How does innovation drive a successful sustainable business strategy?

By Morris D Fedeli © 2018. Student ID: 1097268. Faculty of Business.

Research Proposal Panel Presentation for USQ DBA/PhD program.

Supervisors: Dr Fernando Padro & Dr Paul O’Brien

Associate Dean: Dr Patrick Danaher

Panel: Dr Raj Gururajan (Chair), Dr Krzysztof Dembek & Dr Lee Fergusson
sus.tain’abil’i.ty: n., the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable Borrow-Use-Return Model

***(S)BM: (Sustainable) Business Model

***SPM: Sustainable Performance Measurement

***BMI: Business Model Innovation

***CSP: Corporate Sustainability Performance

Source: Based on Bob Doppelt, The Power of Sustainable Thinking, Earthscan, 2008, p. 34.
Context (circular economy - systems value forms)

Sustainable Value Model

Environmental Value Forms
- Renewable resource, low emissions, low waste, biodiversity, pollution prevention (air, water, land)

Social Value Forms
- Equality and Diversity, Well-being
- Community, Development, Secure Livelihood, Labor Standards, Health and Safety

Economic Value Forms

Sustainability matters: the normative approach in the pursuit of the common good (and sustainability) is to "do good to do well“, i.e. across all three value forms (cf. Ehrenfeld 2017, Upward 2014, O’Neill 2010).

Morris D Fedeli

Figure A-1. Sustainable value model developed by the Author for this study.
Environmental Impact (key facts/examples)

- Global population is 7.6 billion and growing with Earth’s total resources only good for 2 billion people. Three of the nine planetary limits have already been exceeded (SDG13 & SDG14 & SDG15). Human induced climate change has seen an increase in natural calamities around the world (currently 400ppm) (SDG13).

- Earth’s natural resources are being used at a faster rate than they can replenished coupled together with tremendous wastages (e.g: global volume of food wasted per year is estimated to be 1.3 Gtonnes, about 1/3 of all food produced) (SDG12).

- Environmental pollution has been reaching alarming rates, poisoning our waterways and air coupled with land degradation (SDG6 & SDG7) (e.g: 92% of the world’s population lives in places where air quality levels exceed WHO limits).

Social Impact (key facts/examples)

- Discrimination between the genders (SDG5 & SDG10)
- Respect for human rights: Inequalities between developed and developing countries has brought much detrimental social and health issues e.g: lack of medical, education (SDG4) and housing.
- Poverty: 767 million people live below the international poverty line of $1.90 a day (SDG1)
- Hunger: 795 million undernourished people in the world today (SDG2)
- Child Labour: 152 million in child labour around the world (SDG8)

Source: 2017 United Nations World Food Programme; Sustainable Development Programme; Statistical Commission; International Labour Organization; UNICEF; UNESCO.
Economic Impact *(key facts/examples)*

- Major economies face destabilization as oil, coal precious metals and other once indicators of a successful economy are no longer.
- Energy costs have been climbing with no end in sight, necessitating the move away from fossil fuels to renewable energy sources (SDG7).
- Avoiding legal and safety compliance, corruption and taxes, cross border transactions/operations abroad (SDG16).
- Smart cities, new technologies, innovation bringing growth and jobs back to the workers (SDG8 & SDG9 & SDG11).

*Source: 2017 United Nations Sustainable Development Programme; International Monetary Fund.*
Purpose and structure of study

- Determine the sustainability (SPS) of an enterprise based on innovations at the BM level (BMI) i.e: performance cf benchmark
- Identifying the business strategy which represents its BM pattern in action (Mintzberg 2000, Ludeke-Freund et al. 2017)
- Enterprises operate within the sustainable value network (SVN)/Circular Economy (CE) (cf. Evans et al. 2017, EMF 2015)
- Transparent and publicly available data (e.g. GRI, CDP, <IR>, II, TRI)
- Consider science and context-based material topics (McElroy et al. 2015, Eccles 2017)
- Develops underlying framework for an assessment and management tool
- Allows for year-on-year & cross enterprise, cross sector & global comparisons

***SPS: Sustainability Performance Score ***GRI: Global Reporting Initiative
***SVN: Sustainable Value Network ***CDP: Carbon Disclosure Project
***<IR>: Integrated Reporting ***SDGs: Sustainable Development Goals
Why is this study necessary (experts agree)

Sustainability is an interdisciplinary topic and at the mercy of very complex dynamics that cannot be easily broken down into smaller manageable problems and solutions.

