is a priority for most businesses in every industry.	Labour, skills, knowledge and experience are scarce resources and a significant driver of, or brake on, growth and development.	

22	ROC 001	**Return on Capital**	**Human Capital Management**		Overall Engagement Score %	**Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Consumer Services, Telecoms, Financials, Technology**	Employee Engagement is a key driver of business performance. There are a number of well establsihed proprietary models widely used which reflect up to 200 identified drivers of engagement. There is convergence around composited key drivers - typically 12-50 - calibrated against the wider range of drivers. Almost all are a pyramid to this single employee advocacy metric.	A direct measure of engagement based on a wide range of identified drivers. ESG impacts directly though employment policy/practice and indirectly through perception/reputation.	The most widely used measure of Human Capital Management effectiveness. Engagement is both a leading indicator of change and a stock of perception capital that can be deployed to predict and respond to change in the internal/external employment environment. In many/most corporates Engagement drives policy/process including employment conditions, performance and talent management, change programmes and even organisational structure/design.	Employee Engagement drives earnings indirectly through increased customer engagement, satisfaction and advocacy. It drives earnings directly through engaged employees selling more or identifying cost savings through more efficient processes. Engaged employees have higher propensity to support and deliver successful implementation of change programmes, creating new products/services/markets/processes and ultimately new operating/business models.
23	ROC 002			**Employee Engagement**	% Employees recommend employer	**Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Consumer Services, Telecoms, Financials, Technology**	The ultimate advocacy question in most Engagement frameworks. The willingness to recommend employer to family and friends.	A key measure of engagement and heavily influenced by perception of business by employee and their influencers. ESG is a determinant of that perception/reputation directly as an employer and indirectly as a local business, provider of goods and services, supporter of local supply chains, community contributor, etc.	This metric is a key predictor of ESG performance and its relationship to effective Human Capital Management.	Employee Engagement drives earnings indirectly through increased customer engagement, satisfaction and advocacy. It drives earnings directly through engaged employees selling more or identifying cost savings through more efficient processes. Engaged employees have higher propensity to support and deliver successful implementation of change programmes, creating new products/services/markets/processes and ultimately new operating/business models.
					% Q: understand how I am rewarded		Engagement research consistently demonstrates that pay and reward are not the			Employee Engagement drives earnings indirectly through increased customer engagement, satisfaction and advocacy. It drives earnings directly through engaged employees selling more or

24	**ROC 003**				% Q: understand how I am rewarded	**Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Consumer Services, Telecoms, Financials, Technology**	Engagement research consistently demonstrates that pay and reward are not the most important or even a major determinant of engagement. However, employees comprehending: how they are rewarded; how that reward changes; reward relative to peers and immediate line managers/subordinates; are key drivers. This implies positive perception of employment policy/practice and performance/talent management.	Valued employment policy and practice and fairness in application are the most vital aspect of pay and reward. These ESG factors are reflected in this engagement metric.	This metric is a key predictor of ESG performance and its relationship to effective Human Capital Management	Employee Engagement drives earnings indirectly through increased customer engagement, satisfaction and advocacy. It drives earnings directly through engaged employees selling more or identifying cost savings through more efficient processes. Engaged employees have higher propensity to support and deliver successful implementation of change programmes, creating new products/services/markets/processes and ultimately new operating/business models.
25	**ROC 004**		**Human Capital Management**	**Talent Management**	% Employees subject to performance management process	**Oil & Gas, Health Care, Financials, Technology**	Effective performance management is a significant factor in employee engagement. This metric measures implementation quantitatively not qualitatively. However, consensus in effective performance management implies line management responsibiity for regular reviews of performance against clear expectations of performance and metrics which reflect the organisation's overall vision and strategy. That implies employee understanding of the organisational vision and strategy and probably its values. It also implies some form of capacity to address underperformance and present opportunities for personal and professional development through learning and training.	Performance management is a component of talent management which is a feature of good employer ESG practice. Talent management is generally considered to encompass mass performance management and more individually tailored programmes for specific groups of employees identified as potential key contributors to the organisation's future development. This may be in terms of leadership and management or key skill/knowledge sets.	Performance/talent management and their associated characteristics are essential tools in Human Capital Management and the maintenance/improvement of productivity and effectiveness of labour beyond its intrinsic value as a factor of production.	Labour is a critical factor of production. But in increasingly knowledge/skills-led economies, the development of labour as Human Capital is one of the main determinants of successful business performance. Productivity and effective performance are the primary drivers of product/service development, sales, earnings and growth. It also creates the conditions for innovation in process/products and business models that generate future income streams, process efficiencies and earnings growth.
26	**ROC 005**				Learning & Developement costs as % of revenue	**Oil & Gas, Health Care, Utilities, Financials, Technology**	It is a quantitative measure of the investment in learning, training, and people development relative to size of the organisation. Normalised against revenue not capita implies assumptions about the need for greater investment in companies where earnings are higher relative to employment - generally high skill/technology/knowledge industries.	Learning & Development is a key component of talent management. It supports performance management, addressing underperformance and enabling personal and professional development to increase the stock of skills/knowledge/competences. Opportunities for learning & development are generally high on list of employee expectations of employer and employee/stakeholder expectations of business as social and wider economic obligations.	Learning & Development is critical to Human Capital Management. Increasing the effectiveness and performance of people is core to transforming labour as a factor of production to a capital asset where value can be enhanced through increased productive capacity and greater knowledge/skills/competences.	Labour is a critical factor of production. But in increasingly knowledge/skills-led economies, the development of labour as Human Capital is one of the main determinants of successful business performance. Productivity and effective performance are the primary drivers of product/service development, sales, earnings and growth. It also creates the conditions for innovation in process/products and business models that generate future income streams, process efficiencies and earnings growth.

27	**ROC 006**	Return on Capital	**Resource Efficiency**	**Average age of infrastructure**	Average age of fixed assets	**Oil & Gas, Telecoms, Utilities, Industrials**	Older assets will give an indication of a company's need to invest in the near future. They may also be an indication of the company's productivity, its competitive stance as well as having implications for safety rates.	Fixed assets are defined as tangible assets which cannot easily be converted into cash and where future economic benefit is probable to flow into the entity. Infrastructure assets are normally immovable and are valuable only to the governmental unit. Having access to modern and efficient infrastructure is an advantage to a firm. Sometimes, companies may invest in the infrastructure they need for this reason. Investment in new fixed assets is likely to be accompanied by appropriate investment in infrastructure.	Modern plant and equipment can ensure that resource inputs are used in an efficient manner.	Modern fixed assets and infrastructure should increase productivity, resource efficiency, resulting in lower costs. This should be reflected in higher ROC.
28	**ROC 007**				$ Investment in infrastructure (incl energy efficiency) as % of CAPEX	**Oil & Gas, Telecoms, Utilities, Industrials**	A company's investment in infrastructure is indicative of its long term commitment to the country or region it is operating in. It is also investing in the higher productivity that improved infrastructure can bring. Investments in energy efficiency can lower carbon footprint but also reduce operating costs.	Investment in infrastructure reduces the average age of total infrastructure.	Infrastructure investment or renewal, especially in energy efficiency will improve resource efficiency.	Improved resource efficiency should improve ROC
29	**ROC 008**				Investment in infrastructure (% of sales) as outcome of regulatory (e.g. ICNIRP) requirements	**Oil & Gas, Telecoms, Utilities, Industrials**	ICNIRP issues guidelines to protect against exposure to non-ionising radiation, such as electromagnetic fields. Occupational exposure limits will be enforceable in EU as from 2016.	Investment in infrastructure that complies with ICNIRP regulations will reduce the average age of total infrastructure.	Modern plant and equipment can ensure that resource inputs are used in an efficent manner.	Improved resource efficiency should improve ROC
30	**ROC 009**				GHG Emissions	**Oil & Gas, Basic Materials, Industrials, Consumer Goods, Telecoms, Utilities, Technology**	GHG emissiions contribute to climate change. Costs may result through regulatory compliance. Companies that reduce GHG cost efficiently can reap benefits in terms of energy efficiency, process improvements etc. They may be able to benefit from sale of carbon allowances.	Companies to report all GHG gases in metric tons of CO2 equivalent - Global Warming Potential factors - IPCC	Because of high risk of climate change mitigation regulations, companies have an incentive to invest in energy efficiency, cleantech, process improvements. This should translate into lower costs and sustainable processes.	Early adopters of sustainable processes and energy efficiency should benefit from lower unit costs as the cost of GHG emissions increases. This should translate into higher ROC. High GHG emissions can lead to reputation tarnish and thus to lower ROC.
	ROC 010				NOX	**Materials, Industrials, Consumer Goods, Telecoms, Utilities,**	NO2 is an air pollutant but also forms tropospheric ozone and acid rain. Internal combustion engines have the highest impact. Average emissions per engine sold - gms/ Kw		Cleantech to reduce NOX - Low NOX burners, Combustion optimization, Catalytic combustion etc. can also	Greater Energy efficiency, compliance with regulatory requirements --> more

