The challenges of transitions towards more sustainable business

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ABSTRACT

Several obstacles face Enterprises[1] and their leaders in their transformation journey towards sustainability. Shifting from a siloed and comfortable '*Business as Usual*' approach to creatively leveraging new opportunities requires radical innovation, worldwide integration, institutionalization of processes and the right business strategy. How does one know which strategies outperform others?

This study adopts a design science research approach, building on emerging science-based literature and selected case studies from the past fifteen years to develop a *Sustainability Performance Scorecard* which transparently ranks the corporate sustainability performance of public multinational Enterprises alongside their strategy or business model.

The *Sustainability Performance Scorecard* encourages business leaders to compete with one another and individual consumers to reward Enterprises that choose to *do good to do well* for the prosperity of all humankind.

Keywords: corporate sustainability performance, business strategy, business transformation, sustainability performance scorecard, context-based sustainability, science-based targets.

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[1] Authors use a range of terms interchangeably, when referring to the entity under discussion in their studies. These include: company, institution, organization, corporation, business, firm and enterprise. Wherever possible, this study standardizes on the word 'Enterprise(s)' to mean the entity itself.

INTRODUCTION

Innovative business strategy or business models may well represent our best source for tackling ever increasing systemic planetary crisis (Rockstrom 2009; Robèrt et al. 2013; Steffen et al. 2018). Yet following a comprehensive review, no study nor public tools were found connecting business models with strong sustainability performance by means of context-based measurements and science-based targets (Bocken et al. 2014; Adams et al. 2015; Foss & Saebi 2016; Melkonyan et al. 2017).

Studies reveal that business leaders and innovators report not knowing where to start in making the transition to sustainability (Schaltegger et al. 2016b; Breuer & Lüdeke-Freund 2017; Kurucz et al. 2017). One approach is back-casting (Voros 2003; Willard et al. 2013), whereby we envision the future society we seek and work backward to the present whilst setting milestones along the way. By defining the framework and tools to evaluate corporate sustainability performance of Enterprises, *guidance is provided during their transition to becoming sustainable* and prompts Enterprises to embrace a strive to thrive philosophy, requiring change at scale, pace and scope unseen before (Baue & Thurm 2018; SBTi 2018).

Thus, from an ecological economist risk minimization perspective – at the meso scale - this study conceptually develops *The Holistic Regenerative Integrated Value Enterprise* (THRIVE) framework; providing the basis for formulating tools which openly ranks corporate sustainability performance of multinational Enterprises alongside their business strategy. Here we define business strategy as the enactment of a set of business models (Wirtz et al. 2016)l across the three pillars of sustainability, being the economic, social and environmental (Elkington 2004). The utility of the proposed THRIVE framework and Sustainability Performance Scorecard (SPS) tool ought to encourage radical innovation, compatible with natural science, driving maximum creativity within natural socio-environmental constraints (Gill & Hevner 2013; Pries-Heje & Baskerville 2014; Upward & Jones 2016).

PURPOSE

As a transformative (Mertens 2007) conceptual study it incorporates a comprehensive thematic analysis of the prevailing literature (theory) (Braun & Clarke 2006; Lapadat 2010; Maguire & Delahunt 2017) informed by several case studies (evidence) (Perry 1998; Gomm et al. 2000; Yin 2004; Johansson 2007) using publicly published secondary data in the form of integrated corporate

reports (GRI, CDP) and corporate websites by multinational enterprises worldwide (Szekely & Vom Brocke 2017).

The unit of analysis is the business model (BM) (Teece 2017) with material topics selected based on GRI standards (GRI Material Topics) mapped to the United Nations Sustainable Development Goals (UN SDGs) (Linking the SDGs and GRI). Although studies show that GRI-based sustainability reports do not contain sufficient information needed for judging corporate sustainability performance or how quickly they are approaching sustainability (Isaksson et al. 2009; McElroy 2017), the use of these material topics alongside the formulae and methods developed in this study allows for answering these questions.

Enterprises recognize that they can only manage what is measured (Bansal & Song 2017), and thus are often accused of not measuring what matters! This study develops the THRIVE framework and SPS tool which allows Enterprises to publicly, transparently and accurately self-assess their business model (BM) and corporate sustainability performance (impact) whilst adopting a context-based and science-based approach (*SBTi Criteria and Recommendations* 2018). This study thus supports Enterprise by recognizing that innovations at the business model level (BMI) (Amit & Zott 2012; Kiron et al. 2013; Foss & Saebi 2016) are a precursor to business models for sustainability (Schaltegger et al. 2012; Schaltegger et al. 2016a) i.e. sustainable business models (SBM) (Lüdeke-Freund et al. 2018a).