Instead a holistic top down principled and disciplined systematic approach is necessary to ensure workable solutions to these wicked problems so as to ensure society’s ability to survive and thrive long term as a species.

Business working alongside governments are at the center of our economy, particularly in the developed world and increasingly so relying on natural resources and human resources from developing nations.

Failing to ensure sustainability of these resources ultimately will impact business growth and society’s ability to survive and thrive long term as a species.
What we know (BM)

How a business operates can be described through BM patterns (Mintzberg 2000, Amit & Zott 2012, Upward 2013) whereby the BM (organizational form) is an underlying predictor of performance... with studies showing that innovativeness (i.e: disruptive innovation, see Christensen 2005)) at the BM level is a source of success... (Ball 2006; Evans et al. 2017; Morioka et al. 2016; Schaltegger et al. 2016). Studies have identified certain (sustainable) BM patterns to be more successful than others (Ludeke-Freund et al. 2016). Science & Technology enabler for BMI.

Taxonomies have been developed by Carroux 2017, Remane et al. 2017 and Bocken et al. 2014. Descriptive tools and frameworks include BMC (Osterwalder & Pigneur 2004), TLBMC (Joyce & Paquin 2016), FBC (Upward & Jones 2016) and SUST-BMA (first tool that aligns BM with SBSC and assessment)(Lüdeke-Freund et al. 2017).

Analysis of transactions between a focal firm and its ecosystem of partners, customers, and suppliers transcend traditional firm boundaries. The link between BM, wealth creation and (financial) performance has been empirically shown to be a source of (sustainable) competitive advantage (Zott & Amit 2008). Business models are a better predictor of financial performance (and value creation) than industry classifications and some business models do, indeed, perform better than others (e.g: asset right use more valuable than asset ownership) (Malone et al. 2006).

***BMC: Business Model Canvas
***MCS: Multi Capital Scorecard
***BSC: Balanced Score Card
***SBSC: Sustainable Balanced Score Card

What we know *(SPM)*

- Sustainability of a business can be gauged with SPIs using a number of methods (Schaltegger et al. 2016; McElroy 2012; Figge & Hahn 2005). Aspects of context, limitations and monetization need to be considered, yet they are not always so. Also noteworthy, is that sustainability issues are largely being treated as externalities and therefore not reflected in market prices and transactions (Schaltegger and Burritt 2005).

- Example frameworks: the SBSC (Kaplan & Norton 2000) provides a strong tool for integrated sustainability (performance) management (Figge et al. 2002; Hansen & Schaltegger 2016) and is used to operationalize corporate strategy. Sustainable Value Added (SVA) is based on the paradigm of strong sustainability (Neumayer 2013) and shows performance relative to a benchmark (Figge & Hahn 2003). McElroy’s context-based sustainability (CBS) MCS method incorporates thresholds and allocations, thus ensuring fairer assessment (i.e. science-based and ethics-based).

- **Materiality**: Mapping the 36 GRI material topics onto the BMC for assessing SPIs. Integrated Reporting (<IR>) provides transparent publicly available context-based tri-impact reporting contributing towards sustainable development (SD).
The gaps: SBM vs SPM

- Trans-disciplinary (Ludeke-Freund 2016)
- Finite resources (Rockstrom 2009, Steffen et al. 2015)
- Complex wicked problems (Breuer & Ludeke-Freund 2017)
- Boundary/Unit of Analysis (Schaltegger at al. 2012; UNEP 2017; Evans et al. 2017)
- Materiality (UNEP 2015; Eccles 2012; Lai et al. 2017)
- Integrated reporting (<IR>/Tri-impact (Eccles et al. 2018)
- Scientific evidence-based data/Congruent units (Lydenberg et al. 2010)
- Context-based sustainability (McElroy & Thomas 2015; Eccles 2018)
- Strong vs weak sustainability/Greenwashing (Upward & Jones 2016; Najam et al. 2000)
- Values-based (Breuer et al. 2017; Schaltegger et al. 2015)
- Multi-capital (McElroy & Thomas 2015)
- Linear to Circular Economy (CE) (Geissdoerfer et al. 2017)
Methodology & Research Question