31	**ROC #10**	Return on Capital	**Resource Efficiency**	**Emissions**	NOX	**Materials, Industrials, Consumer Goods, Telecoms, Utilities, Technology**	NO2 is an air pollutant but also forms tropospheric ozone and acid rain. Internal combustion engines have the highest impact. Average emissions per engine sold - gms/ Kw hour.	Constituent of GHG emissions	Cleantech to reduce NOX - Low NOX burners, Combustion optimization, Catalytic combustion etc. can also lead to greater energy efficiency.	Greater Energy efficiency, compliance with regulatory requirements --> more sustainable enterprises --> Higher ROC	
32	**ROC #11**				SOX	**Oil & Gas, Basic Materials, Industrials, Consumer Goods, Telecoms, Utilities, Technology**	SOx refers to all sulphur oxides, the two major ones being sulphur dioxide (SO2) and sulphur trioxide (SO3). Sulfur dioxide is a major air pollutant and has significant impacts upon human health.[33] In addition, the concentration of sulphur dioxide in the atmosphere can influence the habitat suitability for plant communities, as well as animal life.[34] Sulphur dioxide emissions are a precursor to acid rain and atmospheric particulates. EN20	SO2 is produced by the burning of fossil fuels, particularly coal as well as in other industrial processes. Technologies such as fluidised bed combustion can reduce SO2. There are strict regulatory controls in force.	There is an incentive to use low sulphur or de-sulphured fuel. The net effect on fuel efficiency is an increase of +/- 1% for gas fired power plants and 2% for coal fired plants.	CAPEX investment mean that in the short-term ROC might fall. Given the regulatory requirements in force and likely to become more rigorous, such investment may be mandatory. Companies that are ahead of the curve on controlling SOX emissions should see improvement to their ROC over the longer term.	
33	**ROC #12**				VOC	**Oil & Gas, Basic Materials, Industrials, Consumer Goods, Telecoms, Utilities, Technology**	**Volatile organic compounds (VOCs)** are organic chemicals that have a high vapor pressure at ordinary room temperature. E.g. framaldehyde, solvents. Sources: paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions. They can have serious effect on human health (carcinogens) and on air quality (ozone formation).	Regulated by law. Emissions can be reduced by 1) process integrated measures 2) product integrated measures 3) strategic measures in production - support functions.	Reduction of diffuse emissions may be achieved by fume extraction, filtering, closed systems, condensation etc. This leads to improved personnel protection. When process, product and strategic measures in production-support functions are considered throughout, this can lead to more efficient use of resources as well as reduction in emissions.	The cost of compliance with VOC emission regulations must be compared to the cost of being in breach of the regulations. Avoidance or significant reduction to emissions can have positive reputational effect. From both points of view the effects on ROC will be positive.	
34	**ROC #13**			**Energy efficiency**	Total energy consumption (direct and indirect) as % of revenue	**Industrials, Utilities, Technology**	Improved energy efficiency in buildings, industrial processes and transportation could reduce the world's energy needs in 2050 by one third, and help control global emissions of greenhouse gases.(IEA). Financial cost saving, provided savings are grater than cost of implementation.	Focus on energy cost as percentage of revenue can highlight energy efficiency potential.	Focus on energy efficiency also facilitates focus on use of resources and efficency.	Lower energy costs and better resource efficiency improve financial results and increase ROC.	
35	**ROC #14**				Energy savings performance against targets	**Industrials, Utilities, Technology**	Energy efficiency performance to be measured against ISO standards and testing procedures. GRI EN6	Monitors the progress towards energy efficiency targets.	Progress towards better utilisation of energy resources.	Lower energy costs improve financial results and increase ROC.	
					Total waste generated		Includes manufacturing waste, packaging, hazardous materials, recyclable materials. Reclaimed and reused materials. Measured in	Packaging accounts for 15-25% of household waste. EU landfill			

34	**ROC #13**			**Energy efficiency**	Total energy consumption (direct and indirect) as % of revenue	**Industrials, Utilities, Technology**	Improved energy efficiency in buildings, industrial processes and transportation could reduce the world's energy needs in 2050 by one third, and help control global emissions of greenhouse gases.(IEA). Financial cost saving, provided savings are grater than cost of implementation.	Focus on energy cost as percentage of revenue can highlight energy efficiency potential.	Focus on energy efficiency also facilitates focus on use of resources and efficency.	Lower energy costs and better resource efficiency improve financial results and increase ROC.
35	**ROC #14**				Energy savings performance against targets	**Industrials, Utilities, Technology**	Energy efficiency performance to be measured against ISO standards and testing procedures. GRI EN6	Monitors the progress towards energy efficiency targets.	Progress towards better utilisation of energy resources.	Lower energy costs improve financial results and increase ROC.
36	**ROC #15**			**Waste & Packaging**	Total waste generated (Volume/sales)	**Industrials, Utilities, Consumer Goods, Health Care,**	Includes manufacturing waste, packaging, hazardous materials, recyclable materials. Reclaimed and reused materials. Measured in metric tons. Implications for landfill capacity and generation of methane (GHG). Benefits of incineration should be weighed against increase CO2 generation. GRI EN22	Packaging accounts for 15-25% of household waste. EU landfill requirements are to reduce biodegradable waste by 50% by 2013 from 1995 baseline to avoid financial penalties.	Waste reduction and reduction of packaging materials by manufacturers will lead to better resource utilisation.	Reduction in waste and materials used should cut costs and therefore increase ROC. This should be offset against the short-term CAPEX required to reduce waste.
37	**ROC #16**				Hazardous waste generated (Volume/sales)	**Industrials, Utilities, Consumer Goods, Health Care,**	% of weight of hazardous waste of total waste. Hazardous includes waste which could be corrosive, inflammable, toxic, reactive. It should include waste which is recyclable or reusable after treatment. Weight is often not the best metric for this waste and attention should be paid to the specific environmental impact of each material. EN24	Waste from industrial processes and packaging materials	Regulations are an incentive to reduce hazardous waste by improving processes, treatment, recycling, avoidance of using materials that generate hazardous waste where possible.	Risks associated with hazardous materials must be assessed and addressed. Development of sustainable process, treatment etc. enable compliance with regulatory requirements. Avoidance of sanctions, higher ROC. Some investors assign a premium to firms that go above and beyond the required limits. Others may assign negative assessment to this.
38	**ROC #17**				Total waste to landfill (%)	**Industrials, Utilities, Consumer Goods, Health Care,**	Landfill sites, whether industrial or municipal emit methane and other GHG. Industrial sites may have to provide gas collection & destruction facilities. In many countries, landfills must meet design, siting, operating closure and post closure requirements. They must also have composite liner systems to prevent leaching into water table.	Municipalities are under pressure to reduce biodegradable waste sent to landfill --> requirements for public to sort and recycle to avoid financial penalties. Consumers now made aware of excess packaging imposing a cost on them.	Pressure on manufacturers to reduce waste & excessive packaging.	Development of sustainable process, treatment etc. enable compliance with regulatory requirements. Avoidance of sanctions, higher ROC.
39	**ROC #18**	Return			% of waste recycled	**Industrials, Utilities**	Landfill taxes are levied on companies in some countries. Through increasing the cost of landfill, advanced waste treatment technologies with higher associated costs become more financially attractive.	Pressure to use cleaner production processes and other means of reducing and recycling waste & excess packaging.	Pressure to use cleaner production processes and other means of reducing and recycling waste. This can lead to better resource efficiency.	Better resource efficiency increase ROC. Avoidance of financial penalties.