The extended version of this study incorporates a discussion on the *theory of change* as it relates to business models (Andriopoulus & Lewis 2009; Upward 2013) by considering business enablers and moderators, such as leadership, culture, globalization, collaboration, risk, and regulation.

APPROACH

The study adopts a Systematic Design Science Research (DSR) approach (Aken 2004; Hevner 2007; Gregor & Hevner 2013; Winter & Aier 2016), given the trans-disciplinary (von Bertalanffy 1968; Shrivastava & Guimarães-Costa 2016) and wicked nature of the projected phenomenon under investigation (Kurucz et al. 2017; Lüdeke-Freund & Dembek 2017). Initially, a kernel theory is advanced (Gregor & Jones 2007; Gregor & Hevner 2013), together with illustrative case studies and other public data, to explain and provide justification for the underlying approach (March & Vogus 2010; Winter & Aier 2016). Adopting a high-level systems thinking perspective (Ackoff 1971; Gharajedaghi 2006), the study investigates corporate business models (BM) at the meso

level, illuminating how novel business model design affects performance (Zott & Amit 2007; Martin 2009) and in support of the understanding that business strategy needs design and is about invention and thus requires innovation, as unguided novelty does not necessarily create value (Liedtka 2018).

The flexibility of the DSR approach aids in developing solutions to wicked problems (Foss & Saebi 2018). Credibility is achieved by progressive focusing (Stake 1995) through prolonged engagement (Lincoln & Guba 1985), evaluation of multiple instances (Krefting 1991) and convergence of multiple secondary data sources (triangulation) (Knafl & Breitmayer 1989; Krefting 1991; Morse 1991), explicit documentation of choices made for included truths during discovery and evaluation (Guba 1981), maintenance of chain of evidence (Lincoln & Guba 1985) and narratives/reflexive analysis of records (Ruby 1980) thus improving trustworthiness. Furthermore, this experienced researcher, acting as the instrument is careful to avoid confirmation bias by ensuring objectiveness (Good & Brophy 1985), whilst dictating the framework (Agar 1986), showing expertise in the subject matter (Miles et al. 2014), demonstrating good investigative skills (Miles et al. 2014), strong interest in conceptual/theoretical knowledge (Miles et al. 2014), structural coherence (Guba 1981) and a multi-disciplinary approach (Miles et al. 2014). If possible, and time permitting the final stages will involve peer review by subject domain experts from around the world (Lincoln & Guba 1985).

Transferability is improved through thick descriptions of cases (Geertz 1973), using selective maximum variation of nominated samples (Patton 2002), and longitudinal triangulation of data sources (Krefting 1991; Morse 1991) with explicit general research dimensions as indicated in ***Table 1***, to aid in understanding the researcher's worldview and approach (Krefting 1991); and includes an index of case studies reviewed (Krefting 1991).

As a transdisciplinary study, theoretical triangulation of perspectives is explicit (Knafl & Breitmayer 1989; Krefting 1991; Morse 1991). Together with audits, this ensures comparable conclusions, including a detailed step by step description of the thematic analysis (TA) (Braun & Clarke 2006; Fereday & Muir-Cochrane 2006) and case study (CS) (Perry 1998; Baxter & Jack 2008; Yin 2012) methods employed thus ensuring dependability and confirmability (Kielhofner 1982). By using multiple illustrative example cases (Eisenhardt & Graebner 2007), latent interpreted themes (Ruby 1980) showing coherence (credibility) (Maguire & Delahunt 2017) and consistency (dependability) between the claims and the data (Javadi & Zarea 2016) further aid

reflexivity (Hyett et al. 2014) through sense-making and quantification of the thematic analysis (TA) during the creation of the set of patterns (Lapadat 2010).

Design Research Dimensions			
	Worldview		
	Ontology	**Epistemology**	**Paradigm**
	Atheist / Realist	Rationalist	Critical Realist
	Approach		
	Design/Method		**Lens/Framework/Type**
	Systematic Design Science / Thematic Analysis (Literature/Case Studies)		Transformative / Exploratory / Observational
	Other		
	Logic	**Outcome**	**Ethics**
	Reductive	Cross-Sectional Basic Applied	Humanist

Table 1. Design Research Dimensions used by the Author in this study.