- Bringing together knowledge thus far on BMI and SPM. Adopting a rationalist world view, the study proposes to construct a *theoretical foundation for the framework* linking BMI and SPM to corporate sustainability.
  - *How does (BM) innovation drive a successful sustainable business strategy?*
- Emergent meta-analysis process: define criteria for selection (inclusion/exclusion); expansive/exhaustive systematic review of peer reviewed journals & credible grey literature (tools: EN & Nvivo and mind mapping tools). *Thematic analysis.*
- Augments a number of initiatives by several organizations who are approaching this topic from an *empirical industry perspective*: WikiRate, World Business Alliance (WBA), Global Reporting Initiative (GRI) to name a few. Some provide global repositories such as GRI, Carbon Disclosure Project (CDP), Climate Counts (CC), and CHRHub for sustainability related data.
Rigour, Biases & Lens

Reliability and Validity (Appendix S)
- Rigour through triangulation of qualitative & quantitative data (Morse 1991)
- Improve validity through maximum variation with literal and theoretical replication (Patton 1990)
- Multi-case study (Yin 2004, 2014) external validity through replication logic (Morse 1991)
- Multiple sources of evidence: journal articles, conferences, expert discussions, official websites, narratives (Yin 2004)
- Chain of evidence (Healy & Perry 2000; Huberman & Miles 2002)

Respondent and Researcher Biases (Appendix R)
- Control for research biases (Creswell 2013; Bryman 2016)

Transformative framework or lens
- Aimed at social well-being; call to action (Mertens 2007)

Database of sources
- EN (sources), Nvivo (analysis) and FreeMind (concepts)
## Sustainability Performance Scorecard

<table>
<thead>
<tr>
<th>Enterprise</th>
<th>Industry (ICB)</th>
<th>SBM pattern # [1..45]</th>
<th>SPI score [0..1]</th>
<th>Sustainable [Y/N]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnson &amp; Johnson</td>
<td>Pharmaceutical</td>
<td>32</td>
<td>0.768</td>
<td>Y</td>
</tr>
<tr>
<td>Apple</td>
<td>Technology</td>
<td>14</td>
<td>0.625</td>
<td>Y</td>
</tr>
<tr>
<td>Unilever</td>
<td>Household Goods</td>
<td>07</td>
<td>0.891</td>
<td>Y</td>
</tr>
<tr>
<td>PepsiCo</td>
<td>Consumer Goods</td>
<td>27</td>
<td>0.503</td>
<td>Y</td>
</tr>
<tr>
<td>Pfizer</td>
<td>Health Care</td>
<td>45</td>
<td>1.106</td>
<td>N</td>
</tr>
<tr>
<td>Deutsche Bank</td>
<td>Financial Services</td>
<td>39</td>
<td>1.282</td>
<td>N</td>
</tr>
</tbody>
</table>

SPI score: 0 <= score <= 1 means sustainable enterprise [Y], score >1 means NOT a sustainable enterprise [N]. Context based sustainability (CBS) SPI scores will be calculated at a minimum from GHG emissions worldwide. More comprehensive composite scores across multiple material topics may be possible using data from WikiRates.

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**Figure A-2.** SPI ScoreCard developed by the Author for this study. For illustration purposes only.

***SBM: Sustainable Business Model
***SPI: Sustainable Performance Indicator
Research Design & Analysis

- **Phase I:** Exploratory conceptual case study. Extensive Literature Review. Using mixed approach synthesizing qualitative & quantitative findings.

- **Phase II:** Empirical case study: Selected case studies of multinational corporations across multiple industries (Apple, J&J, TESLA, Siemens, Westpac, Amazon, Kodak, Nokia, Tata, Netflix, Xerox). BM as the unit of analysis.