41	ROC #20	Resource Efficiency	Water consumption	Total freshwater consumption (volume or per unit of production)	Oil & Gas, Basic Materials, Industrials, Utilities, Technology, Consumer Goods	Fresh water consumption per unit of output allows comparisons between companies in the same sector . Consumption per unit over successive time periods allows monitoring of progress. EN8,	Freshwater ecosystems in sharp decline. Uneven distribution - 10 countries own 60% of freshwater resources. Water quality varies greatly. Inadequate wastewater treatment.	Companies with high freshwater requirements at risk in certain countries. Companies that invest in waste water treatment and recycling and avoid lost water in these regions are more sustainable.	Companies with high freshwater consumption per unit of output will have lower ROC in waterstressed areas.
42	ROC #21			Net water consumption in water stressed areas (volume or per unit of production in those areas)	Oil & Gas, Basic Materials, Industrials, Utilities, Technology	High total water consumption in waterstressed areas is a risk for companies unless they invest in wastewater treatment and recycling. EN9	Watershortages are often in regions with fastest growing populations. Climate change likely to make shortage worse. Agricultural extraction is unsustainable in some water stressed areas. Risk of social unrest.	Premium on wastewater treatment & recycling. Risk for laggards.	Companies with high total water consumption per unit of output will have lower ROC in waterstressed areas.
43	ROC #22			Total water consumption (volume or per unit of production)	Oil & Gas, Basic Materials, Industrials, Utilities, Technology	Enables identification of companies at risk and comparison with peers. Should be checked against Water Rours Index.	"Peak water" may have been arrived at. Demand set to exceed supply by 40% by 2030. High water consumption without effective water management measures constitutes a risk.	Total water consumption per output unit can be compared with peers and industry standards. The trend over several years will indicate measures taken to reduce this amount.	Companies with high total water consumption per unit of output will have lower ROC in waterstressed areas.
44	ROC #23			Waste effluent water-volume	Oil & Gas, Basic Materials, Industrials, Utilities, Technology	Identify large generators of waste effluent water. This should be compared with the WRI to assess probability of scarcity.	High volumes of waste effluent which are not treated or recycled should be flagged as a risk.	Total waste water effluent per output unit can be compared with peers and industry standards. The trend over several years will indicate measures taken to reduce this amount.	High volume of waste water effluent that is not treated and reused indicates an unsustainable use of scarce resource. Risk of loss of licence to operate and low ROC.
45	ROC #24			Water recycled % or volume	Oil & Gas, Basic Materials, Industrials, Utilities, Technology	Water usage from recycled sources reduces the demand for fresh water and the energy required to transport and dispose of it. Tailoring water quality to a specific water use also reduces the energy required for water retreatment. It is also an indicator of a company's efficiency.	Total water consumption may be reduced by judicious water recycling.	Can improve the efficiency of total use of water.	Increased efficiency in water usage should reduce costs and therefore the ROC. Short-term CAPEX on recycling should be offset against longer term cost reductions.
46	ROC #25		Product Health & Safety	Number of fatalities associated with products	Consumer Goods, Healthcare, Industrials	Many products in the consumer goods, healthcare, technology, Industrials sectors can malfunction and lead to related deaths. This can entail severe damage to reputation and brand, possibly to licence to operate and in addition, there may be grounds for a wrongful death lawsuit. Controlling these risks can be critical to the success or even the survival of the firm concerned.	Product liability is covered by legislation in most countries and therefore breaches of the law can lead to very expensive legal proceedings and fines. There can be costs in terms of reputaion, brand and customer loyalty also.	Companies have a duty of care to ensure that the quality of their prodcts meets health and safety regulations and to anticipate any negative impact that may occur. Failure to do so, can lead to heavy legal costs and damages and subsequent loss of reputation and brand image. These can impact revenue potential.	Failure to control the risks associated with their products can have severe impact on the company's results and the ROC.

47	ROC #26	Return on Capital	Product Quality & Impacts		Volume of product recalls as % of sales	Consumer Goods, Consumer Services	A high number or share of product recalls indicates a lack of product quality with negative consequences for brand perception, lower purchase intentions and consumer loyalty. Being proactive in the case of such recalls can help reduce damage but reoccurring recalls, whether they be proactive or not will certainly incur these negative consequences.	A large number of recalls are probably a sign that insufficient attention is being paid to Product Health & Safety.	Inattention to product quality and particularly in terms of health and safety indicate inadequate quality control processes. This is indicative of poor management a lack of customer focus. The financial impact of this could be very serious.	Product recalls are xpensive both in terms of the logistics of carrying them out and in terms of future sales. This can have significant impact on ROC.
48	ROC #27			Product lifecycle	% products by revenue with lifecycle assessment	Industrials, Consumer Goods, Technology	Life Cycle Assessments (LCAs) of products allow companies to make better informed decisons about operational aspects (minimizing footprint and costs) as well as marketing and sales prospects (product positioning, brand building).	The % of products complying with ISO and GHG Protocol Life Cycle Assessment Accounting and Reporting standards is an indication of the level of control of operational, marketing and sales considerations.	Product quality & impacts to include notion of incorporation of environmentally focused principles into product design. This allows better focus on specific market segments (e.g. energy efficient products, LOHAS etc.)	Life Cycle planning can reduce materials,energy and labour inputs. These cost savings must be compared with the CAPEX investment required. There may be favourable brand reputation considerations to be taken into account.
49	ROC #28	Return on Capital	Product Quality & Impacts		% of product accepted for take-back, reuse, or disposal	Industrials, Consumer Goods, Technology	In light of resource scarcity it can be in the best interests of companies to establish smart recycling models. In addition, Extended Producer Responsibility (EPR) - incorporate negative externalities from product use and end-of-life in product prices. Producers are made responsible for environmental effects over entire product life cycle. Cost of compliance cannot be shifted to a third party and must thus be incorporated in product prices. Failure to comply with regulations may incur heay fines.	Onus of waste-management costs shifted to producers - most capable of reducing EOL costs by changing designs for recyclability, longevity, reduced toxicity, and limited volume of waste generated.	Product quality & impacts to include notion of incorporation of environmentally focused principles into product design. This allows better focus on specific market segments (e.g. energy efficient products, LOHAS etc.). There will be compliance related costs but also savings in the light of resource scarcity as well as brand building and product positioning (with associated revenue implications).	The dynamic trend in relation to peers can give an insight into a company's forward thinking. For products with longer life-cycles there are savings in materials, energy and labour inputs. The net impact on a company's ROC will depend on the balance between increased costs relating to longer life-cycles (and perhaps lower revenues) and the savings on inputs.
					% of recycled materials used in production		In light of resource scarcity it can be in the best interests of companies to establish smart recycling models. There should be cost savings relating to the use of such raw materials in terms of materials, energy and labour.	Onus of waste-management costs shifted to producers - most capable of reducing EOL costs by changing designs for recyclability, longevity, reduced toxicity, and limited volume of waste generated.	Product quality & impacts to include notion of incorporation of environmentally focused principles into product design. This allows better focus on specific market segments (e.g. energy efficient products, LOHAS etc.). There will be compliance	The dynamic trend in relation to peers can give an insight into a company's forward thinking. For products with longer life-cycles there are savings in materials, energy and labour inputs. The net impact on a company's ROC will depend on the balance between increased costs relating to longer life-cycles (and perhaps lower revenues)