Thus, rigour and trustworthiness are achieved by way of addressing the above issues of credibility, transferability, dependability, and confirmability (Krefting 1991). Case study construct validity is achieved through the evaluation of multiple data sources (Luck et al. 2005; Baxter & Jack 2008; Creswell et al. 2011) coupled with the maintenance of the chain of evidence (Tranfield et al. 2003); and reliability by development of the thematic analysis (TA) database thereby further enhancing rigour (Healy & Perry 2000; Huberman & Miles 2002). Both theory and method triangulation will be sought (Tobi & Kampen 2018). Multiple secondary data sources will include a codebook for consistency and transparency (Rowley 2002), thus providing triangulation and verification (Hyett et al. 2014), and thereby improving the trustworthiness and credibility of the study. This study contributes both to methodology as well as empirically (Gregor & Hevner 2013).

CONTRIBUTION

This study takes a strong sustainability (Neumayer 2010; Pelenc 2015; Landrum 2017), multi-capital (McElroy & Thomas 2015), values-based (Breuer & Lüdeke-Freund 2017) and science-based stance (SBTi 2018) with material topics evaluated within context (McElroy et al. 2008; McElroy 2013; Faber & Hadders 2015; UN Environmental Program 2015; McElroy 2017) i.e. based on inner and outer limits and allocations (Raworth 2012; Reporting 3.0 2018). The Holistic Regenerative Interactive Value Enterprise (THRIVE) framework and associated Sustainability Performance Scorecard (SPS) tool (***Table 2***) resulting from this study, categorically identifies

successful sustainable business models (Bocken et al. 2014; Remane et al. 2017; Fellmann et al. 2018; Lüdeke-Freund et al. 2018b) thereby encouraging Enterprises to adopt sustainable practices (Pansera & Randles 2013; Evans et al. 2017). A comprehensive literature review reveals this is the first study to envision showcasing a quantitative sustainability performance score alongside nominal business model pattern identifications.

THRIVE framework provides a methodological contribution to a strongly sustainable future (Stal 2018; Heikkurinen 2019) as well as forming the basis of practical practitioner's tools such as the SPS. The SPS tool assesses the corporate sustainability performance of business at the business model level (Evans et al. 2017) and identifies which category of business models or strategies are more successful than others. THRIVE tools will be licensed under creative commons, published in journals and made available to academia, business leaders and the public (Creative Commons Website).

THRIVE	Enterprise	Industry	BM pattern	SP score	Sustainable?
Sustainability Performance Scorecard	Enterprise A	Pharmaceutical	32	0.768	Y
	Enterprise B	Technology	14	0.625	Y
	Enterprise C	Household Goods	07	0.891	Y
	Enterprise D	Consumer Goods	27	0.503	Y
	Enterprise E	Health Care	45	1.106	N
	Enterprise F	Financial Services	39	1.282	N
	SPS: 0 <= score <= 1 means strongly sustainable enterprise [Y], score > 1 means NOT a strongly sustainable enterprise [N]. Context-based Sustainability Performance Scorecard (SPS) values are calculated based on figures from public sources covering a range of material topics.				

Table 2. Sustainability Performance Scorecard (SPS). Sample of an instantiation.

The SPS echoes initiatives by the newly formed World Benchmarking Alliance (WBA) and their most recent Seafood Stewardship Index (WBA 2018). Their sustainability ranked '*league'* tables closely aligns performance with the SDGs. Other initiatives or case studies reporting on sustainability (Morioka et al. 2016) which do not categorize based on BM include Climate Counts (Climate Counts 2013), ExxonMobil Integrated Report (Eccles & Krzus 2018) and GIIN: Impact Investing in SEA (Global Impact Investing Network 2018) which focuses on a whole country and sector. In a number of other efforts towards ranking the sustainability performance of Enterprises, there is a lack of methodological transparency or in some cases the source data set may be proprietary (thus subject to bias), as in the case of RobecoSAM (RobecoSAM List of Companies), the '*big 4*' accounting and consulting firms, or Corporate Knights (Corporate Knights 2018 Global 100 Issue). Some like TruePrice (TruePrice Website) evaluate specific raw materials in set regions

only, such as coffee, palm oil, milk, and bananas. And finally, in some cases, sustainability reports simply reflect the level of *disclosure* (e.g: DJSI) (López et al. 2007) without adequately addressing each material topic (UN Environmental Program 2015; WBCSD 2017a) nor attempting to systematically measure the actual sustainability performance of the Enterprises concerned (Lydenberg et al. 2010).