*** Onwuegbuzie et al. 2010; Cameron & Miller 2007; Eisenhardt 1989
Conceptual Framework *(transformative lens)*

**Figure A-2.** Conceptual framework developed by the Author for this study.

“Every responsible act has a sustainable impact”

*Morris D Fedeli*
Research Procedure & Process

- NBM: descriptive: FBC (Upward)
- SBM: identification/taxonomy: classification: SBM patterns (Carroux)
- SPM: contextualization/determination: MCS (McElroy)
- Issues: Materiality, Context based, Multi-capital, Integrated etc (*see “The Gaps” slide); use of proxies
- Formulate Theoretical Framework (SBM vs SPM): e.g. overlay GRI material topics onto BMC/FBC, determine proxies e.g. total societal impact (TSI), cross sector weights/adjustments
- Transparent and open publicly available data sources/reports: e.g. GRI, CDP, <IR>
- Sustainability Performance Scorecard (SPS)

**NBM: New Business Model  
**SBM: Sustainable Business Model  
**SPM: Sustainable Performance Measurement  
**MCS: Multi Capital Scorecard
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Primary data sources: Journal articles, audited company statements, sustainability reports (or illustrative data)
* Climate Counts (2013) provides a useful set of data for the 2007-2012 period.
* GRI sustainability reports/CDP provides audited publicly available corporate sustainability performance data and materiality topics for evaluation.

Secondary data sources: Conferences (NBM), corporate websites, news articles

Resources: Application has been made for funding, however this largely theoretical project is not dependent on any of these funds. The Author is covering all costs.

Ethics:
* There are no participants officially being interviewed as part of this study
* This study is not being funded by any organization.

*** 2200hrs+; 404 key sources; 600+ other sources
Timeframe & Milestones

Events/Presentations: eg: 3RD INTERNATIONAL CONFERENCE ON NEW BUSINESS MODELS
27/28 JUNE 2018, SOFIA, BULGARIA
Several studies explain that when it comes to innovating and implementing sustainable BMs, business leaders and innovators do not know where to start (Schaltegger et al. 2016; Breuer & Lüdeke-Freund 2017; Kurucz et al. 2017; Lüdeke-Freund et al. 2017).

Establish the linkages between business models (BMs) and sustainability performance (SPM) and provide approaches to their identification and systematic assessment and management (Lüdeke-Freund et al. 2017). Quantifying sustainability performance measurement (SPM) and qualifying business models (BM).

Develop a framework to assess the effects of innovation and business models on corporate sustainability performance. Identifying what BM tools and methods could largely ensure the long term sustainable success of a business? How does (BM) innovation drive a successful sustainable business strategy?

Original contribution to BMfS whereby I contend that radical corporate innovation (particularly at the BM level) is the single biggest contributor to sustainability and thus the long term survivability of the human species.

Morris D Fedeli
How does innovation drive a successful sustainable business strategy?
“Innovation is imperative. It's the only insurance against irrelevance.”

Morris D Fedeli
<table>
<thead>
<tr>
<th>Supplemental Topics, Tables &amp; Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Dimensions &amp; Questions</td>
</tr>
<tr>
<td>Sustainable Value Network (Evans)</td>
</tr>
<tr>
<td>UN SDG</td>
</tr>
<tr>
<td>FBC (Upward)</td>
</tr>
<tr>
<td>TLBMC (Joyce)</td>
</tr>
<tr>
<td>GRI Report: J&amp;J</td>
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<tr>
<td>GRI Material Topics</td>
</tr>
<tr>
<td>GRI Sustainability Development Database</td>
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<tr>
<td>Evolution of BMI to SBM</td>
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<tr>
<td>Planetary Boundaries (Steffen)</td>
</tr>
<tr>
<td>The Doughnut (Raworth)</td>
</tr>
<tr>
<td>MultiCapital Scorecard (McElroy)</td>
</tr>
<tr>
<td>Methodology (Tranfield)</td>
</tr>
<tr>
<td>Endnote References</td>
</tr>
<tr>
<td>Common Questions and Answers</td>
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<tr>
<td>What leaders &amp; Experts have to say</td>
</tr>
</tbody>
</table>
Research Dimensions and Questions (Table 4-1)