51	GOV 001	Governance & Risk Management			Total spending on H&S $	Oil & Gas, Basic Materials, Industrials	Integrating health and safety into company strategy and policy forms part of the business strategy and continuous improvement that drives a company towards excellence. The level of financial commitment companies make to improving health and safety is a tangible gauge of their willingness and capacity to do so. There is a strong correlation between higher spending on H&S and lower risk and higher return.	Without a commitment of resources, outstanding health and safety performance cannot be achieved	Expenditure on OHS reduces risk of accidents and sickness with their associated costs to the company.	Higher performance and better risk management. The trade-off between higher expenditure and the benefits must be assessed.
52	GOV 002		Operational & Value Chain Risk	Occupational Health & Safety	Lost time injury rate	Oil & Gas, Basic Materials, Industrials	A lost-time injury is defined by most companies as an occurrence that resulted in a fatality, permanent disability or time lost from work of one day/shift or more. Lost-time injury frequency rates are the number of lost-time injuries within a given accounting period relative to the total number of hours worked in the same accounting period. For example, OSHA (Occupational Safety & Health Admin in the US) calculates rates as: (recordable incidents / total hours worked)*200,000.	Although no guarantee of future performance, a low injury or ill health rate, even over a period of years, tends to indicate stronger future performance. By measuring incidence of a larger number of events (compared to fatalities or more extreme injuries), it provides a more stable measure of performance.	High injury rates are typically indicative of poorly run operations that will struggle to maintain operating continuity	A consistently low injury rate should be an indication that Governance and risk are being taken seriously. Comparative levels vary according to sector of activity.
53	GOV 003				Fatality rate (FTE & Contractors)	Oil & Gas, Basic Materials, Industrials	Fatality rates provide an unambiguous measure of health and safety performance.	Aside from the direct financial penalties associated with fatalities, large numbers of deaths among employees are likely to be indicative of unstable operating performance and brings significant reputational damage, with impacts on companies' license to operate	A high fatality rate must represent higher operational risk and can lead to very serious reputational damage and heavy finacial penalties.	A consistently low fatality rate may be an indication that Governance and risk are being taken seriously. This will vary according to sector of activity.
54	GOV 003	Governance & Risk Management		Occupational Health & Safety	% of facilities certificated against OHSAS 18001	Oil & Gas, Basic Materials, Industrials	OHSAS 18001 is a framework for an occupational H&S management system while improving performance. A new ISO standard, ISO 45001 is about to be introduced (scheduled for Q4 2015)	Certification process tends to change how employees view their workplace and may increase their commitment to the standards. It also provides an indication of management commitment to improvement	OHSAS 18001 requires: formal risk assessment and hazard identification, legal compliance and assurance, formal organisational arrangements, training & competency, internal audit, management review, external verification. It provides a measure of the company's commitment to implementing these measures	Certification and the audit processes that ensue focus attention on potential risks.
55	GOV 004				Number or % asset base/production /employees in facilities ISO certified	Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Telecoms, Technology	ISO 9000 is a generic name given to the family of standards around which a Quality Management System can be implemented. The eight QM principles are: Customer focus, Leadership, The involvement of people, a Process approach, a System approach to management, Continual Improvement, A Factual approach to decision making and a Mutually beneficial supplier relationship.	Provides assurance that processes and management meet internationally recognised standards, with the associated risk control measures. It provides both a measure of management's commitment to improvement and an external verification of the efforts management is making	Provides assurance that processes and management meet internationally recognised standards, with the associated risk control measures.	Demonstrates management's commitment to good governance and risk management

56	GOV 005	Governance & Risk Management	Operational & Value Chain Risk	Risk Processes	% of business units covered by process improvement target setting such as Lean Six Sigma (ISO 13053:2011 - DMAIC) or other methods such as TQM, EWRM etc.	Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Telecoms, Financials, Technology	Six Sigma and other standards are primarily designed to achieve consistent process results by achieving quantifiable financial returns through establishing and verifying appropriate sigma target levels. There are a range of stakeholder-focused process improvement tools which will also embed ESG issues into management processes. Lean Six Sigma addresses process flow and waste issues and uses Voice of Customer methods to set performance benchmarks. Lean processes can eliminate productivity/effectiveness blocks to human capital performance. Enterprise Wide Risk Management diffuses ESG/Reputation issues across risk categories.	Use of process tools to embed ESG risk management across strategic, market, operational, financial, regulatory and reputational risks.	Risk management, elimination and/or remediation.	Lower costs, reduced risk of problems/crises impacting on business performance. Lower reputational risk. Should be reflected in lower cost of capital and threat of regulatory costs. Lower costs and lower cost of capital - higher ROC.	
57	GOV 006				% of revenues/operations (assets under management) analysed for ESG risks	Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Telecoms, Financials, Technology	Many companies outside finance sector now deploy Enterprise Wide Risk Management. This identifies a register of risks, materiality and salience. ESG is rarely an explicit feature but relevant individual ESG risks may be. Similar processes are being adapted by Sustainability teams within companies to explicitly identify ESG risks.	Adoption of EWRM and ESG risk analysis is a growing trend.	Identification of risk and appropriate management/remediation is a feature of operational risk management.	Identifying risks is to anticipate them and to address them. This should lead to timely mitigation of the risks and probably lower costs, reduced risk of problems/crises impacting on business performance. Lower reputational risk. Should be reflected in lower cost of capital and threat of regulatory costs. Lower costs and lower cost of capital - higher ROC.	
58	GOV 007				% of total suppliers assessed for ESG risks	Industrials, Consumer Goods, Telecoms, Technology	Number of suppliers identified in GRO 014 as an indicator of access to resources. This looks at supply chain from risk process perspective and identifies extent to which supply chain examined for ESG risks.	Identification of risk and materiality as part of an overall Supply Chain management or ESG specific process.	Identification of risk and appropriate management/remediation is a feature of operational risk management. More sophisticated approaches may extend purview to wider supply chain or 3rd party supply chain risks, especially in sensitive industries or those where suppliers/domicile may have specific associated ESG risks e.g. child labour, conflict minerals etc.	Lower costs, reduced risk of problems/crises impacting on business performance. Lower reputational risk. Should be reflected in lower cost of capital and threat of regulatory costs. Lower costs and lower cost of capital - higher ROC.	