Thus, the SPS assists Enterprises and consumers at large with a better understanding of their impact based on its actual footprint across all three pillars of sustainability: the economic, social and environmental (Elkington 1997). This is achieved by summation of each quotient based on the Enterprise's impact on each material topic, proportional to its allocation. Each quotient is calculated as the actual impact divided by the allotted impact multiplied by its weight (***Figure 1***). It is argued by many as to what these weights ought to be across sectors, industries, and pillars, with some arguing these should be simply set to one and others that they ought to be industry or sector-specific (Eccles 2012; Sironen et al. 2014). Unlike the sustainable value add (SVA) method (Figge & Hahn 2005) which fails to measure the actual sustainability performance of an organization within context, much less from a strong sustainability perspective, the THRIVE SPS method is similar to the approach advocated by the multi-capital scorecard (MCS) (McElroy & Thomas 2015) and sustainability quotient for social footprints (McElroy et al. 2008) where an absolute binary sustainable/not-sustainable orientation is used thus showing an Enterprise' SPS which clearly indicates if they '*are sustainable'* or are '*not sustainable*'.

$$\text{SP score} = \frac{1}{n} \times \sum_{i=1}^{n} w_i \times \frac{x_i}{e_i} \qquad \text{where } 0 < \frac{x_i}{e_i} < 1 \text{ for strong sustainability, and}$$

w_i	is the weight applied to each specific material topic
x_i	actual impact by the Enterprise on material topic i
e_i	allocated footprint for material topic i
i	material topic under evaluation (e.g: Diversity and Equal Opportunity)
n	number of material topics (e.g: 36 for GRI Standard)

Figure 1. Formula for the calculation of the sustainability performance score as detailed in this study.

Whilst this study advocates the use of the GRI material topics (GRI Material Topics), Bailey and Eccles (2018) argue using the sustainability factors as identified by the Sustainability Accounting Standards Board (SASB) mapped to the objectives of the United Nations' Sustainable

Development Goals (UN SDGs). Whilst there are no set metrics specified, a commonly acceptable range of metrics include those by GIIN IRIS providing consistency across the 169 targets, and 230 measurable indicators of the SDGs (*IRIS* 2017). This means that business leaders can manage what is measured (Bansal & Song 2017), and moreover ensures we measure what matters within context using science-based targets (*Assessing Corporate Emissions Performance through the Lens of Climate Science* 2013; UN Environmental Program 2015; *SBTi Criteria and Recommendations* 2018) and uniform units of measure thus ensuring fair comparisons.

CONCLUSION

Designed to provoke transformative change, THRIVE SPS ranking tool transparently provides a public platform to encourage Enterprises to embrace the circular economy (Webster 2015; Geissdoerfer et al. 2017; WBCSD 2017b) through contributing their fair share, and by arming business leaders with the knowledge to actively compete and excel among their peers through alignment with the United Nations Sustainable Development Goals (UN Global Compact 2018) in order to *do good to do well*; and individuals with the ability to actively encourage competition; for greater global shared value creation and collaborative peaceful partnerships for people, planet, profit with purpose and prosperity (Kolk et al. 2017).

Future

As tri-impact integrated reporting becomes the norm featuring comprehensive and complex levels of analysis and automation (Lydenberg et al. 2010; Lai et al. 2016) newer technologies like Artificial Intelligence and Big Data and Analytics (Eccles & Krzus 2018) will bring us a step closer to the next leap towards dynamic Integrated Report Generator Tools (IRTG). These technologies will ultimately only be as good as the underlying frameworks who dictate how data is to be compiled, reports constructed and as accurate and reliable as the source datasets are. This study serves to bridge this gap by contributing to the framework and toolsets necessary to inform these comparisons. Thus, business transformation for sustainability benefits from the more sophisticated THRIVE SPS engine, featuring granular and accurate denominator data and integrated real-time reporting on the global stage, allowing interactive real-time querying of Enterprise's sustainability performance, truly closing the loop on sustainability and the circular economy.

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