General Research Dimensions

<table>
<thead>
<tr>
<th>Worldview</th>
<th>Approach</th>
<th>Framework/Type</th>
<th>Logic</th>
<th>Outcome</th>
<th>Ethics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontology</td>
<td>Epistemology</td>
<td>Paradigm</td>
<td>Design</td>
<td>Mixed Method</td>
<td>Deductive</td>
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<tr>
<td>Atheist</td>
<td>Rationalist</td>
<td>Critical Realist</td>
<td>Exploratory Multi-case</td>
<td>Transformative Observational</td>
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<tr>
<td>Realist</td>
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<td></td>
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<tr>
<td>Framework/Type</td>
<td>Logic</td>
<td>Outcome</td>
<td>Ethics</td>
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<td>Humanist</td>
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Table 4-1. General Research Dimensions for this study, as established by the Author.

How does innovation drive a successful sustainable business strategy?

<table>
<thead>
<tr>
<th>RQ</th>
<th>Research Question</th>
<th>Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1</td>
<td>What is the theoretical framework (TF) that links Innovation to Sustainability?</td>
<td>QUAL</td>
</tr>
<tr>
<td>RQ2</td>
<td>What business models (BM) deliver the most sustainable outcomes?</td>
<td>QUAL/QUAN</td>
</tr>
<tr>
<td>RQ3</td>
<td>What sustainable performance indicators identify business models that deliver the best sustainable outcomes?</td>
<td>QUAL/QUAN</td>
</tr>
</tbody>
</table>

Table 3-1. Research Questions, developed for this study by the Author.
Appendix D: Sustainable Value Network

Unit of Measure/Boundary

Sustainable Value Network by Evans et al. (2017).
Appendix V: UN Sustainable Development Goals (SDG)

UN Sustainable Development Goals have been established to ensure that our planet may sustain the possibility for human and other life to flourish forever.

An Enterprise needs to do good AND do well in order to meet SDGs.

Morris Fedeli
Appendix W: Flourishing Business Canvas (FBC)

Figure W-1. Flourishing Business Canvas (FBC) developed by Antony Upward 2013.

Appendix O: Triple Layered Business Model Canvas

Figure O-1. Triple Layered Business Model Canvas used in this study by the Author. Originally developed by Osterwalder and Pigneur (2010) and adapted by Joyce and Paquin (2016).
Appendix L: GRI Report 2017 by Johnson & Johnson

Figure L-1. Sample report, page 93 from Johnson & Johnson HEALTH FOR HUMANITY REPORT 2016 highlighting reference to GRI 102-16 and GRI 306-3 disclosures.
### Appendix I: GRI Reporting Material Topics

<table>
<thead>
<tr>
<th>Standard Series</th>
<th>Number</th>
<th>Title</th>
<th>GRI 400</th>
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<tr>
<td><strong>GRI 100</strong></td>
<td>101</td>
<td>Foundation</td>
<td>401</td>
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<td>102</td>
<td>General Disclosures</td>
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<td>103</td>
<td>Management Approach</td>
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<td><strong>GRI 200</strong></td>
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<td>Economic Performance</td>
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<td>202</td>
<td>Market Presence</td>
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<td>203</td>
<td>Indirect Economic Impacts</td>
<td>406</td>
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<td>204</td>
<td>Procurement Practices</td>
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<td>Anti-corruption</td>
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<td>Anti-competitive Behavior</td>
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<td><strong>GRI 300</strong></td>
<td>301</td>
<td>Materials</td>
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<td>Water</td>
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<td>304</td>
<td>Biodiversity</td>
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<td>305</td>
<td>Emissions</td>
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<td>306</td>
<td>Effluents and Waste</td>
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<td>Environmental Compliance</td>
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<td>308</td>
<td>Supplier Environmental Assessment</td>
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<table>
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<tr>
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Table I-1. Table of GRI Standards ([https://www.globalreporting.org/](https://www.globalreporting.org/) standards).
Appendix J: GRI Sustainability Development Database
Appendix C: Evolution of the (BM)I to the S(BM)

The evolution of the BM concept linking innovation to sustainability across the Sustainable Value Network (SVN) as illustrated by the Author.

Figure C-1. The Evolution of the BM concept linking Innovation to Sustainability across the Sustainable Value Network, illustrated by the Author.
Appendix X: Planetary Boundaries

Figure X-1. Planetary Boundaries by Steffen et al. (2015).
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How does innovation drive a successful sustainable business strategy?