59	GOV 008		Operational & Value	Risk Processes	% of critical suppliers assessed as high risk for ESG	Industrials, Consumer Goods, Telecoms, Technology	Critical suppliers defines those suppliers on which business is critically reliant. While a business may have thousands of individual suppliers, it may be a reliant on a much smaller number for a high percentage of total supplies or for specific supplies critical to production. This metric identifies the extent to which ESG is part of that critical supply chain risk assessment.	Identification of risk and materiality as part of an overall Supply Chain management or ESG specific process.	Identification of risk and appropriate management/remediation is a feature of operational risk management. Risk is accentuated where supply chain is concentrated, particularly where this may involve specific product or market risks. More sophisticated approaches may extend purview to wider supply chain or 3rd party supply chain risks.	By identifying high risk suppliers remedial action can be taken, thereby reducing risk. Reduced risk of problems/crises impacting on business performance. Lower reputational risk. Should be reflected in lower cost of capital and threat of regulatory costs. Lower costs and lower cost of capital - higher ROC.
60	GOV 009				% of high ESG risk critical suppliers with action plan	Industrials, Consumer Goods, Telecoms, Technology	Once a supply chain risk profile is identified, what processes are in place to eliminate, remediate or manage the most critical supplier risks identified? Generally, where the supplier relationship is significant, this will involve some form of partnership approach.	Identification of risk and materiality as part of an overall Supply Chain management or ESG specific process.	Identification of risk and appropriate management/remediation is a feature of operational risk management. At high level of salience/materiality, it will generally involve a partnership approach between purchaser and vendor. More sophisticated approaches may extend purview to wider supply chain or 3rd party supply chain risks.	Lower costs, reduced risk of problems/crises impacting on business performance. Lower reputational risk. Should be reflected in lower cost of capital and threat of regulatory costs. Lower costs and lower cost of capital - higher ROC.
61	GOV 010			Geographical Risk	Country Risk: % exposure in politically/socially unstable countries	Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Telecoms, Utilities, Financials, Technology	Integrating the social and political risks of countries where a company operates is critical to effective management of that company's real risks, and to improved resource allocation.	The risk of exposure to political and social instability is one aspect of geographical risk.	The extent of geographical risk exposure is a component of Operational & Value Chain risk.	Careful control of country risk and appropriate remedial action, where need arises, is a sign of good Governance and Risk Management.
62	GOV 011				% sales/ production/ assets in countries/regions with Transparency International corruption index < 61	Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Telecoms, Utilities, Financials, Technology	The CPI defines corruption as the misuse of public power for private benefit. Because of the difficulty measuring absolute levels of corruption, CPI measures perception of corruption. Because of the distortion caused by corrupt practices, a low CPI rating may increase investor risk.	Countries with low CPI rating represent geographical risk.	Corruption adds to value chain risk.	A high percentage of sales in countries with low CPI rating requires good governance and risk management.
63	GOV 012	Governance & Risk Management		Geographical Risk	% of sales in countries with regulation on privacy and data security	Telecoms, Financials, Technology	Customers, shareholders, employees and other stakeholders must be assured that all data and information, entrusted to the companies, are processed purely for their intended purpose and protected from misuse.	Regulations vary considerably from one country to another and therefore greater exposure to countries where this protection is weak increases the risk of insecure data and privacy.	Leaks from countries where privacy and data protection are weakly regulated could put the whole value chain at risk.	Data leaks would be an indicator of poor Governance and Risk Management.

64	**GOV #13**		**Operational & Value Chain Risk**	**Critical incidents**	Number of days lost production (%)	**Oil & Gas, Utilities, Basic Materials**	Production days lost due to injury or failure of equipment reflect on the company's duty of care. A high level of LPD may indicate poor operational management.	Critical incidents may be due to injury or equipment failure. Apart from "acts of God" a high level of critical incidents and resulting LPD may indicate inattention to duty of care.	Lack of attention to duty of care represents potential risk.	High levels of LPD due to critical incidents may indicate poor risk management.
65	**GOV #14**				Volume spillages (actual and %)	**Oil & Gas, Utilities, Basic Materials**	Applies to the Oil & Gas sector but could also be relevant to the chemical industry. Where responsibility is clearly established, the volume of spillages is available and can be attributed to specific companies. Spillages can have severe financial and reputational impact on a company'.	Relates to critical incidents	Recurrent spillages would indicate poor operational risk management	Repeated spillages would indicate slack governance and risk management.
66	**GOV #15**				Total fines/remediation costs for spillages $	**Oil & Gas, Utilities, Basic Materials**	A consistently high level of fines and remediation costs indicates exposure to financial risks in terms of fines, damage to reputation and ability to maintain licence to operate.	Relates to critical incidents	Recurrent spillages would indicate poor operational risk management	Repeated spillages would indicate slack governance and risk management.
67	**GOV #16**			**Environmental remediation**	Provision/Total expenditure (% of total revenue) on remediation, rehabilitation and decommissioning including hazardous waste	**Oil & Gas, Basic Materials, Industrials, Utilities,**	Consistently high percentage of revenue spent on remediation, rehabilitation and decommissioning is an indicator of high financial risk and also an indirect measure of evaluating the organisation's monitoring skills.	Measures costs incurred to remediate contamination by company's production processes.	high remediation, rehabilitation and decommissioning costs potential risks in the operation's value chain.	High risks may reveal poor governance.
68	**GOV #17**				% of business units covered by environmental & ecological impact assessment to an accepted standard	**Oil & Gas, Basic Materials, Industrials, Utilities,**	Businesses should find it helpful to use environmental KPIs to capture the link between environmental and financial performance. A high percentage of business units covered by EIA should be an indication that risks are being controlled.	Awareness of environmental and ecological impact should highlight potential need for remediation, rehabilitation, decommissioning and help avoid those costs, if possible, in the future.	Focus on potential risks in the Operational Value Chain.	Efficient EIA is an indicator of good risk control.
69	**GOV #18**				% of operations in ecologically sensitive countries/regions (UNESCO)	**Oil & Gas, Basic Materials, Industrials, Utilities,**	Biosphere reserves seek to protect against loss of biological and cultural diversity. There are 651 biosphere reserves in 120 countries. Location in such zones entail many constraints, and therefore high risk to reputation and licence to operate. For some investors this could be already be an exclusion criteria or reason to start engagement.	Firms located in such zones have a powerful incentive to avoid the necessity of environmental remediation.	High risks of breaching ecological regulations entails operational and value chain risk.	Risk Management needs to be very stringent in such areas.
70	**GOV #19**				Annual land rehabilitated (area, %, cost?)	**Oil & Gas, Basic Materials, Industrials, Utilities,**	Land rehabilitation is the process of returning land, as closely as possible, to its former state, after degradation by industrial, mining or farming processes.	Land rehabilitation contributes to Environmental Remediation	Successful rehabilitation reduces damage to reputational risk and licence to operate.	Good land rehabilitation can help retain the licence to operate and bolster reputation. It contributes to good governance and risk management.

71	GOV 020	Governance & Risk Management	Corporate Governance	Remuneration	Ratio of change in top management remuneration: total shareholder returns	Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Consumer Services, Telecoms, Utilities, Financials, Technology	Ratio of Delta of total senior management remuneration - often CEO or CEO and executive directors - to Delta in Total Shareholder Returns (TSR). Remuneration including awarded stock options and pension commutation. TSR is annualised total capital gain and dividend earnings per share. Intended to compare performance of business with reward to top management - based on assumption, widely regarded, that latter should reflect former.	Remuneration of top management is a key corporate governance issue. Appropriate reward - aligning remuneration with performance - is an indicator that effective governance processes are in place to hold management accountable to and for shareholders. Any misalignment will require explanation - the impact of other performance criteria or underlying performance not (yet) reflected in TSR.	Robust corporate governance processes and controls indicated by appropriate oversight and accountability of top management by Board. Linking performance and remuneration also implies reward for value maximising behaviour and competences - often over long-term as performance element of Long-Term Incentive Plans.	Controls of reward to top management is viewed as key corporate governance function. Aligning interests of shareholders, long term value creation and appropriate management processes and competences driving business performance. It is critical to effective risk management, an indicator of appropriate motivation, behaviours and strategies for long term value creation and protection.
72	GOV 021				Incentives as ave % of income	Financials, Technology, Consumer Goods	Incentivisation of management throughout the business is widely accepted as appropriate to instil motivation and reward outperformance. However, concerns that too great a reliance on incentivisation - indicated by a high ratio of incentives to base salary - can lead to damaging short term behaviours. Skewed decision making to achievement of incentivisation indicators - however appropriate - may not always align with interests or wider performance of the business and long-term value creation.	Remuneration includes base salary, short and long-term incentives, and pension provision. Appropriate reward and alignment of incentives to the long term health and performance of the business are key features of effective governance. This starts with top management but cascades through the business where inappropriate incentivisation can encourage skewed decision making, inappropriate behaviours and risk taking.	The ratio of incentives to base salary is not in itself a indication or check on inappropriate remuneration policy and practice. Comparisons with other business in the same or similar industries will flag up anomalies and highlight possible shortcoming in the effectiveness of corporate governance and management across the organisation.	Effective corporate governance should align interests of shareholders and management in pursuit of long-term value creation. Distortions in the motivation and objectives of top management and employees across the business can damaging these interests. Inappropriate decision making and risk taking are critical risk issues.
73	GOV 022				% of ave bonus subject to clawback criteria	Financials	Incentivisation programmes are generally and necessarily short-term in their nature. However, the increasing use of stock options and long-term incentive programmes have generated greater potential reward, intended to align to long-term performance of the business, but have clouded the connection between short term performance and ultimate long-term reward. Clawback, the ability of the business to sanction performance issues that only become apparent in the long-term, are the perceived solution. They are an additional brake on inappropriate behaviours and decision making where short term decisions have long term outcomes	Long-term Incentive Programmes are an increasing factor in remuneration and not just for top management. The potential reward outcomes can be far greater than short-term incentives. However, these outcomes may not necessarily be impacted on by individual performance and inappropriate behaviours and decision making. Clawback is intended to address this disconnect - where individual action damages the business but not necessarily the reward long term - and provide ability to rescind reward beyond the period of the incentive programme.	Clawback is an additional tool for those overseeing governance and management of the business. Clawback sanction is arising where the rewards of incentive programmes are significantly greater long-term than more immediate short term incentives. These rewards may not be crystallised as performance issues manifest until after the beneficiary has left the business. This issue has been most obviously apparent in the finance industry in recent years.	Effective corporate governance should align interests of shareholders and management in pursuit of long-term value creation. Clawback is a further sanction to impress appropriate incentivisation of top management and others and recourse where the long-term outcomes of such incentivisation are different to those at the point reward is effected. This extends the reach of effective governance and impact of long-term risk mangement on short-term decision making.

74	**GOV #23**			**Board composition**	Ratio of executive to non-executive board members		Independent Non-Executive board members can provide advice to boards on strategic decisions, thereby improving financial performance. Also, by monitoring the activity of managers, the interests of shareholders and other stakeholders can be protected. Research suggests that the inclusion of non-executives on boards improves the firm's compliance with disclosure requirements.	Non-executives can play a vital role in influencing strategic decisions and protecting stakeholder interests. The right balance has to be found between the industry specific experience of the execs and the broader perspective of the non-execs.	A judicious balance between executive and non-executive board members would normally be a sign of good governance.	Good balance between executive and non-executive board members should improve governance and reduce risk.
75	**GOV #24**	**Governance & Risk Management**			Separated role of CEO and Chairman/President	**Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Consumer Services, Telecoms, Utilities, Financials, Technology**	A common corporate governance requirement reflected in statute or governance standards in many markets. Recognises the concentration of day-to-day leadership is vested in a few hands and, whilst coherence of the relationship is essential to effective functioning of the business, there will be different functions and accountabilities which could and should give rise to separate interests.	CEOs are executive and Chairman/President are non-executive although this distiinction can be blurred. The latter chairs the Board and is responsible for oversight of executive. That includes ensuring adequate and effective accountability of executive through appropriate disclosure and interrogation, requiring necessary board competence, capability and composition.	This is a standard and consistent feature of corporate governance requirements, codes and recommended best practice in public companies across most major markets.	Separation of powers implicit in the delineation of these roles is widely considered essential to effective governance and risk management. It moderates risks of abuse of such powers and enables appropriate accountabilities in the interests of shareholders and other stakeholders.
76	**GOV #25**		**Corporate Governance**	**Board composition**	Women employees, managers, senior managers, Board (%)	**Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Consumer Services, Telecoms, Utilities, Financials, Technology**	If women are appropriately reflected in management and senior management cohorts than they should also be represented on the Board. This applies to both executive and non-executive roles although the latter will, to a greater degree, depend on the encouragement of female progression in other organisations. The development of talent and its effective management is a critical part of human capital development and its contribution to performance. Boards and top management reflecting the overall composition of the workforce, and the markets the business serves, are an indicator of effective talent management.	Diversity in Board composition is at the apex of diversity across the organisation. Female representation on the Board is not only an indicator of good talent management internally but a commitment through governance processes to better reflect the composition of wider society at highest levels of management within the organisation.	Diversity in Board Composition as an indicator of strong corporate governance processes.	Effective corporate governance should align interests of shareholders and management in pursuit of long-term value creation. A broader board composition, better reflecting the complexion of the markets in which the business operates, should help reduce inappropriate decision making and risk taking.
					Ethnic minority employees, managers, senior managers, Board	**Oil & Gas, Basic**	If ethnic minorities are appropriately reflected in management and senior management cohorts than they should also be represented on the Board. This applies to both executive and non-executive roles although the latter will, to a greater degree, depend on the encouragement of ethnic minority progression in other	Diversity in Board composition is at the apex of diversity across the organisation. Ethnic minority		