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MultiCapital Scorecard

MultiCapital Scorecard (MCS) by McElroy et al. (2008).
Methodology (steps)

Stage I - Planning the review
- Step 0 - Identification for the need for a review
- Step 1 - Preparation of a proposal for a review
- Step 2 - Development of a review protocol

Stage II - Conducting a review
- Step 3 - Identification of research
- Step 4 - Selection of studies
- Step 5 - Study quality assessment
- Step 6 - Data extraction and monitoring progress
- Step 7 - Data synthesis

Stage III - Reporting and dissemination
- Step 8 - The report and recommendations
- Step 9 - Getting evidence into practice

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Common Questions and Answers

- I do not believe in anthropocenic climate change: regardless if man-made or not, increase in carbon emissions is detrimental to the longevity of humans and other species on earth; 97% of scientist agree we need to take action now (see slide on population growth and CO₂ emissions) (Cook et al 2009).

- It would be the pinnacle of entrepreneurship if one could establish which business models are more successful than others represents: yes, it would be, however this study adopting future-fit targets, will conceptually and empirically show which organizations are more likely to succeed; there are no guarantees.

- Given that the WBA is developing ‘league tables’, why is this study needed? League tables, much like the Wikirate or the CHRHub database or even a context-based (CBS) GRI strictly deal with the data capture aspect of this research. Still need a strong conceptual basis. Hence I am on reporting 3.0, WBA, GRI and working with Wikirate organization.

- Why is it necessary for context-based (CBS) data source when sustainable value added (SVA) or GRI intensities would be sufficient? SVA assumes targets based on GDP are sustainable which may not be. Also GDP is NOT a good measure of sustainability. Intensities are not very good measures either.
What leaders and experts have to say...

“Ranking companies on their actual behavior doesn’t only drive the top of the list to set new boundaries, it also stimulates the companies in the lower regions to adapt their strategy and behavior.”

– Wim Leereveld (Chairman of the Board Index Initiative & Founder Access to Medicine Index)

“...we are not sustainable unless we innovate, and in order to innovate, we have to be sustainable”

– Ernesto Ciorra (Head of Innovation and Sustainability at Enel)

“We strongly support creation of corporate SDG benchmarks that harmonize and build on existing corporate reporting requirements and frameworks. This would for the first time enable leaders and boards of companies, policymakers, civil society and investors to quickly and easily compare relative performances of companies within a sector, over time, on a range of relevant SDGs. A well-designed benchmarking process allows companies to develop sustainably in line with the SDGs, while setting them on a race to the top.”

– Better Business, Better World
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Panel Presentation for USQ DBA/PhD program.
Supervisor: Dr Fernando Padro
Dr Paul O’Brien
Fast Facts (global worldwide: slowly we are improving)

- GHG: emissions from pre-industrial 280ppm to currently 400ppm
- Water: 1 in 5 people do not have access to clean safe drinking water
- Waste: 13 tons/single second; 60 kg for every single person in the world; 1.6 Gtons of food wastage annually; about 1/3 of all food produced
- Deforestation: > 80% of the Earth’s natural forests have been destroyed
- Sea-level rise causing whole nations to submerge (e.g. Kiribati, pop. 100k)
- Ocean acidification: whereby over 25 species become extinct daily (reduction in levels of biodiversity)
- Workplace safety: 2.3m annual work related deaths
- Inequality: 82% of the wealth is in the hands of 1% of the population
- Living wage: 3B people live < $2.50/day; 1.3B live in extreme poverty < $1.25/day; 3.7B people earn zero
- Fossil-free nations: Spain, Sweden, Denmark (100 giga factories would do it!)
- Innovative capacity: recently developing nations entering into “Top 25”
- Competitive practices: creates wealth and reduce poverty

Source: UNEP 2017; WRI 2015; ILO 2015; Oxfam 2017; WIPO 2017; OECD 2008
Population growth & CO$_2$ emissions

“Innovation as the Key Driver of Sustainable Agriculture and Future Food Security in the Developing World”.

CHANDRAJIT BANERJEE
Director General
Confederation of Indian Industry

Source: IIASA 2002