77	GOV 026	Governance & Risk Management	Corporate Governance	Policies and procedures	Ethnic minority employees, managers, senior managers, Board (%)	Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Consumer Services, Telecoms, Utilities, Financials, Technology	If ethnic minorities are appropriately reflected in management and senior management cohorts then they should also be represented on the Board. This applies to both executive and non-executive roles although the latter will, to a greater degree, depend on the encouragement of ethnic minority progression in other organisations. The development of talent and its effective management is a critical part of human capital development and its contribution to performance. Boards and top management reflecting the overall composition of the workforce, and the markets the business serves, are an indicator of effective talent management.	Diversity in Board composition is at the apex of diversity across the organisation. Ethnic minority representation on the Board is not only an indicator of good talent management internally but a commitment through governance processes to better reflect the composition of wider society at highest levels of management within the organisation.	Diversity in Board Composition as an indicator of strong corporate governance processes.	Effective corporate governance should align interests of shareholders and management in pursuit of long-term value creation. A broader board composition, better reflecting the complexion of the markets in which the business operates, should help reduce inappropriate decision making and risk taking.
78	GOV 027				Implementation of Codes of Ethics/Conduct	Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Consumer Services, Telecoms, Utilities, Financials, Technology	Before introduction US Sarbanes Oxley legislation, a number of studies showed high correlation between adoption of Code of Conduct/Ethics and business outperformance. Since Sarbanes Oxley, all US and US listed companies required to have code identifying salient/materials risks and appropriate policy/process. ESG risks are often encompassed in such codes. Adoption of codes as a sign of concern or as a characteristic of good management is no longer relevant in these circumstances. More recent studies have focused on implementation effectiveness using a range of criteria. Many show statistically greater outperformance positively correlated to the degree of effective implementation. What is the metric, what criteria? Can we composite from within Framework or more specific indicators required?	Effective implementation of Codes is often a close proxy for a register of ESG issues and remediation/management process and procedure. While not explicly ESG focused, they are often stakeholder based or broadscope values driven policy where ESG issues are explicit and implicit.	Codes are generally policy and procedure initiated or endorsed at the highest level within companies. They are often intended to cascade responsibility for appropriate governance and alignment with adopted vision/values down through line management of business. Codes increasingly implemented alongside or in parallel process to strategy implementation.	There is strong and robust statistical correlation between Code adoption/implementation and outperformance in a range of financial performance metrics - e.g. Profit, EVA, EPS, TSR. This implies codes are a proxy for good management and, as a leading indicator, have good predictive relevance. Depending on criteria for assessing effective implementation, it also suggests a method of companies identifying and effectively managing the most salient/material ESG risks and opportunities.
79	GOV 028				Costs of penalties (incl litigations) as a % of revenue	Health Care, Telecoms, Utilities, Financials, Technology,	The costs of non-compliance cover more than the fines imposed. They can lead to the end of a career or the end of a firm. Regulations may cover privacy and data protection, financial conduct, health and safety measures.	High levels of fines and litigation costs would indicate that the company does not comply sufficiently with regulatory requirements.	Non-compliance constitutes regulatory risk.	Non-compliance indicates poor governance and risk management.
80	GOV 029				Total expenditure on legal expenses/fines for Corruption and anti-competitiveness$	Health Care, Telecoms, Utilities, Financials, Technology,	The regulatory environment is evolving in its complexity and the rigour with which it is enforced. Companies that can manage these regulatory requirements and ensure compliance are in a position to protect shareholder value and limit downside risk.	High levels of fines and litigation costs would indicate that the company does not comply sufficiently with regulatory requirements.	Non-compliance constitutes regulatory risk.	Non-compliance indicates poor governance and risk management.

81	GOV 030	Governance & Risk Management	Regulatory Risk	Regulatory Compliance	Cost of fines/Penalties (incl litigation for privacy breaches as a % of revenue	Health Care, Telecoms, Utilities, Financials, Technology,	The regulatory environment is evolving in its complexity and the rigour with which it is enforced. Companies that can manage these regulatory requirements and ensure compliance are in a position to protect shareholder value and limit downside risk.	High levels of fines and litigation costs could indicate that the company does not comply sufficiently with regulatory requirements.	Non-compliance constitutes regulatory risk.	Non-compliance indicates poor governance and risk management.	
82	GOV 031				Costs of regulatory compliance as % of revenue	Health Care, Telecoms, Utilities, Financials, Technology,	Companies in highly regulated markets or those subject to reputational/competition issues are now beginning to assess the costs of actual or potential regulatory compliance. This may include costs of regulatory fulfilment, remediation, penalties or anticipated costs including 'trade-offs'. In some cases this is being factored into internal investment case analysis. It is a relatively new 'science' and results are rarely shared externally but often appear has headline figures in public lobbying or industry analysis.	This implies either direct impact through compliance with explcit ESG based regulation or indirect impact through compliance with regulation that has ESG salience. Both could be material in specific industries that are highly regulated or where risk of market faiure is greater or industries with specific competition/reputational issue.	This covers both current risk and forward-looking risk analysis.	Regulatory compliance costs will impact on cost structure and operating expenses. Dislocation may impact on trading and revenue. Structral costs are a drain on CAPEX and the risk/reputational issues and (potential) exposures may result in risk re-rating and changes in cost of capital and RAROC. Forced divestment or restructuring will almost certainly negatively impact on market sentiment and TSR.	
83	GOV 032				Calculated impact of proposed/potential regulation (% of revenue)	Health Care, Telecoms, Utilities, Financials, Technology,	This a broader perspective on D83. It is generally forward looking scenario analysis based on regulatory/reputation/competition analysis. It might include anticipation of future regulation, industry or market restructuring, company divestments or segmentation, and other remedial requirements.	This implies either direct risk through compliance with explicit ESG based regulation or indirect risk through compliance with regulation that has ESG salience. Both could be material in specific industries that are highly regulated or where market failure risk is greater or industries with specific competition/reputational issues.	This covers primarily forward-looking risk analysis although it may well be based on current experience and regulatory/competiton/reputation environnment.	Regulatory compliance costs will impact on cost structure and operating expenses. Dislocation may impact on trading and revenue. Structral costs are a drain on CAPEX and the risk/reputational issues and (potential) exposures may result in risk re-rating and changes in cost of capital and RAROC. Forced divestment or restructuring will almost certainly negatively impact on market sentiment and TSR.	
84	GOV 033		Regulatory Risk	Regulatory Compliance	Product withdrawn and/or brought to market as a result of regulatory requirements ($m)	Healthcare, Telecoms, Financials, Technology	Regulatory/competition/reputational remediation costs of developing/delivering new products/services outside the normal business case parameters or costs and earnings foregone through withdrawing offending products from market.	This implies either direct risk through compliance with explicit ESG based regulation or indirect risk through compliance with regulation that has ESG salience. Both could be material in specific industries that are highly regulated or where market failure risk is greater or industries with	This covers primarily forward-looking risk analysis although it may well be based on current experience and regulatory/competiton/reputation environnment.	Regulatory compliance costs will impact on cost structure and operating expenses. Dislocation may impact on trading and revenue. Structral costs are a drain on CAPEX and the risk/reputational issues and (potential) exposures may result in risk re-rating and changes in cost of capital and RAROC. Forced divestment or restructuring will almost certainly	
					Published payments to host governments $	Oil & Gas, Basic Materials	Extractive industry faces mandatory reporting of payments to host governments (SEC rules 1502 & 1504 amongst others). Consistent and sizeable contributions to the local economy ensure licence to operate. Important factor in	Transparency, greater	Transparency and contributions to	Can lead to less risk of losing licence to	

86	GOV #35				% revenue retained in host region	Oil & Gas, Basic Materials, Telecoms, Utilities,	The degree to which the business is genuinely located and integrated in the local community. The degree to which generated income is retained in the host country and not transferred - overtly or covertly - to parent market. By extension, the level of local supplier purchasing in host country.	The degree to which revenue, spending and investment is made in local markets reflects commitmenbt to those markets and local communities	Although remotely owned, well integrated businesses are likely to be treated more like indigenous business and benefit from greater licence to operate. In local markets, especially where there is significant employment or operational footprint.	Effective management of licence to operate prevents operational and structural costs of preventing or compliance with unwelcome regulation or other ESG obligations. It reduces risk of significant or even terminal business disruption. Effective management is likely to align with a lower risk rating, consequent lower costs of capital and ultimately superior shareholder returns.	
87	GOV #36		Licence to Operate		Taxation paid in host countries $	Oil & Gas, Basic Materials, Telecoms, Utilities,	The degree to which the business is genuinely located and integrated in the local community. The degree to which generated profit is retained in host country and taxes on profit paid in accordance with local regulation.	taxation for multinational enterprises is a voluntary obligation. Under legitimate tax regimes, payment may be obligatory only in parent state. Alternatively, internal operational processes can transfer profits to parent or other more desirable tax regimes. Payment of tax in host	Businesses seen to comply with local tax regimes and contribute to local economies will benefit from greater licence to operate.	evade local taxation by legitimate means have come under scrutiny in recent years. The use of sophisticated corporate structures and financial arrangements have been viewed as a platform for tax avoidance, even where legal and legitimate. The practice has opened companies to reputational and wider license to operate risk with the threat of	
88	GOV #37	Governance & Risk Management	Licence to Operate		Community Engagement Expenditure in host county $	Oil & Gas, Basic Materials, Telecoms, Utilities,	Many companies adopt community engagement strategies, particularly operating in overseas or sensitive environments, or where they are a significant geographic, economic or employer presence. Community engagement is key stakeholder outreach with local governmental, political and community opinion formers and the local community itself. It may include investment in local community infrastructure but as an expectation or obligation, not for philanthropic or commercial marketing/sponsorship purposes, as part of maintaining licence to operate. As engagement is the intended outcome, this metric is a performance outcome in its own right.	Community engagement as an ESG obligation in its own right but also uses ESG as a tactical element of community engagement strategy to maintain and defend licence to operate.	Licence to operate is the goodwill of local and national communities, key stakeholders and opinion formers, and community engagement is a critical element of maintaining/promoting this. More actively, community engagement is also designed to prevent or influence potential regulatory or social obligations that may impact on the operational, reputational and financial performance of the business.	Effective management of licence to operate prevents operational and structural costs of preventing or compliance with unwelcome regulation or other ESG obligations. It reduces risk of significant or even terminal business disruption. Effective management is likely to align with a lower risk rating, consequent lower costs of capital and ultimately superior shareholder returns.	
89	GOV #38				% workforce locally employed	Oil & Gas, Basic Materials, Telecoms, Utilities,	Employment of local people contributes to the local economy and therefore can assure the licence to operate. Long-term, sustainable jobs are a sign of a company's commitment to the operation.	High % of local employment indicates engagement to the community	High % of local employment is likely to assure the licence to operate.	High % of local employment minimses the risk of loss of licence to operate.	

90	GOV 039			Community engagement	Number and nature of government requests re internet filtering, censorship or provision of user data and the percentage complied with.	Telecoms, Technology	The level of transparency that a company has on the number and nature of requests and the proportion complied with is important to ensure confidence and avoid surprises.	Transparency on these requests and the company's compliance with them may help to retain community engagement.	A company that complies openly with government requests of this nature may safeguard its licence to operate.	Transparency with regard to government requests for internet filtering, censorship and / or provision of user data is the best way of minimising the risk of loss of licence to operate.
91	GOV 040				Community Investment Expenditure in host county $	Oil & Gas, Basic Materials, Telecoms, Utilities,	A primarily or exclusively philanthropic programme of donations to local community and not-for-profit causes. It may also be part of a commercial marketing/sponsorship strategy, earning goodwill, positive PR and reputational benefits. However, the commercial payback is unlikely to be the sole or even significant part of	Community investment or philanthropic or quasi-commercial community sponsorship is a widely practised element of community engagement strategy. It also represents fulfilment of stakeholder expectations or	Community investment is an important element of effective community engagement and maintaining/promoting business licence to operate. It may also help mitigate regulatory/reputational pressures which might impact on the	Effective management of licence to operate prevents operational and structural costs of preventing or compliance with unwelcome regulation or other ESG obligations. It reduces risk of significant or even terminal business disruption. Effective management is likely
92	GOV 041				Total expenditure political donations and lobbying $	Oil & Gas, Basic Materials, Industrials,, Telecoms	This metric identifies payments to political parties, agents or 3rd parties such as political action committees and expenditure on political lobbying. Whilst perfectly legal in many countries, high levels of expenditure on these activities may indicate the intention to influence political and regulatory agendas. This practice is widely seen as unethical and in some countries is outlawed, tightly regulated or it	Political payments and lobbying that transgress legal boundaries or are perceived to unfairly influence/mitigate regulatory/social obligations may be a competitive or even corruption issue. They may aim to reduce or avoid (potential) regulatory costs on the business or	Illegal, corrupt or anti-competitive political payments and lobbying expenditure are a regulatory/reputational and ethical issue which impacts negatively on licence to operate. Legal or otherwise legitimate payments and lobbying may also be perceived negatively by the public and impact on business	The avoidance or elimination of illegitimate political payments and illegitimate lobbying activity or the avoidance of negative sentiment towards otherwise legitimate political payments and lobbying is effective management of licence to operate. It prevents operational and structural costs of preventing or compliance with unwelcome regulation or
93	GOV 042	Governance & Risk Management	Licence to Operate		% of business covered by anticorruption policy & training	Oil & Gas, Basic Materials, Industrials, Telecoms, Financials	This metric measures the commitment to ensure that employees are aware of the regulatory requirements concerning anti-corruption and avoidance of conflicts of interest. Non-compliance with these requirements represents a very high risk for firms, especially in the financial sector.	Indicator of active programmes to challenge and address corruption and anti-competitiveness.	Recognition of and commitment to address inappropriate activities and behaviours. While these may be prevalent in the host country, this commitment is intended to reduce exposure risk and engender support from local community and regulators	Corruption and anti-competitiveness are behavioral issues at both individual and corporate levels. Even in regimes where these activities are endemic, individual and corporate transgression can be a significant reputational and governance risk. At the corporate level, they can also indicate wider risk operational and governance issues bringing systemic risk to local markets.
					% of business covered by Whistleblower protection programme					Corruption and anti-competitiveness are behavioral issues at both individual and

Validating Delphi's data

Dependent variable:	downside risk (semideviation of return)		total market risk (variance of return)	
independent variables	*Standard Coefficient*	*t*	*Standard Coefficient*	*t*
# OF NEDS ON BOARD	1.95E-06	0.09	0.0003379	0.46
HEALTH_SAFETY_POLICY	-0.0003694	-3.31***	-0.0041975	-1.12
CDP_REGULATORY_RISK_EXP	-0.0001345	-1.02	-0.0005422	-0.12
RESS_ENVIRON_SUPPLY_MGT	-0.0000684	-0.72	-0.0037088	-1.16
OPER_CDP_PHYSICAL_RISK_EXP	0.0000484	0.43	0.0007631	0.2
F	F(5, 848) =	3.83**	F(5, 848) =	0.88
Adjusted R^2	0.0221		-0.0007	

OLS regression per sector between downside risk and ESG metrics

Dependent variable: downside risk	Oil & Gas		Basic materials		Consumer Services		Utilities	
Variable	*Standard Coefficient*	*t*	*Standard Coefficient*	*t*	*Standard Coefficient*	*t*	*Standard Coefficient*	*t*
# OF NEDS ON BOARD	0		0		0		0	
HEALTH_SAFETY_POLICY	0		-0.0015959	-2.15**	-0.0005344	-2.8***	0	
CDP_REGULATORY_RISK_EXP	-0.0006722	-2.19**	0		0		0	
ENVIRON_SUPPLY_MGT	0		-0.0010484	-1.77*	0		0.0000481	1.37*
CDP_PHYSICAL_RISK_EXP	0		0		0		0	
LOST_TIME_INCIDENT_RATE	0		0		0		0	
F	F(1, 56) = 4.79**		F(2, 144) = 6.44***		F(1, 279) = 7.83***		F(1, 55) = 1.89*	
Adjusted R^2	0.0624		0.0693		0.0238		0.0156	
chi^2	0.15		68.79		80.74		11.03	



Questions